SUSTAINABILITY IN U.S. HIGHER EDUCATION: ORGANIZATIONAL FACTORS INFLUENCING CAMPUS ENVIRONMENTAL PERFORMANCE AND LEADERSHIP

by

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy (Natural Resources and Environment) in The University of Michigan 2002

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ABSTRACT

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Chair: Thomas Princen

Despite activists’ calls for higher education to lead society on a sustainable path, there is little systematic guidance available for campus sustainability advocates and scholars. To address this research deficiency, this study identifies organizational factors which determine why and how some campuses are emerging as sustainability leaders while most campuses lag. To develop this framework, this study surveys U.S. (four-year) colleges and universities which have signed the Talloires Declaration on Sustainability (as of April 2001), compares environmental efforts at two public Midwestern universities, and assesses the University of Michigan’s sustainability initiatives.

The results indicate that collaborative decision making structures, progressive/liberal political orientation, a collegial atmosphere, and image-seeking behavior represent strong positive conditions for success in campus sustainability. Initiatives are most successful when driven by diverse stakeholders – with the support of top leaders – acting in a coordinated manner and capitalizing on or creating a “spark”. Change agents are most effective by appealing to personal ethics at low levels in the organizational hierarchy while appealing to institutional strategic positioning (e.g., reputational and recruitment benefits) at higher levels. Campus sustainability initiatives encounter many barriers, most of which are linked to the low priority of environmental issues on the campus agenda and are compounded by a lack of coordination between and among advocates and key constituencies. Current efforts tend to be initial and piecemeal,
but strong efforts in the future will need to be coordinated, comprehensive and institutionalized. The concept and term “sustainability” has the potential to motivate stakeholders toward this long-term, systemic approach. However, the current usage of “sustainability” is largely restricted to ecological issues (thus neglecting interrelated social and economic issues), and is often controversial and confusing.

This study – which is designed to form a theoretical and empirical basis for the field of campus sustainability – points to many areas for future research, including systems modeling of environmental organizational change and the influence of external conditions, leadership and interpersonal relations on campus environmentalism. The implications are limited by social desirability bias, nonresponse bias, an “insider” approach to campus sustainability, and the nonrandom and limited institutional sample used in surveying and case studies.
DEDICATION

To all who are striving to make their campuses a model of sustainability.
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Tom Princen devoted much time and energy to advising this research. Tom’s focus on the main points and “argument” of this dissertation steered me in productive directions and away from never-ending paths. Tom’s gentle but clear guidance kept this work in perspective and greatly influenced the results. For this, I am extremely grateful. Tom Gladwin provided valuable perspectives from the corporate world as well as through systems thinking that helped frame and guide this research. Tom also provided very useful career advice and planning. Jim Crowfoot was extremely helpful in all phases of this project, and stimulated many thought-provoking discussions and insights into the University of Michigan, the social side of sustainability, and organizational psychology. Kellie McElhaney has been involved in every stage of my studies at the University of Michigan, and has constantly provided a supportive ear, excellent advice and corporate as well as writing expertise. Marv Peterson provided the perspective on how this research fits into the broader field of higher education management as well as specific advice about presenting results clearly and concisely. In general, my committee consisted of great thinkers and experts who have provided feedback and guidance as well as much of their valuable time in assisting me through this process. For this, I thank them very much.

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CHAPTER I

INTRODUCTION

College and university faculty have been instrumental in discovering the growing ecological crisis facing the United States and the world. Students are often on the vanguard of the environmental movement, and have helped place environmental issues onto the national and international agenda through activism events such as Earth Day. Calls for reconciliation between human society and the natural world have come from all corners of the academic world. Clearly, faculty, students and others involved in higher education are leaders in the environmental movement. Therefore, one would expect the colleges and universities which house these individuals to be leading society on a more sustainable path. Institutions of higher education have the ability to be leaders in sustainable thought and practice. Yet, there is reluctance on the part of many higher education institutions in the U.S. and abroad to make environmental and interrelated social and economic issues a priority in curricula, research, service and operations. This dissertation explores why and how some colleges and universities in the U.S. are becoming leaders in sustainability while others are not addressing environmental and interrelated social and economic issues in a significant manner. More importantly, this research develops a framework which can help lead to substantial organizational changes by examining the factors which influence organizational responses to sustainability.
Advocates for sustainability in higher education are increasingly demanding radical changes in colleges and universities. For example, Cortese (1999, p. 8) wrote:

If we are to achieve a sustainable future, institutions of higher education must provide the awareness, knowledge, skills, and values that equip individuals to pursue life goals in a manner that enhances and sustains human and non-human well-being.

Beyond simply adding a few classes on environmental issues and sustainability, advocates are calling for a fundamental rethinking of how institutions of higher education educate students, conduct research, interact with local communities and ecosystems, operate their campuses, and provide a model for other social institutions. However, scholars in higher education management and organizational change assert that colleges and universities do not typically change quickly or radically. Authors such as Altbach (1974, p. 2) point out:

There is no question that universities are among the most conservative of institutions. They have been notably slow to change their curriculum, organization or structure. Traditions of academic governance date back to the Middle Ages, and academics often take these traditions seriously.

Therefore, there is a conflict between the revolutionary changes called for by leaders in the sustainability in higher education movement and the incremental changes which typically occur in colleges and universities. Advocates for other social issues – such as affirmative action, anti-smoking, anti-apartheid and fair wages – have at least partially overcome this institutional inertia problem and caused changes in the structure and operation of U.S. institutions of higher education, albeit after facing considerable organizational resistance. Issues related to sustainability have not yet reached this pinnacle, in part because of the unique characteristics of environmental and interrelated social and economic problems.

Although the ecological and social conditions that provide the rationale for sustainability are considered a crisis by advocates, environmental and sustainability issues typically fail to obtain the attention of college and university decision makers.
This situation is becoming increasingly frustrating to stakeholders attempting to create organizational change for sustainability. For example, Uhl et al. (2000, p. 155) claim:

> Our universities are much too timid. They contain enormous brain power, but a dearth of vision, courage, and moral responsibility. By and large, they seem to be more concerned about ‘training’ students to fit into a status quo world that is unraveling, rather than forthrightly addressing the causes of this ‘unraveling’ and offering our young people a sense of hope and purpose. Our universities have great leverage but they fail to use it in creative and exciting ways.

I have experienced this same frustration during environmental activism work at the University of Michigan. For example, although environmentalists consider global warming to be a serious problem, and many classes warn of the dangers of global climate change, the University of Michigan has not committed to reductions in greenhouse gas emissions, despite pressure from students, faculty, staff, alumni and community groups. Therefore, this dissertation fulfills both a personal and scholarly goal: To bridge the divide between the sustainability-leadership potential of higher education and the slow pace of change (and lack of attention to environmental and interrelated social issues) among colleges and universities by developing strategies for creating campuses which can and will lead society toward sustainability.

This dissertation is important because no other scholar has undertaken such an in-depth analysis of the organizational conditions and factors involved in managing for sustainability in higher education. In general, the literature on environmental issues in higher education is sparse. However, potential change agents need to understand how and why colleges and universities respond to issues related to the environment in order to craft appropriate organizational change strategies. Researchers require a framework upon which to base analysis of sustainability in higher education. Therefore, this study is intended for both of these audiences. The ultimate goal is to provide a “roadmap” for stakeholders attempting to create organizational change for sustainability as well as
scholars. This “roadmap” is not a complete guide or set of instructions to translate potential institutional leadership into initiatives and actions, but rather a starting point.

This research is largely exploratory. The preliminary framework begins with the idea that campus organizational conditions (unrelated to environmental issues) provide an atmosphere conducive to (or resistant to) sustainability-leadership. To move from potential sustainability-leadership into action, potential change agents must be strategic in presenting the benefits of organizational commitment to sustainability to important stakeholders. The framework for this study predicts that the best approach is to appeal to the long-term strategic positioning and ethics of the institution. Generally, sustainability-leadership rationales must be compelling enough to overcome the expected barriers of the higher priority of other issues, institutional inertia, lack of funding and lack of time. The outcomes of effective campus sustainability efforts should be visible in operations, teaching, research, and service. Institutions displaying true leadership will orient their decision making toward sustainability, which implies long-term, systemic, comprehensive programs and policies which seek to address underlying causes of environmental and interrelated social and economic problems.

A major assumption underlying this research is that environmental issues are of critical importance, and that colleges and universities have a major responsibility to society to advocate for and be a model of sustainability. This assumption reveals my personal interest in and knowledge of campus sustainability. My perspective on the topic is as an “insider” – in the ethnographic tradition – which offers advantages in terms of a long-term and in-depth framework from which to assess organizational factors. However, this perspective may limit the analysis because of my pre-inclination toward examining particular organizational factors (i.e., the ones that I have experience with) as well as my concern that colleges and universities do indeed move toward sustainability (i.e., an environmental “activism” or “advocacy” agenda). My focus is on how to make organizational changes, in part by analyzing advocacy strategies for convincing critical
stakeholders of the importance of considering environmental and interrelated social issues. While the scholarly and advocacy agendas are clearly intertwined, the analysis throughout the document focuses on implications for building a theoretical and empirical model of campus sustainability. The concluding chapter presents implications for advocacy.

Although the implications of this study may be far-reaching, generalizability is constrained by the use of a survey of the 59 institutions of higher education that have signed the Talloires Declaration on Sustainability (sampling a maximum of 13 individuals at each campus) out of the over 3,500 colleges and universities in the U.S. The nonrandom sample and possibilities for nonresponse bias lead to conclusions which may or may not be applicable to all campuses in the U.S., particularly since institutions which have signed the Talloires Declaration are more likely to be leaders in sustainability. The generalizability of the comparative case study of two public, Midwestern universities is constrained by the nuances of the chosen campuses as well as the limitations of on-campus visits and document analysis. The generalizability of the case study of the University of Michigan is constrained by my involvement (as with all ethnographic studies) as well as the unique processes at this large campus.

Chapter II of this dissertation analyzes five bodies of literature: sustainability theory, higher education management, corporate environmental management and social responsibility, transformational leadership, and sustainability in higher education. Chapter II concludes by formulating five research questions and a set of propositions which form the preliminary framework for analyzing the organizational factors influencing sustainability in higher education. Chapter III outlines major constructs and the rationale for choosing three complementary data collection methods, and then describes the specific methodologies. Chapter IV analyzes survey data from the 59 U.S. colleges and universities which have signed the Talloires Declaration on Sustainability. Chapter V contains a comparative case study of two institutions at different stages in the
sustainability-leadership process. Chapter VI assesses sustainability efforts at the University of Michigan based on my experiences. Chapter VII revisits the five research questions, revising the preliminary framework to fit the data collected and create a framework for future theory and practice. Chapter VII also outlines implications and shortcomings of this study as well as areas for future research.
CHAPTER II:

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

This dissertation – at its most basic level – analyzes organizational decision making, defined as “the process of responding to a problem by searching for and selecting a solution or course of action that will create value for organizational stakeholders (Jones 1995, p. 458).” For this study, the organizational context is higher education, the problem is ecological and interrelated social and economic issues, and the course of action is to become a sustainability or environmental-leader (or to pursue no action). Substantial theoretical work exists on sustainability, higher education management and organizational change, and – to a lesser degree – corporate environmental and social responsibility as well as transformational leadership. However, very little work exists at the intersection of these fields, namely sustainability-leadership and management in higher education. Therefore, a major goal of this dissertation in general – and Chapter II specifically – is to integrate knowledge from disparate fields to generate research questions and initial propositions, thereby building a model of organizational factors influencing sustainability in higher education. This framework is tested, refined and reformulated through data gathered by surveys and case studies (Chapters IV, V and VI).

Each section of Chapter II builds this framework by critically assessing a body of literature. The first section analyzes sustainability theory to establish the framework
through which this study assesses environmental and interrelated social and economic issues. The next section analyzes competing and complementary theories of higher education management to establish the framework through which this study assesses organizational change. The following two sections analyze environmental management and social responsibility in business as well as transformational leadership, as they relate to higher education and sustainability management. The fifth (and most in-depth) section reviews the small, but emerging literature on sustainability in higher education, focusing on defining and assessing the process of becoming a sustainable college or university. The sixth (and final) section uses the reviewed literature to outline the research questions and initial propositions which form the initial sustainability in higher education performance and leadership model for this dissertation.

**Sustainability**

Sustainability is a term and concept that is much used and much abused. To clarify the meaning and usefulness of sustainability – which forms the conceptual basis for the discussion of environmental (and social) issues contained in this dissertation – this section discusses the concept in its historical, socially constructed context, beginning with the evolution of the concept, continuing with modern usages and concluding with research gaps that this dissertation will partially fill. My underlying assumption and argument is that the unique attributes of sustainability – characteristics which competing or complementary conceptualizations of environmental and interrelated social issues cannot claim – are what make the concept useful, particularly as an orienting tool for organizational managers.

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1 Note that sustainability and sustainable development are used interchangeably (unless otherwise noted) since this is common in both theory and practice.
Social Evolution

There are two distinct views on the evolution of the concept of sustainability, which differ greatly in describing the role of social issues in the concept’s development. On the one side, Kidd (1992) claims that of sustainability’s six “roots” – which emerged since 1950 – some are ecological in origin while others are social in origin. These roots include not only many strands of environmentalism – including “limits to growth” and conservationism – but also strands of social activism, such as movements to eliminate poverty. Thus, Kidd concludes that sustainability arose not as a narrow ecological concept that tacks onto a broader philosophy, but as a novel, integrated approach to environmental, social and economic progress. This evolutionary path presumes that sustainability is, at its very root, a transcendent concept with the ability, even the responsibility, to become a cross-disciplinary, holistic paradigm. The issue is not whether sustainability should include social and economic issues in its modern conceptualization, but rather how to implement sustainability as an integrated approach.

On the other hand, Lele (1991) claims that the term came into prominence in 1980 when the International Union for the Conservation of Nature and Natural Resources (IUCN) presented the World Conservation Strategy with “the overall aim of achieving sustainable development through the conservation of living resources (p. 610).” From Lele’s perspective, the original concept of sustainability addressed only the issue of ecological sustainability, rather than the currently recognized broader agenda of sustainable development. Thus, Lele and other analysts question whether social and economic concerns belong under the umbrella of sustainability. Focusing on ecological concerns is a difficult task in and of itself; perhaps focusing on social concerns as well simply leads to endless debate and little progress. From this perspective, the immediate
issue is not how to implement social and ecological sustainability, but rather how to delineate the boundaries of sustainability so that it is useful for policy and organizational implementation. This historical debate over the inclusion of non-ecological issues in sustainability continues today, and will be revisited in the case studies.

The term sustainability (or, more precisely, sustainable development) received a large boost and a widely accepted, yet broad definition from The World Commission on Environment and Development (the Brundtland Commission) in 1987 (p. 8): “…to meet the needs of the present without compromising the ability of future generations to meet their own needs.” This definition – which became further entrenched at the 1992 Rio Earth Summit – provides the baseline for most discussions of sustainability. However, the definition masks the fierce debate between ecologists and economists over the role of economic growth and ecological carrying capacity in sustainable development. Orr (1992, p. 23) wrote, “The commission, therefore, politely appeased both sides of the debate. The word ‘sustainable’ pacifies environmentalists, while ‘development’ has a similar effect on businessmen and bankers.” Authors have referred to this debate in different ways such as: anthropocentrism vs. ecocentrism (Gladwin et al. 1995; Starik and Rands 1995); weak vs. strong sustainability (Mazmanian and Kraft 1999); technological vs. ecological sustainability (Orr 1992): cornucopia vs. neo-Malthusia (Meadows et al. 1992); and economic vs. biological sustainability (Costanza et al. 1997).

The basic assumption of the anthropocentric/technological advocates is that environmental problems have solutions within the dominant paradigm because nature is resilient, and humans and the natural world have split. From this perspective, long-term survival is based on human ingenuity, and humans need to keep pursuing economic
growth and looking for market and technological solutions to environmental problems. On the other hand, ecocentric/ecological advocates argue for fundamental changes in our social systems, since their design causes environmental and social degradation. The argument focuses on the root of environmental problems in an attempt to find systemic, revolutionary solutions that recognize limits to growth and the intrinsic value of ecosystems and species. The meshing of these paradigms in the Commission’s definition is at best awkward because the clashing of these viewpoints continues, including in the debates over campus environmental management highlighted in this dissertation.

Despite this conflict (or, perhaps, because of this conflict), starting in the 1970s and particularly since the Commission’s definition in 1987, sustainability has been defined by countless authors and has received widespread (if not unanimous, nor particularly vocal) support. “In a remarkably short time it has evolved from a concept put forward by a few scholars to a widely accepted and influential idea in the continuing debate over the future of the world (Kidd 1992, p. 3).” While the concept of intergenerational equity can be traced back to Thomas Jefferson, Immanuel Kant and Edmund Burke, among others (Ball 2000), sustainability has become far more influential over the past 25 years. Therefore, the question is: Why has sustainability risen to prominence in the last couple of decades and not before?

The reasons for sustainability’s rise fall into at least three categories: scientific, philosophical and practical. First, scientific evidence about the urgency of environmental issues has increased exponentially in the past 20-30 years. Disasters such as Bhopal and the Exxon Valdez, combined with recognition of long-term trends such as global warming and predictions of dire environmental consequences in the future, have made
environmental issues at least a second tier consideration (Bernard and Young 1997). This rise in scientific evidence more clearly linked human activities to environmental consequences, and subsequently encouraged a more integrated way of viewing environmental and interrelated social issues (i.e., sustainability). Second, it is difficult to argue philosophically against sustainability. Who can be against ensuring the future of the world? Since the concept has remained ambiguous, decision makers have been able to satisfy constituents’ environmental concerns by committing symbolically and philosophically to sustainability without expending political capital to actually enact change. Therefore, decision makers have encouraged the emergence of the concept of sustainability since it provides a philosophical outlet for concerns without mandating activity. Third, environmentalists are increasingly recognizing the practical need to join with other social activists in order to amalgamate power. Sustainability provides a potential forum for this linkage, despite the previously discussed substantive debate over the inclusion of social issues in the concept of sustainability. Therefore, sustainability has become a rallying point for environmentalists, and activism literature is filled with calls for protecting future generations through the application of the principles of sustainability.

**Conceptualizations**

The many theorists attempting to define sustainability have left few stones unturned in describing sustainability as an ideal end-state, a moral principle (Viederman 1995), an ethic (Leopold 1949), and the avoidance of ecological surprise (Holling 1986; King 1995), among other definitions. Gladwin (1998, p. 36) summarizes the current state of the debate as follows: “At a high level of abstraction the literature suggests that
sustainable development is a process of achieving human development (widening or
enlarging the range of human choice) in an inclusive, connected, equitable, prudent, and
secure manner.” My review of definitions and conceptualizations of sustainability
reveals several concepts that are integral and widespread: long-term survival, integrity
and maintenance of systems, limits, interdependence and - to a lesser degree - equity.
Unfortunately, the reason for agreement on these concepts is not necessarily because of
their superior qualities or uniqueness, but rather because of their potential for differing
interpretations. For example, the concept of “limits” is acceptable to technological
sustainability advocates if the limits are neither immutable nor nearby. Analysts who
reject the importance of social sustainability can accept interdependence, if the concept is
applied to ecological systems. Long-term survival is agreeable to everybody, but is
tricky when it comes to implementation.

The literature reveals an emerging consensus about the three pillars of sustainable
development (also known as “the triple bottom line” (Elkington 1998)) – ecological,
economic and social sustainability – although different analysts give priority to different
pillars.

Ecological Sustainability: Ecological sustainability is by far the most well-
defined and widely cited area of sustainability. The Natural Step’s first 3 “system
conditions” provide one influential perspective on ecological sustainability: “In order for
a society to be sustainable, nature’s functions and diversity are not systematically: 1)
...subject to increasing concentrations of substances extracted from the Earth's crust;
2)...subject to increasing concentrations of substances produced by society; or
3)...impoverished by overharvesting or other forms of ecosystem manipulations (Nattrass
and Altomare 1999).

These conditions include the concepts of carrying capacity (Daily and Ehrlich 1992), population stability (Ehrlich and Ehrlich 1993), ecosystem health and integrity, waste production not exceeding assimilative capacities, sustainable yield (Daly 1996), no net depletion of non-renewable resources, maintenance of ecosystem services (Costanza et al. 1997) and ecological resilience (Holling 1986) that have dominated discussions of sustainability. These concepts have often become synonymous with the broader notion of sustainability, much to the dismay of social and economic sustainability advocates. “Most people use the phrase ‘sustainable development’ interchangeably with ‘ecologically sustainable or environmentally sound development,’” wrote Lele (1991, p. 608). This is problematic because it limits the concept of sustainability to biophysical issues.

Social Sustainability: Social sustainability has proved to be intractable both analytically and in practice. Therefore, it is less well researched than ecological and, to a lesser degree, economic sustainability (Gladwin et al. 1995). Authors have pointed to fair distribution of resources (Daly and Cobb 1994), communalization of decision making (Gladwin et al. 1995), humanization of capital, sharing of power and maintaining population at levels below carrying capacity as major facets of social sustainability. However, the concept has not been well defined or integrated into other concepts of sustainability to date.

Economic Sustainability: Herman Daly – an ecological economist – has provided the theoretical basis for much of the rather limited work on defining economic sustainability. Hawken’s (1993, p. 139) influential definition of economic sustainability was greatly influenced by Daly: “Sustainability is an economic state where the demands
placed upon the environment by people and commerce can be met without reducing the
capacity of the environment to provide for future generations.” Other authors have added
notions of maintaining net benefits forever (Munro 1995), non-declining utility
(Tietenberg 1996), shifting from quantitative to qualitative measures of progress (Daly
and Cobb 1994), accounting for full costs, and reducing the scale of the economy to be in
line with the ecology of the planet (Daly 1993). Economic notions of sustainability are
widely accepted within the environmental community, but are widely refuted (or, more
precisely, ignored) by economists, policy makers and other decision makers in society.

Overall, 50 years after the roots of the sustainability movement began (Kidd
1992), the concept is still ambiguous and few philosophical debates have been resolved.
The next section reviews theoretical critiques of sustainability which largely stem from
this lack of clarity. However, this ambiguity and controversy is particularly problematic
when an institution attempts to incorporate sustainability into management systems. As
Bartelmus (1999. p. 1) put it: “Agreement ends with attempts at operationalizing the
elusive notion of sustainability.” Therefore, analysts and practitioners need to focus on
clarifying the unique attributes of the concept to make it useful as a management
paradigm, and turn a potential weakness into an advantage.

Critiques

Most critiques in the literature leveled at the concept of sustainability attack the
standard (the Brundtland Commission) definition outlined previously. The most poignant
critique is that in attempting to strike a balance between ecology and economics, the
concept of sustainable development is too broad. Tietenberg (1996, p. 538-39) claims:
“Being all things to all people can build a large following, but it also has a substantial
disadvantage; close inspections may reveal the concept to be vacuous.” Moreover, the balance between “sustaining” and “development” “papers over a deep North-South divide and fails to answer critical questions,” wrote Esty (2001, p. 75).

This flaw has the potential to undermine sustainability as a concept and goal, largely because of its potential for corruption if scholars and practitioners do not use analytical precision. However, fighting corruption of sustainability, whether it is intentional or not, does not mean that one, all-powerful, standard definition of sustainability is necessary. In fact, there may never be a consensus definition of sustainability – as is the case for many big ideas (like democracy, peace and justice) – which may not necessarily be a weakness of the concept. “The roots of the term ‘sustainability’ are so deeply embedded in fundamentally different concepts, each of which has valid claims to validity, that a search for a single definition seems futile. The existence of multiple meanings is tolerable if each analyst describes clearly what he or she means by sustainability,” wrote Kidd (1992, p 2). The meaning and application of sustainability are contextual (Kay and Schneider 1994), and sustainability could simply be at an initial stage when definitions are still being defined. According to Gladwin (1999, p. 3), “The notion appears set to remain fuzzy, elusive or contestable for some time to come. This is to be expected during the emergent phase of any new, big and generally useful idea.”

Another potentially poignant critique – which is largely ignored in the literature – is that sustainability is a “moving target”. A sustainable relationship with the natural world implies that the same opportunities will be available to future generations of people and biota as are currently available. The problem is that environmental and social
conditions degrade daily and may already be in an unsustainable state. A sustainable society ten years from now might not be considered livable by today’s standard. Thus, the concept loses value as time progresses, and some theorists – such as Paul Hawken – are beginning to turn to the concept of “restoration” to replace sustainability and imply restorative progress instead of stagnant maintenance. This idea has not yet been developed theoretically, but represents the potentially powerful notion that it is not enough to simply maintain resources over time.

A less well-founded and often implicit (yet prevalent) critique of sustainability is that in calling for systemic changes that are difficult, incremental improvements are rejected. The concept of “eco-efficiency” (Fussler 1996; DeSimone and Popoff 1997; von Weizsacker et al. 1998) – which means increasing productivity for each resource unit used – claims to be a “route” to efficiency, but actually often rejects the systemic changes necessary to achieve sustainability. Although incremental change is necessary for sustainability, it is not sufficient (Gladwin et al. 1995). As McDonough (1998, p. 85) points out:

Eco-efficiency is an outwardly admirable and certainly well-intended concept, but, unfortunately, it is not a strategy for success over the long term, because it does not reach deep enough. It works within the same system that caused the problem in the first place, slowing it down with moral proscriptions and punitive demands. It presents little more than an illusion of change. Relying on eco-efficiency to save the environment will in fact achieve the opposite - it will let industry finish off everything quietly, persistently, and completely.

Many critiques of sustainability are applicable mainly to certain definitions of the concept. For example, ecocentric theorists (e.g., Starik and Rands 1995) complain of the anthropocentrism inherent in the Brundtland Commission’s definition of sustainability. Other theorists take issue with the lack of guidance for implementation in most
sustainability definitions. Esty’s (2001) stinging critique of sustainable development asserts that the concept has not had any impact and is still undefined: “Many flocked to the banner of sustainable development, but it led them nowhere…For all its laudable goals and initial fanfare, sustainable development has become a buzzword largely devoid of content.” Moreover, Esty claims that attempts to combine social and economic issues with environmental issues are misguided because, while the issues are linked, ecological issues “tend to get the short shrift” when considered along with profits and ethical issues. Therefore, it is not wise for environmentalists to promote sustainability or sustainable development.

My belief is that critiques of sustainability can be overcome with greater precision in the utilization and application of the concept. In the words of Meppem and Gill (1998, p. 123): “Few concepts have been applied with less precision and consistency in policy circles than ‘sustainability’.” The next section outlines how the unique attributes of sustainability can provide this precision by delineating the boundaries and advantages of the concept of sustainability.

**Uniqueness (i.e. Advantages)**

My assertion is that if the words “environment”, “ecology”, “green”, “development”, “progress”, “stewardship” or any other synonym can be substituted for the word “sustainability”, the concept has lost its value, which lies in the uniqueness of its meaning. Richard and Gladwin (1999) point out the most controversial unique attribute of sustainable development: the fact that the concept adds socio-economic concerns to ecological concerns. As discussed previously, the social roots of sustainability are debatable and many usages of sustainability omit social concerns.
However, the inclusion of social sustainability (in the broad context, including economies) in the debate makes too much sense from a physical, philosophical and practical standpoint for continued omissions (i.e., social sustainability advocates will win the debate). From a physical standpoint, ecological sustainability is only possible through social sustainability since social processes – like economic growth – drive overconsumption and poverty (which in turn lead to ecosystem degradation). Moreover, social systems are contained within ecological systems. From a philosophical standpoint, the separation of ecological and social sustainability is morally indefensible since it implies continued separation of mind and spirit from matter and nature. From a practical standpoint, social advocates, including environmentalists, need to join forces to accomplish their agendas, which are increasingly recognized as overlapping.

The potential for sustainability to cross disciplinary, organizational and cultural boundaries is well noted in theory, but has often failed in practice. Because of the potential for the concept to be a critical organizing principle for the 21st century and because of its broad intuitive appeal, many authors have speculated on the possibilities for a trans-boundary emphasis on sustainability in the future. As Uhl (1996, p. 1308) noted: “No other concept seems to compare to it in terms of its ability to cut across virtually all disciplines and in its fundamental importance to the human enterprise.” Lele (1991, p. 615) claims that one of the main values of sustainability “lies in its ability to generate an operational consensus between groups (with different opinions).” Although the relative newness of the concept may help explain why examples of individuals, organizations or communities truly organizing around sustainability are rare, this
potential cannot be ignored, and is a major factor in making sustainability a desirable and potentially powerful orienting concept.

Sustainability is not an incremental strategy for environmental and social change. While incremental strategies might be easier for many decision makers to grasp and have dominated the environmental debate to date, they will not lead society toward solutions to environmental and interrelated social problems over the long-term. For example, recycling is not the final solution to problems caused by overconsumption of material goods. A more “sustainable” approach to overconsumption is analyzing the root causes of consumptive decisions, and identifying levers to change destructive patterns. Therefore, part of the usefulness and uniqueness of the concept of sustainability is that it helps potential change agents conceptualize and operationalize systemic, paradigmatic shifts by rejecting sole reliance on incremental change.

The final (and perhaps most important) advantage of sustainability – which has not been empirically tested – is the potential for the concept to catalyze individuals and groups to implement needed social and environmental change through promoting integrated, long-term, trans-disciplinary, systemic thinking in people and organizations. Other recent buzzwords have run their course because of their relatively limited aims and abilities. However, the literature ignores the possibility that sustainability has such broad reach and intuitive appeal that it may serve to motivate individuals and organizations in a fundamentally different manner. Sustainability may unlock the doors to altruism and long-term thinking (or, as some theorists have described these traits, “enlightened self-interest”). This vast motivational potential has been largely untested in theory, but is beginning to be tapped in practice through the simplicity movement, sustainable
community initiatives, sustainable business consortiums and sustainable campus movement, among other initiatives.

“SD (sustainable development) is in real danger of becoming a cliché like appropriate technology – a fashionable phrase that everyone pays homage to but nobody cares to define,” wrote Lele (1991, p. 607). This danger can be overcome with more analytical rigor and a focus on the unique advantages of the concept in terms of motivation, trans-boundary appeal and systemic reach. A specific consensus definition of the concept is not expected nor desired because this would end the healthy debate and lessen the importance of various conceptualizations. As Daly (1996, p. 2) put it: “While accepting the inherent overlap and vagueness of all dialectical concepts, there still remains much room for giving content to and sharpening the analytical cutting power of the idea of sustainable development.” Focusing on uniqueness best sharpens this cutting power. Sustainability must “do something” that other concepts do not to be a useful framework for discussion and action regarding the future of the planet. If sustainability is used in a unique way as an orienting concept to move the management of environmental issues toward a long-term, systemic, cross-boundary focus, then “sustainability” becomes far more than just another word or concept. This use of the concept of sustainability as an indicator of these long-term, systemic perspective is tested in theory and practice in this study. More specifically, this dissertation examines conceptualizations of sustainability, and the impact of a sustainability orientation on outcomes of environmental initiatives in higher education.
Contribution of This Study

The concept of “sustainability” forms the philosophical and managerial basis for analyzing environmental and interrelated social and economic issues in this dissertation. One of the major aims of this research is to identify and assess differences between environmental management systems based on campus stakeholder perceptions of “sustainability” as opposed to those based on “environmental”, “greening”, “stewardship” or other related concepts. In this way, this study tests the motivational potential and practical influence of orienting towards sustainability in a campus setting. Moreover, this dissertation exposes the various and conflicting meanings of managing and teaching sustainability at colleges and universities. The analysis pays careful attention to whether campus stakeholders’ conceptualizations of sustainability include interrelated social and economic issues in order to develop an understanding of the how the concept is practiced “in the field”. Therefore, this study examines whether sustainability is another “buzzword” or if the concept signals a deep, systematic approach to the management of environmental and interrelated social and economic issues.

Overall, the dissertation will help demonstrate how and why college and university environmental change agents can and should expand sustainability from its largely theoretical stage into an implementation stage by focusing on the concept’s unique attributes. Moreover, this study helps develop an area of research on the motivational potential of sustainability, which is needed because, in the words of Tibbs (1999, p. 5): “To adopt sustainability as an organizational policy objective is one thing: to understand what it means in practice is not so straightforward.”

Higher Education Management & Organizational Change

This section analyzes leading theories of higher education management and organizational change. The first subsection describes college and university management from a historical perspective, while the second focuses on seven unique attributes of these
institutions. The next subsection assesses the prospects for organizational change at colleges and universities. The fourth and final subsection identifies potential contributions that this dissertation will make to the field of higher education management, which include analyzing social responsibility as a driver for organizational change and developing a deeper understanding of campus decision making on environmental issues. Generally, this section provides the framework for the more in-depth evaluation of organizational factors and organizational change in subsequent sections and chapters.

**College and University Management**

The historical development of thought on higher education management generally parallels the field of organizational theory. Until the 1960s, the dominant theories to explain college and university management – Weberian principles of bureaucracy and Taylorist principles of scientific management – focused on rational decision making (Peterson and Mets 1987). These principles assert that managers have (or, at least, should try to exert) control over higher education institutions, and that rational decision making produces predictable organizational outcomes. In other words, college and university administrators can and should be effective in setting organizational directions and achieving goals. The analogy for this view of organizational management and function is a “machine”, which implies direct controls and predictable outcomes (Bolman and Deal 1997). While theorists did not literally believe that college and universities were operated exactly like machines – with non-thinking entities performing different functions – the dominant view was that rationality, efficiency and control were the ideal attributes of management. These theories and practices were called into question during
the social unrest of the late 1960s and early 1970s as students and faculty claimed that colleges and universities were too rigid, complex and impersonal. New theories that focused on the inevitability and desirability of political power of multiple communities and constituencies soon emerged, which explicitly rejected the rationalistic notions of the past (Baldridge 1971). These theories assume that competing forces (such as trustees, administrators, government, faculty, alumni and students) resolve conflict through negotiation and political tradeoffs. Institutional leaders base decisions on the relative power and skill of the competing factions as opposed to a rational assessment of the best possible scenarios.

In the mid-1970s, increasingly complex and less deterministic models challenged the political models. For example, Cohen, March and Olsen asserted that 4 streams – problems, opportunities, solutions, and participants – are mixed in a “garbage can”; the best predictors of what comes out of the garbage and gets accomplished are time and fortuitous circumstances, not rational or political decision making (Cohen and March 1997). Cohen and March created the image of colleges and universities as “organized anarchies”, in which change is unpredictable because of the random but politicized nature of stakeholders with different agendas (Simsek and Louis 1994). These models assume that desire for outcomes and actual outcomes are disaggregated (i.e., colleges and universities are not directly controllable and are subject to chaotic variations).

The late 1970s and 1980s produced models that focused on “outside” influences, including the importance of culture. For example, “ecological” models stress that colleges and universities are open systems, receiving inputs from many sources, and are subject to environmental circumstances over which the institution has little control (Youn and Murphy 1997). These models meshed with “cultural” models that stressed the importance of institutional culture, which is imported from outside entities and reflected
in organizational processes (Peterson and Mets 1987). The major assumption in both of
these influential models is that choice of organizational direction is limited.

The 1990s added little in the way of new theoretical perspectives on college and
university management, but rather focused on analyzing “multiple frames”, which build
on, but do not replace, past perspectives. The assumption is that different perspectives
apply in different settings. For example, Birnbaum (1988) developed “cybernetic”
institutional theory by combining systems thinking with collegial, bureaucratic, political
and anarchical perspectives. In addition, theorists continued the shift in focus from
purposeful control to complexity and bounded (or lack of) rationality, thus highlighting
diversity, symbols and culture. Generally, a consensus approach to conceptualizing how
colleges and universities make decisions has not emerged. However, there is agreement
that colleges and universities are complex, with multiple competing interests. For the
purposes of this dissertation, this complexity and competition are important as a
conceptual framework to understand how stakeholders respond to environmental issues.

The Distinctiveness of Colleges and Universities

Colleges and universities share many commonalities with other organizations, yet
are decidedly unique. This distinctiveness – highlighted by the following seven attributes
derived from the literature – is important not only in understanding decision making
processes for issues such as sustainability, but also in evaluating the applicability of the
results of this research to other types of institutions, such as corporations (see Chapter
VII).

1) DIFFUSION OF POWER: While higher education institutions have boards and
presidents with formal control, they also have faculty and student governing bodies as
well as administrators with varying levels of responsibility and power (Birnbaum 1988).
To complicate matters further, public colleges and universities (and even private institutions to a lesser degree) receive governmental oversight, which varies by state law and political climate (Green and Hayward 1997). Theorists disagree over whether a dominant entity controls universities. Clark (1997, p. 171) wrote, “In a college, the key group of believers is the senior faculty. When the senior men are hostile to an emerging theme, however it was introduced, its attenuation is ensured.” However, Green & Hayward (1997) see “academic CEOs” as the most powerful entity in universities. In any case, power is diffuse and shared in academia.

2) SYMBOLIC LEADERSHIP: College and university leaders typically exercise far less authoritative control than their counterparts in the business world (Green & Hayward, 1997, p. 32). Higher education presidents are important, but they are not dominant. “Presidents may have relatively little influence over outcomes when compared with other forces that affect organizational functioning,” claims Birnbaum (1988, p. 24). Therefore, campus leaders use symbolic and cultural gestures to exercise power and authority, particularly over well-entrenched constituents such as tenured faculty. These gestures include policy statements, official proclamations, awards ceremonies and other ways to influence the strategic direction of the institution without using direct, authoritative control.

3) HORIZONTAL ORGANIZATIONAL HIERARCHY: In colleges and universities, there are typically only three layers (department chair, dean, provost) between line workers (i.e., faculty) and the president, as opposed to the many vertical layers in similar-sized corporations (Birnbaum 1988). This does not mean that faculty members always have direct access to presidents, but it does mean that communication between the different members in the organizational hierarchy is possible with less distortion than in other organizations of similar size.
4) LOOSE COUPLING OF ORGANIZATIONAL SYSTEMS: Events affecting one department or functional division at a college or university can affect the whole institution but “each event also preserves its own identity and some evidence of its physical or logical separateness” (Weick, 1975, p. 3). Elements of colleges and universities are responsive to each other, but not necessarily directly and predictably (Birnbaum, 1988, p. 31). For example, changes in structure and enrollments in the history department may affect the biology department, but it is not clear how. Therefore, subsystems within colleges and universities tend to be less responsive to perturbations in the outside environment, more open to innovation, more amenable to self-determination, and more able to contain problems (Weick 1975). However, coordination of an entire college or university is very difficult in this “loosely coupled” system.

5) LOW LEVELS OF ACCOUNTABILITY: Many stakeholders within colleges and universities exhibit low levels of accountability. The stereotypical example of this comes from the relative lack of power that administrators have in motivating tenured faculty. Low levels of accountability are present throughout the institution since there are few administrators compared to faculty and staff, and the goals and tasks of individuals are not always clear (Birnbaum 1988). Low accountability often leads to less administrative control of organizational direction.

6) COMPLEX MISSION: The mission of higher education institutions goes far beyond the traditional three prongs of teaching, research and service (Balderston 1995). Colleges and universities embrace multiple and sometimes conflicting basic goals that derive from their complex missions. Moreover, mission occupies a central function for colleges and universities, as it does for nonprofits and governmental agencies, but not necessarily for corporations. An important implication of this mission-focus is that, unlike corporations,
institutions of higher education do not have a single metric (i.e., financial performance) and goal (i.e., to increase shareholder value) to measure performance (Birnbaum 1988). Therefore, campuses spend large amounts of time and effort discussing, revising and setting goals and priorities that stem from the basic mission, which typically includes social responsibility, and – this study will argue – can be connected to environmental issues and sustainability through effective advocacy strategies.

7) MULTIPLE CULTURALISM: Stakeholders within colleges and universities exhibit allegiance to multiple professional and managerial cultures. At the managerial level, Rothblatt (1995, p. 35) wrote, “Universities contain a mixture of collegiate, managerial, senatorial, centralized and decentralized governing styles.” Kuh and Whitt (2000, p. 169) claim: “Colleges and universities are not monolithic entities. Subgroups have their own artifacts and values, which may differ from the host’s institutional culture.” For example, faculty feel responsibility not only to their home institution, but also to their discipline, academic profession and the national system of higher education (Masland 1985). These conflicting loyalties and responsibilities – which are more pronounced in colleges and universities than in any other organization – lead to decreased potential for coordination, which can significantly affect complex issues such as sustainability. These competing and conflicting cultures have led scholars to analyze campuses from collegial, bureaucratic, political and anarchical perspectives (e.g., Bolman & Deal 1997).

Some authors (e.g., Rothblatt 1995) believe that monetary pressures are beginning to drive colleges and universities into more “business-like management”, which is “hierarchical, bureaucratic, cost conscious”. More directly, colleges and universities are subject to increasing corporate influence (White 2000). However, my perspective is that
colleges and universities might be more open to change based on environmental issues (as opposed to corporations) because stakeholders in academic institutions tend to be more committed to symbolic and cultural values than the short-term, market-based focus in corporations (Dill 1991). Colleges and universities tend to be less focused and controlling, more diffuse and fractured, and offer more individual freedom than other types of organizations. Therefore, organizational models that recognize diversity and complexity tend to describe campuses best. The extreme view of complexity comes from the “organized anarchy” model, while the extreme view of uniformity comes from models that assume that university leaders can “lead” (Green 1997). Colleges and universities tend to lean toward anarchy, but – because of their political and bureaucratic nature – retain some semblance of control. Moreover, societal pressures not only cause disorder by increasing complexity, but also demand order to maintain social reputation. Therefore, colleges and universities function in many different ways, depending upon the social context and construction of the issue and decision makers. This dissertation tests the potential for creating organizational change in higher education based on a particular issue – the environment – which is characterized by uncertainty yet strong potential to motivate stakeholders.

Change Strategies

Colleges and universities are notoriously slow in terms of organizational change, be it cultural, structural or issue-based, as pointed out in Chapter I. “There is no question that universities are among the most conservative of institutions. They have been notably slow to change their curriculum, organization or structure. Traditions of academic governance date back to the Middle Ages, and academics often take these traditions
seriously,” wrote Altbach (1974, p. 2). This slow pace of change is ironic because institutions of higher education employ cutting-edge thinkers in all fields, including, of course, organizational change. However, colleges and universities have strong bureaucratic barriers to change, such as standard operating procedures, inertia, funding and risk aversion (Breyman 1999). Moreover, the previously discussed lack of accountability, loose coupling of organizational systems (“a characteristic that makes large-scale change less likely to occur rapidly or to affect the whole organization in dramatic ways,” wrote Simsek & Louis (1994, p. 1)) and the multiplicity of cultures provide unique challenges to organizational change (Birnbaum 1988). Advocates for a wide variety of social issues often accuse college and university leaders of lacking vision and knowledge, which can stem from their enmeshed status as former faculty members (e.g., Breyman 1999). Generally, the literature of organizational change asserts that changes in colleges and universities tend be based more on circumstances than well-planned strategies.

When change does occur, it often “comes only as a result of careful and usually time consuming deliberations by official committees (Altbach, 1974, p. 1).” In fact, the official committee-based process of organizational change is an academic invention. Change is typically evolutionary, fragmented and collaboration-based, which ensures broad-based support, but long time lags and incremental changes. Chaffee and Jacobson (1997) point out that “brainstorming, seeking input, simplifying, revising, and other elements of strategic planning capitalize on existing elements of collegiate culture.” Fantini (1981, p. 413) concludes:

Educational change, then, can certainly be effected, even in bureaucratic settings. The degree to which change is effected, however, will depend upon the nature of the proposed change as well as upon the nature of the support and whether or not the change becomes fully integrated into educational practices. It will also depend upon how the change is
perceived by all the individuals and groups involved, the authority with which that change agent is vested, the agent's interpersonal skills with all of the people involved in the planning and implementation phases, and the prestige that the organization and participating members receive with respect to the innovation.

Although barriers to change are formidable and the pace of change is usually inadequate from the perspective of change advocates, new challenges presented to colleges and universities are beginning to produce more rapid and revolutionary change. Dolence & Norris (1995) point to information technology, the needs of individual learners and the changing nature of work and learning as driving forces while Rothblatt (1995) emphasizes the need for mass education and global competition, and Green & Hayward (1997) stress funding, access and accountability concerns in addition to technology and globalization. In the past 20 years, colleges and universities have become more responsive to a certain set of social issues, including diversity, smoking, fair wages and apartheid. In fact, institutions of higher education appear to have made major structural changes with regards to these and other social issues, albeit unequally across different institutions and after considerable foot-dragging in response to significant internal and external pressure. However, environmental issues have not yet engendered these changes, as will be discussed later in this chapter.

While the relative strength of forces causing organizational change in academia is debatable, many theorists agree with Peterson (1995, p. 156): “While it is not possible to present a clear picture of the university of the future, it should be apparent that universities are being challenged, perhaps as never before, to respond to legitimate needs of society and other unavoidable changes.” Moreover, colleges and universities do change. As Rothblatt (1995, p 20) wrote, “Over the long run the university has not been stagnant, even when it has unconsciously disguised its metamorphoses by ceremony and
ritual and by eloquent appeals to the past for legitimacy and continuity.” Green & Hayward (1997, p. 25) wrote:

Institutions constantly undergo some combination of planned and unplanned change. The relative importance of various external forces at any moment in time and the roles of the various actors will vary, to produce an unpredictable combination of ingredients and unexpected outcomes. For institutional leaders, the challenge is to shape the future, not simply to let it happen.

As pointed out in Chapter I, reform advocates – such as environmentalists – often call for transformative changes in colleges and universities, which contrasts sharply with the generally accepted notion that institutions of higher education change slowly (Shriberg 2001). For example, many scholars believe that deep cultural changes are a key component in moving toward and assessing campus sustainability. Monteith & Sabbatini (1997, p. 57) point out: “Since sustainability is by definition a long-term view of the environment, to be successfully implemented and maintained, it must become part of the culture of the campus.” While there are no systemic studies on the importance of cultural changes in promoting sustainability, there is general agreement in the literature that these changes are vital. However, Bowers (1997) exposes the “culture of denial” currently in education regarding environmental issues. Bowers claims to study environmental education with a “deep awareness of the complexity and slowness of the process of cultural change, and of the educational establishment’s record of lagging behind when it comes to adopting fundamental changes related to moral and social justice issues (p. viii).” Bowers shows how the basic assumptions of education include anthropocentrism, individualism, secularity, a bias against traditions, and a bias toward technology and science. These “cultural” values are typically antithetical to environmental issues, yet difficult to dislodge. Therefore, a major goal of this dissertation is to provide college and university change agents with a set of guidelines to
enact cultural change and to understand the difficulties in pursuing organizational change specific to environmental issues and sustainability (Shriberg 2001; Shriberg 2002b).

**Contribution of This Study**

The literature on the nature of decision making and change processes at colleges and universities forms the conceptual basis for evaluating the environmentally-oriented strategies and processes discussed throughout this dissertation. The first contribution that my research makes to this field is to further develop an old theme, which has recently received increased attention: that colleges and universities are attentive to social, ethical and environmental responsibility in addition to traditional measures of performance. This theme has received scant attention in the literature, mainly in the form of proclamations or statements about the importance of social responsibility. For example, Pelikan (1992, p. 139) wrote, “Yet the university is, with the church, especially charged with a responsibility not alone for its immediate society but for its larger societies, with all of which it has something of a moral contract.” This research assumes that conceptualizations of colleges and universities in the future will need to recognize the increasingly important and complex role that higher education plays in shaping and responding to societal issues, particularly since issues such as racial diversity have inspired significant changes in academia. This dissertation tests the implications of such a moral contract in relation to environmental issues. This dissertation searches for expressions of this moral contract through mission and goals statements and as translated into practice via specific plans as well as individual and group incentives and evaluations. Therefore, this research continues the theoretical trend away from assuming that colleges and universities are controlled by managers focusing on short-term, pragmatic issues, and into the assumption that decision making is complex, long-term and value-laden.
Second, this dissertation provides explicit tests of the strength of various drivers and rationales for organizational change as they relate to environmental issues. My research develops effective change strategies that are applicable to sustainability advocacy and may be applicable to a wide variety of social issues. Therefore, this dissertation continues the trend in analysis and advocacy of identifying ways around the formidable barriers to organizational change in academia.

**Corporate Environmental Management & Social Responsibility**

“Setting out to ‘achieve’ sustainability is a bit like seeking the elusive state of economic ‘equilibrium’, the nirvana of neoclassical economists: It rarely, if ever, exists — and when it does, only fleetingly,” wrote Spencer-Cooke (1998, p. 103). Becoming a sustainable enterprise or even moving toward sustainability is complex and ambiguous since no business is currently considered “sustainable” and no guidelines exist. Moreover, the concept of sustainability is being redefined and conceptualized (as discussed previously), which makes sustainability planning very difficult. Some authors argue that organizational theory is systematically biased against sustainability in its anthropocentrism, lack of biophysical foundations, reductionism, and shallowness (Shrivastava 1994; Gladwin and Kennelly 1995); therefore, management theory has little to offer in terms of guidance in moving toward sustainability. In any case, sustainability issues are unique because of their moral component, multidisciplinary scope, ever-changing nature and challenge to corporate autonomy (Hoffman 1997). This section explores the challenges, motivations and processes involved in moving corporations toward sustainability, drawing lessons that can be tested through higher education’s sustainability efforts.

The literature on corporate environmental management and corporate social responsibility are closely related, well established and growing, although small in volume compared to other branches of organizational theory or management. They represent the
only coherent bodies of knowledge about creating organizational change for
environmental advancement because educational, nonprofit and governmental
organizations have received little attention in the literature. Therefore, this dissertation
draws from the corporate responsibility literature to generate testable strategies and
rationales that can advance environmental issues at the institutional level. Specifically,
the first subsection frames the concept of “enlightened self-interest” as a strong rationale
for corporate environmental action. The second subsection analyzes short-term rationales
for corporate environmental and social management, including cost savings and
regulatory compliance. The final subsection presents barriers to corporate environmental
progress, including the relatively low priority of environmental issues. Each subsection
concludes with a brief description of how the concepts derived from the study of
corporations will be used to assess higher education’s environmental management
through the theoretical framework outlined at the end of this chapter.

“Enlightened Self-Interest” Rationale

Corporate environmental management and social responsibility theory and
practice are beginning to converge on the importance of “enlightened self-interest” as a
motivator for management of environmental and social issues (Gladwin et al. 1995;
Whitman 1999). Enlightened self-interest involves extending core business strategies by
encouraging long-term thinking about strategic positioning and relationships with social
and ecological systems. Stakeholder concerns about reputation and ethics are moved
from their marginal status within the dominant organizational theory paradigm into a
more central role. My interpretation is that enlightened self-interest implies that
corporations need to maintain themselves over time fiscally, but can and should look
beyond short-term gains into issues of morality, reputation, culture, strategic positioning
and stakeholder engagement. Scholars are beginning to assess these more intangible and
long-term reasons in trying to understand why organizations undertake environmental
(and sustainability) management initiatives.

Local communities are beginning to demand that corporations function based on
ethical environmental principles that include respect for the local environment (Post and
Altman 1994). In fact, the roots of the environmental movement can be traced to
incidents (such as Love Canal) where local citizens have raised environmental concerns
about corporations located in their community. These situations have typically imposed
fiscal and – perhaps more importantly – reputational costs to the corporations involved.
Therefore, the demands and concerns of local communities form an important component
of the “enlightened self-interest” rationale for corporate sustainability.

Many corporate managers are beginning to view proper management of
environmental and interrelated social issues as essential for long-term survival. For
example, in a study by Dillon and Fisher (1992), one manager said, “We want to be here
for the long-term, so we must plan and pay attention to environmental concerns.”
Gladwin (1999, p. 2) claims: “All business – in any form, in any place, at any time – is
directly or indirectly, immediately or eventually affected by ecological and socio-
economic deterioration wherever this occurs.” Several authors (e.g., Waddell 2000) have
argued persuasively that corporations are chartered for more than just narrow gains, and
that there is a contract between society and corporations regarding the common pursuit of
social good. Logsdon & Yuthas (1997, p. 8) point out that “The very concept of
corporate social responsibility presumes an acknowledgment of society's right to grant or
withhold legitimacy depending upon the extent to which the corporation fulfills its
assigned roles within that society.” Moreover, a healthy society is a necessary
prerequisite for long-term corporate survival. Whitman (1999, p. 188) wrote,
“Companies recognize that a socially healthy environment is conducive to long-run
profits, and also that such contributions improve the corporate public image and generate
goodwill among employees, the local community, and public officials.” Thus, one
important aspect of enlightened self-interest is that companies and communities of people and biota are interdependent, and that congruence between business and community as well as social values (which tend to favor environmental protection) is essential.

A second component of the enlightened self-interest rationale is the potential reputational gains from corporate environmental management and social responsibility. “By doing good, managers generate reputational gains that improve a company's ability to attract resources, enhance its performance, and build competitive advantage. Citizenship programs also mitigate the risk of reputational losses that can result from alienating key stakeholders,” wrote Fombrum, Gardberg & Barnett (2000, p. 85). These reputational gains can translate directly into acquisition of the most important organizational resource: employees. Thus, authors such as Turban and Greening (1997, p. 2) note the increased use of environmental and social responsibility in recruitment:

Because a firm's corporate social performance (CSP) is thought to signal certain values and norms, it seems likely that it influences applicants’ perceptions of working conditions in the organization and, therefore, the attractiveness of the organization as an employer.

Moreover, there is increasing evidence that a positive external reputation translates into a positive internal corporate image, which can further motivate stakeholders. After studying the state of corporate sustainability efforts, SustainAbility and United Nations Environment Programme (2001, p. 2) conclude: “Of the ten measures of business success, brand value and reputation is the measure that appears to be most positively linked to corporate sustainable development performance.” However, this link is often stronger in the negative relationship than the positive: firms with poor sustainability performance tend to sustain greater damage to reputation and brand value than those with positive performance gain.
Managers are beginning to consider environmental ethics – a third component of enlightened self-interest – out of necessity because stakeholders are becoming increasingly involved in the environmental ethos of organizations (Fineman 1998). This possibility leads authors such as Hoffman and Ehrenfeld (1998, p. 70) to assert that “firms are finding that as environmental values take hold at the deepest level of societal structures, it becomes increasingly necessary to include those values in their corporate cultures or risk creating value systems that are dissonant with those of their employees.” As reported by Wysburd (1998, p. 309), “Companies recognize that high standards of ethics, of which respect for the environment is one of the most important, are no longer optional extras.” In other words, managers want stakeholders to be proud of their workplace and motivated to make it successful, and thus stress organizational environmental ethics. Post and Altman (1992; 1994) call this type of management “value-driven environmentalism”, which focuses directly on intrinsic motivation as it relates to organizational culture, ethics and image.

A key assumption in this emerging literature on enlightened self-interest is that organizational leaders and others are not guided by short-term profit alone since their personal values cannot be excluded from the workplace (Janis and Mann 1983). Employees not only shape the organizational culture and ethics of their place of employment, but also are shaped by it. Riordan (1997, p. 3), who studied corporate ethics and image at an electric utility, contends: “There is a very personal connection between organizational image and an individual's sense of self.” Therefore, problems occur when an individual’s personal environmental image clashes with the dominant environmental culture in his or her work environment. Shrivastava (1994, p. 722)
concludes: “Long-term organizational legitimacy depends on how organizations handle their ethical responsibilities toward the natural environment. Organizations can build legitimacy by addressing the environmental concerns of primary stakeholders such as customers, investors, suppliers, government, communities and the media.” Simply put, “being an ethical ‘bad guy’ can have far-reaching negative consequences,” wrote Sains (2002). Greeno and Robinson (1992, p. 225-26) take this approach one step further:

Companies are beginning to find that how they manage their environmental affairs can also contribute to how satisfied the stakeholders are with the company overall…Enlightened companies know that just reacting to growing stakeholder demands for environmental assurance is not enough. Instead, companies have to be prepared to take the lead.

Therefore, corporate environmental-leadership is becoming integral to attracting stakeholders who are increasingly concerned with environmental ethics.

While there is agreement in the corporate environmental management and social responsibility literature on the importance of ethics, there is a lack of empirical evidence. The most well known study of organizational ethical fit – conducted by Dutton and Dukerich (1991) – analyzed the Port Authority of New York and New Jersey’s handling of homeless people. Corporate studies have been conducted on a relatively small scale, involving a limited number of case studies or a survey with a small sample size. Therefore, most of the evidence for ethical fit is anecdotal and circumstantial, but is voluminous and consistent. Badaracco Jr. (1995, p. 271) summarizes the state of the field as follows:

While companies must serve shareholders’ interests, neither their executives nor their employees leap from bed in the morning eager to maximize the risk-adjusted present value of their company’s future cash flows. The animating, creative forces of great human institutions originate elsewhere. And the men and women who build and guide enduring,
productive, challenging human communities are engaged in efforts that are not simply financial and administrative but social, political, and moral.

The impact of corporate environmental and social responsibility is “likely to be a long-term one. Day traders will not be looking for companies with a strong sustainability development performance (SustainAbility and United Nations Environment Programme 2001).” However, when the various aspects of enlightened self-interest rationales are combined, the business case for sustainability becomes very strong.

Overall, the literature reveals that motivations related to the broad concept of “enlightened self-interest” appear to be the strongest drivers of corporate social and environmental responsibility. Since colleges and universities do not face the intense quarterly profit pressures of corporations (particularly publicly held firms), these institutions should be more amenable to longer-term social and environmental responsibility initiatives. Internal and external pressures as well as ethical concerns have caused institutions of higher education to alter their perception of and response to social and economic issues such as diversity (e.g., by using affirmative action in admissions decisions) and fair wages (e.g., by terminating contracts to produce with athletic gear with companies that use child or sweatshop labor). No author to date has tested the strength of enlightened self-interest rationales as drivers for environmental management in higher education or whether the emerging concept of sustainability can unlock the potential for environmental advancement. This dissertation begins this process.

**Short-term Rationales**

Despite the emerging literature on enlightened self-interest profiled in the previous subsection, the majority of literature on corporate environmental management
and social responsibility stresses the perceived or actual short-term economic benefits derived from pursuing environmental or sustainability management. In other words, most research follows the standard neo-classical economics model of managerial decision making, which discounts the future heavily and assumes action is generated only through extrinsic motivation. For example, Kiernan (1998) asserts that environmental and financial performance are linked. Porter and van der Linde (1995) claim that environmental management has two possible benefits: 1) economic gains from increasing efficiency by reducing pollution; 2) economic benefits through competitive advantage in reaching the “green market”.

However, the logic of these claims has been hotly contested, most notably by Walley and Whitehead (1994, p. 2): “Environmental costs at most companies are skyrocketing, with little economic payback in sight” and few win-win solutions are left. King and Lenox (2001) conclude that while there is a relationship between financial performance and environmental performance, this relationship is not necessarily causal and might be attributable to a “firm’s stable attributes” and “strategic positioning”, which influence both profits and pollution prevention. Even Hart (1995, p. 998) – a strong corporate sustainability advocate – does not believe that the market supports sustainability in the short-term: “For a firm, pursuing a sustainable development strategy thus implies both substantial investment and a long-term commitment to market development. There is little reason to believe that this investment will result in enhanced short-term profits.” Hussain (1999, p. 204) is even more critical: “The evidence suggests that, in at least some scenarios, increasing profitability and environmental performance are (and will be) mutually exclusive.” With this growing sentiment, resting corporate
social and environmental responsibility appeals on short-term profits appears
disingenuous at best.

One of the earliest (and still pervasive) arguments in favor of environmental
responsibility within corporations is the avoidance of regulation. Government regulation
was one of the first drivers of corporate environmentalism (Hoffman 1997; Frankel
1998). Moreover, firms that commit to environmental improvements are likely to
improve their relations with governmental entities, decrease prospects for litigation and
other risks, and stay ahead of environmental regulations (Shrivastava and Hart 1995).
While these arguments are valid, particularly in resource-intensive industries, they are
outdated since governments lag far behind public consciousness in their regulations.
Therefore, avoiding regulation is perhaps an argument for minimal environmental
management but is not nearly far-reaching enough to be a strong argument for
sustainability management. Recent data from Karagozoglu and Lindell (2000) support
the claim that the regulatory climate does not affect a firm’s environmental performance,
beyond serving as an “obstacle-reducing catalyser”.

The balance of evidence points to the fact that organizations that only respond to
regulatory and short-term cost demands may not be considered an environmental-laggard,
but also will not receive the internal and external recognition associated with being an
environmental-leader. It is debatable whether merely seeing the environment as a short-
term business benefit could lead to long-term or sustained performance by any company
because after initial successes in terms of waste minimization or energy consumption
reduction, for example, further business gains will be more difficult to identify. Studies
attempting to correlate corporate social and environmental responsibility with corporate
performance inevitably suffer from correlation-causation confusion because of the complexity of factors that cause profitability. Few, if any, firms are profitable solely because of their social or environmental responsibility initiatives. Additionally, firms that are more profitable often have the resources to devote to longer-term initiatives, thus creating a measurement problem between cause and effect. Therefore, it is not surprising that many theorists (e.g., Stanwick and Stanwick 1998) begin their analysis by noting that past studies have been inconclusive in terms of social responsibility-profitability relationships. Given that short-term rationales are not strong drivers in corporations and that colleges and universities are not as subject to short-term profit concerns as corporations, it is unlikely that cost-effectiveness and government regulation are strong drivers of campus environmentalism. This dissertation tests this proposition.

Barriers

The corporate environmental management and social responsibility literature outlines important barriers to organizational environmental change, including top management commitment, attitudes of personnel, quality of communication, and past practices (Post and Altman 1994). For example, since CEOs are accountable primarily to the board (and CEO is typically not a long-term position), they have little incentive to pursue social and environmental initiatives without board support (Stanwick and Stanwick 1998). However, the board is not likely to pursue these initiatives, because – as pointed out previously – environmental actions tend to have short-term costs but long-term benefits. Moreover, managers tend to respond to ethical issues only when they believe the issue is possible to resolve, urgent to respond to, and when significant direct harm is probable (Lambert 2000). Environmental issues appear to have none of these characteristics. Therefore, shareholders often view investments in social and
environmental responsibility as risky and unnecessary because the social and economic system is not yet mature enough to recognize environmental and social benefits. Newman and Breeden (1992, p. 211) assert: “Of the many issues associated with corporate social responsibility...the environment is the most recent addition to top management’s agenda. It is arguably the hardest to address, because environmental risks are less personal, less immediate and, therefore, have less apparent urgency.” Therefore, the greatest barrier to environmental progress in corporations appears to be the low priority of environmental issues, which creates or exacerbates the other barriers. The dissertation tests the strength of these barriers in preventing environmental advancement in higher education.

**Transformational Leadership**

This section analyzes the transformational leadership literature, a branch of leadership theory that is growing in influence (Gardner and Cleavenger 1998) and is potentially applicable to management for sustainability in higher education. While leadership theory is well established, and many scholars have studied transformational leaders as change agents, little work exists on applying leadership theory to management for sustainability in corporations, and there is no empirical evidence for the influence of transformational leaders on environmental management in academia. This dissertation begins to fill this research gap by testing the potential effects of transformational leaders on environmental initiatives in higher education. This section forms the basis for this analysis.

Theoretical and empirical work on transformational leadership is perhaps best viewed within the context of organizational learning, which emphasizes the role of individuals in transforming organizations (Post and Altman 1992). Senge (1990) emphasizes tapping into individual strengths and weaknesses, particularly those of leaders, to advance organizational learning. One of Senge’s main elements that
contribute to “learning organizations” is building a shared vision, which implies incorporating views of all individuals involved in an organization. The ability to “celebrate mistakes” is another important attribute for organizations attempting to learn and change (Banerjee 1998). Individuals need the latitude to pursue alternative directions with the understanding that making a mistake will not mean the end of their employment. Generally, giving more power to individual decision makers in organizations may allow personal environmental ethics to creep into organizational strategic planning and structure, which the corporate social responsibility literature points to as a key driver for action. While personal ethics at the individual stakeholder level is an important factor in environmental management, the ethical motivations of leaders – particularly transformational leaders – appears to be even more important in motivating organizational change, as discussed throughout this dissertation.

Transformational leaders orient organizational systems toward a higher ethical purpose (Bass and Steidlmeier 1999). Transformational leaders attempt to achieve value congruence and mutual respect between themselves and “followers” as well as other stakeholders. The defining characteristic of transformational leadership is the ability to inspire followers to work together toward higher goals at a high level of motivation. As stated by Deluga (1988, p. 457): “The transformational manager cultivates employee acceptance of the work group mission.” Using strong personal influence, transformational leaders inspire followers to meet “higher” needs through their organization (Conger 1999). The transformational leader inspires commitment not only to the organization, but also to personal fulfillment through participation in organizational processes. Therefore, transformational leaders focus themselves and all stakeholders on long-term, shared personal and organizational ethical commitments and visions in addition to short-term profits. As stated by Behling and McFillen (1996, p. 163), transformational leadership means that “the actions of single managers appear to create extraordinarily high levels of employee commitment, effort, and willingness to take risks
in support of the organization or its mission.” The transformational leadership literature views leadership as a “dynamic and interactive process, whereby leaders inspire and energize followers” (Gardner and Cleavenger 1998, p. 3).

Transformational leaders are likely to arise and succeed only under certain contextual influences and in a certain set of organizations. For example, organizations with a preexisting ethical orientation of key decision makers and leaders encourage transformational leadership (Carlson and Perrewe 1995). Moreover, organizations with a strong set of managers who are ethical and show openness to change encourage transformational leadership (Carlson and Perrewe 1995; Pawar and Eastman 1997). While a transformational leader can inspire individuals at all levels of an organization, support at the top level is essential for communicating an organizational vision and value set. In addition, to be conductive to transformational leadership, an organization needs to be in a stage where it is focused more on adaptation and changing due to external circumstances than on increasing efficiency (Pawar and Eastman 1997). Organizations that are collaborative in decision making structure and have boundary spanning departments – as opposed to more bureaucratic structures – are more conducive to transformational leadership (Yukl 1999). Moreover, transformational leaders are more likely to become established in an organization with a preexisting policy on ethics that has been communicated to all stakeholders (Carlson and Perrewe 1995). However, even if their organizations lack these organizational and contextual influences, transformational leaders can transform or adapt their organizations to be more conducive to their leadership styles, albeit with difficulty. Therefore, these conditions are not immutable, but provide a supportive atmosphere for the presence of transformational leadership.

To be considered transformational, a leader must establish, communicate and dramatize a clear vision (Behling and McFillen 1996). This vision needs a strong ethical component that is motivating to individuals at all levels within the organization. As
Ackoff (1999, p. 22) wrote, “A transformational leader, therefore, is one who can formulate or facilitate the formulation of an inspiring vision of something to be sought even if it is unattainable.” Organizational members – particularly employees – need to be involved in establishing and meeting the vision in order to create a sense of shared purpose (Carlson and Perrewe 1995). Transformational leaders must be “charismatic”, defined as “the leader’s ability to generate great symbolic power with which the employees want to identify” (Deluga 1988). Transformational leaders are self-confident, have a strong need for change (Ross and Offerman 1997), and operate from “deeply held personal value systems” (Carlson and Perrewe 1995). Transformational leaders embody the changes and values that they are attempting to inspire. Transformational leaders are ethical and intelligent, and thus help followers to generate collaborative, creative solutions and question underlying assumptions.

Transformational leaders pay close attention to individual concerns and aspirations, and provide mentoring, coaching and growth opportunities (Bass and Steidlmeier 1999). These leaders intellectually stimulate stakeholders by approaching “old and familiar problems in new ways” (Deluga 1988). Transformational leaders follow through on individual and organizational commitments, which establishes trust and respectability (Gardner and Cleavenger 1998). “Transformational leaders set examples to be emulated by their followers,” wrote Bass & Steidlmeier (1999, p. 182). With the high level of respect given to the transformational leader and the organization, intrinsic motivation for even seemingly mundane tasks is increased due to the sense of “higher purpose” and the feeling that these tasks are “more heroic, morally correct, and meaningful” (Conger 1999; Fuller et al. 1999). Therefore, followers feel trust, admiration, inspiration, empowerment, and loyalty to the individual and the organization due to a “deep collective identity among followers” (Behling and McFillen 1996; Conger 1999).
Measuring the effect of transformational leadership is difficult. The major scale to measure the presence of transformational leadership – the Multifactor Leadership Questionnaire (MLQ) – is based on three factors: charisma, intellectual stimulation and individualized consideration (Conger 1999). This scale has been controversial; authors such as Carless (1998) and Tracey & Hinkin (1998) assert that the MLQ measures only one concept instead of the purported three factors. Yukl (1999) argues that the MLQ leaves out important behaviors such as delegating, consulting and interaction between leaders and peers, supervisors and outsiders. Podsakoff et al. (1996) developed an alternative approach to measuring transformational leadership called the Transformational Leadership Behavior Inventory (TLI). This scale is a simplified version of the MLQ and focuses on six key dimensions of transformational leadership.\textsuperscript{ii}

Generally, the presence of transformational leadership has been positively correlated with job satisfaction (Medley and Larochelle 1995; Ross and Offerman 1997), work group performance (Ross and Offerman 1997), employee retention, perceived effort, organizational citizenship behaviors (Fuller et al. 1999), employee influencing strategies (Deluga 1988), psychological empowerment (Fuller et al. 1999) and other positive organizational attributes (Podsakoff et al. 1996).

Many critiques have been leveled at the concept and practice of transformational leadership. The most poignant critique is that the cult-like attitude promoted by transformational leaders can be manipulative to followers (Conger and Kanungo 1998). Minimizing personal goals for the good of the organization and the transformational leader may not be in the self-interest of employees and other stakeholders, particularly if the organizational initiatives fail or the leader moves on (Bass and Steidlmeier 1999). In other words, caring too much about the organization and the leader and not enough about

\textsuperscript{ii} Because of its relative simplicity, availability and validity, I adapted and used the TLI for this research, as explained in Chapter III.
one’s own advancement can be detrimental over the long-term (Yukl 1999). In addition, attempting to align values among stakeholders may be unethical by rejecting views that are not in agreement with transformational leaders. Moreover, transformational leaders may override the system of checks and balances inherent in any organization. Decisions that would be questioned if made by less charismatic and influential leaders are unquestioned when a transformational leader is at the helm (Gardner and Cleavenger 1998), which can have negative impacts over the long-term. In addition, transformational leaders are largely a product of larger cultural and ethnic processes, and their influence may not cross cultural or national boundaries, even within a single organization (Conger 1999). Finally, the promoting of transformational leadership might perpetuate the “heroic leadership” stereotype, which does not recognize the contributions of subordinates or other stakeholders (Yukl 1999).

A transformational leader is best conceived as an “ideal type” of leader (Bass and Steidlmeier 1999). All leaders are likely to exhibit some aspects of transformational leadership, but no leader is likely to perfectly match this ideal. Leadership is often situational, and transformational leadership characteristics can emerge (or disappear) during a wide range of circumstances. However, the power of the concept of transformational leadership is evident in the upsurge in research in this area over the past 20 years. In fact, transformational leadership has become a synonym for leadership theory more generally in recent times (Hunt 1999). Increased competition and the need for employee commitment are partially responsible for this increase in volume of research on and respect for transformational leadership (Conger 1999), and it is becoming clear that transformational leadership is a key part of organizational change.

While there has been little empirical work on how transformational leaders influence environmental decision making within organizations, there is growing anecdotal evidence that environmental management or changes in organizational approaches to the environment come from the personal influence of corporate leaders.
Since transformational leadership is one of the “important mechanisms that effects organizational change” (Pawar and Eastman 1997, p. 82) and is strongly related to organizational ethics (Carlson and Perrewe 1995) as well as long-term commitment (Bass and Avolio 1994; Carlson and Perrewe 1995), this relationship is not particularly surprising. Yet, the study of this relationship could be revealing in terms of understanding and promoting consideration of environmental issues within an organizational context.

Dillon and Fischer (1992) wrote, “In its response to the various forces, the leadership becomes an internal motivator for environmental behavior.” Post and Altman (1992) cite an example of a new CEO’s “interest in the greening issue” as the primary factor in changing a large international services company’s method of managing environmental issues. In this case, a change in leadership led to new policy and steering committees that emphasized environmental issues. Portugal and Yukl (1994) point to the need for effective leadership to cope with environmental (and other social) problems. The authors characterize environmental-leadership as a process of individual and organizational influence combined with internal and external influence relationships. Moreover, they claim that these leaders can appeal to “logic, values and higher-order needs” in order to encourage individuals in the organization to care about environmental issues within the organization. In Portugal and Yukl’s opinion, environmental leaders need to influence peers and outsiders as well as subordinates to promote environmental issues. Finally, Gladwin (1999, p. 4) observes: “I am strongly encouraged by the emergence of a well-informed and visionary set of corporate leaders who have taken up the challenge of orienting their companies to support a sustainable human future.”

Overall, the concept of transformational leadership is gaining influence in the leadership literature as a way to explain how personal characteristics and style can lead to organizational changes. This concept is starting to be applied to corporate environmentalism because it embodies the ethical orientation, motivation of stakeholders
and interest in the broader community that often characterize strong corporate environmental responsibility initiatives. To date, the concept of transformational leadership has not been applied to environmental management in higher education in a direct fashion. However, the concept might explain the strong impact of leadership on environmental issues in academia. Moreover, transformational leaders have the potential to create the systemic changes in operations, teaching, research and service required to move a college or university toward sustainability. Therefore, this dissertation studies the influence of transformational leaders on sustainability in higher education. This study’s goal is to provide initial evidence for the effects of transformational leaders, and provide direction for future studies.

**Sustainability in Higher Education**

The relatively new management for sustainability in higher education field suffers from a lack of empirical data and academic case studies. The literature contains some theoretical work, practical advice and “stories of transformation”, but little or no cross-initiative data, empirical testing or rigorous theoretical development (e.g., Eagan and Orr 1992; Smith and The Student Environmental Action Coalition 1993; Keniry 1995; Creighton 1998; Eagan and Keniry 1998). In the most recent significant addition to the field (Filho 1999), authors list priorities for sustainability in higher education, misconceptions about and constraints on pursuing management for sustainability, ways to move forward in promoting initiatives, and critical dimensions of the field. Many stories are presented, but a systematic assessment of organizational factors and decision making processes for initiating and maintaining changes is lacking. Cortese (1992; 1999a; 1999b) – a major contributor to field – focuses largely on defining sustainability, establishing the power and responsibility of colleges and universities to lead change efforts, and identifying constraints to organizational changes and integrating sustainability into curricula. Generally, the literature on sustainability in higher
education contains many calls for advocacy and stories, but lacks a coordinated approach to assessing campus initiatives and providing well-grounded strategies for success.

This section assesses the literature on sustainability in higher education, pulling together disparate elements and findings in an attempt to create a more integrated theory of campus sustainability. The first subsection identifies and develops a definition of a sustainable campus. The next subsections assess rationales, drivers, and processes and frameworks (respectively) for moving toward campus sustainability. The fifth subsection analyzes the relative strength of barriers to campus sustainability while the sixth subsection assesses current tools to measure progress toward campus sustainability. The final subsection summarizes the state of knowledge and progress on campus sustainability and outlines the contributions of this dissertation. The main contribution of this research is to establish a theoretical and – to a lesser degree – empirical framework about the motivations, processes and outcomes of sustainability in higher education. There are no other attempts at such a coherent, systemic study of environmental and interrelated social issues in U.S. institutions of higher education, and thus I expect this contribution to be large and spur subsequent research.

**Defining a Sustainable Campus**

The Pennsylvania State University sustainability indicators report (Penn State Green Destiny Council 2000) provides perhaps the best definition of a sustainable college or university because it mixes vision and goals:

1) A university whose long term prospect for continuing to exist is good; specifically such a university behaves in ways that sustains the integrity and biodiversity of the local and planetary ecosystems upon which all life depends.
2) A university whose core values include: respect for the biota and natural processes, mindfulness of place, living within planetary limits, accounting for full costs, and civic responsibility.
3) The kind of university that PENN STATE is striving to become.
Other definitions of a sustainable college or university or a “sustainity” (as coined by van Weenen 2000) are rapidly being produced in this relatively new line of inquiry. The common thread in this research – which is largely a byproduct of advocacy efforts as opposed to a rigorous theoretical exercise – is that sustainable colleges or universities use the concept of sustainability as a core philosophical and operational guiding principle.

Summarizing the cases contained in the sustainability in higher education literature leads me to conclude that a necessary condition for identification as a sustainable college or university is explicit recognition of the institution’s central role in the degradation or support of the ecological, cultural and economic fiber of our planet and our species. A sustainable institution explicitly acknowledges its contribution to unsustainability and sustainability, through official statements, audits or other media, to “clear the path” and set a baseline for a more sustainable future. Sustainable colleges or universities explicitly set the goal of long-term institutional integration with healthy human and biotic communities. Sustainable institutions recognize the interdependence of their institution with larger human and non-human systems in written documents as well as through ecological and social audits. Simply put, case studies of “best practices” reveal that sustainable colleges or universities strive to do no harm and some good by integrating sustainability concerns into and across their core functions of teaching, research and service as well as in their operations.

In terms of teaching, as suggested by Orr (1992a) and others, graduates of a sustainable institution are “ecologically literate”, which includes the ability to apply systems thinking (in a cross-disciplinary manner) and to recognize and challenge the dominant paradigm. Ecologically literate students are produced through integration of
sustainability into curricula and through practical applications of sustainability concepts. In terms of research, sustainable colleges or universities not only focus their efforts specifically on research directly related to sustainability (Uhl et al. 1996), but also assess the sustainability implications of all research activities. In terms of service, sustainable colleges or universities help local, national and international communities in ensuring a healthy ecological, social and economic future. In terms of operations, sustainable colleges or universities reflect the core values of sustainability through design by and for the environment (i.e., imitating the natural world) in all their operating systems. A sustainable college or university’s operations do not negatively affect ecosystems or human communities, and are models for other institutions. Of course, the literature and my experiences do not reveal any college or university which meets all of these criteria for being “sustainable”, but this dissertation uses and operationalizes this broad conceptual framework to measure closeness to this “ideal sustainable institution”.

Rationales

The goal of a sustainable college or university outlined above is extremely difficult to achieve. Thus, the relevant and appropriate question that college and university decision makers ask is: Why should we try to become sustainable? Many theorists and practitioners have addressed this question in the past decade. Perhaps the most basic answer – which parallels the corporate social responsibility literature – comes from Creighton (1998, p. 6): “Since universities are generally long-lived institutions, they should be concerned with the long-term health and livability of their community and region.” Breyman (1999, p. 87) offers a more altruistic basic answer: “U’s have the resources, vision, opportunity and responsibility to lead themselves and their societies
towards sustainability, one step at a time.” Most rationales for pursuing sustainability rely upon the fact that education is the largest industry in the world, and thus has vast power, potential and obligations. I have synthesized the strongest reasons for becoming a sustainable college or university – which come from activism-oriented articles and case studies – in the following five points:

1) **Expertise/Ability:** Campus sustainability advocates argue that colleges and universities have the expertise, leverage and resources to make significant progress on sustainability. These institutions face less fiscal pressure than other large institutions and have the ability (many advocates would say the responsibility) to act on vision. Thus, colleges and universities should lead society to sustainability not only because they are the best institutions for the job, but also because they are the only institutions with the ability to lead. “Universities bear profound responsibilities to increase the awareness, knowledge, technology and tools to create an environmentally sustainable future. Universities have all the expertise necessary to develop the intellectual and conceptual framework to achieve this goal,” wrote Cortese (1992).

2) **Social/Ethical obligation:** The higher education literature establishes that colleges and universities occupy a special place and receive special benefits in society. Campus sustainability advocates use this beneficial position as a lever to assert that colleges and university are obligated to address sustainability. Kamba (1991, p. 43) wrote: “The justification for our existence as universities is that we must make a difference to the human condition, to the social and economic conditions of humankind.” Moving toward sustainability would make this difference. Cortese (1999a, p. 8) added: “Society has conveyed a special charter on institutions of higher education. Within the United States,
higher education institutions are allowed academic freedom and a tax-free status to receive public and private resources in exchange for their contribution to the health and well-being of society through the creation and dissemination of knowledge and values.”

In other words, advocates assert that colleges and universities owe it to society to move toward sustainability. This moral and social obligation is reflected in statements and declarations on sustainability. “Perhaps the unifying theme among all declarations and policies is the ethical and moral responsibility of universities to be leaders in promoting sustainability,” wrote Wright (2001, p. 22).

3) **Models:** Advocates point to the proliferation of courses and students interested in the environment as well as the role that colleges and universities play as “trendsetters” in society to argue that institutions of higher education have unique roles as models of sustainability. They also point out that institutions of higher education have not been adequately modeling and teaching sustainable behavior to date. Van Ginkel (1996, p. 15) claims:

> Universities have too often arrogantly ignored urgent issues such as global climatological and environmental problems and development issues. In the social context, universities, rather than setting the tone of public debate, tend to stay isolated in their ‘ivory tower’. This lack of involvement not only underlines both their failure to create and pursue a public mission and their relatively poor leadership qualities, it also endangers the very ‘raison d’etre’ of universities as public institutions.

Advocates assert that colleges and universities (whether they recognize it or not) are models for their students and the rest of the country and, as such, need to demonstrate sustainability in their functions. For example, colleges and universities establish the teaching framework for lower educational levels. A conference organized by the President’s Council on Sustainable Development (1995) concluded: “By using the
campus as a laboratory, students learn to analyze complex multidisciplinary problems, develop real solutions and focus on their institution’s and their own behavior.” Uhl and Anderson (2001, p. 36) concur:

Even as universities teach their students that the vital signs of the Earth are in decline, graduates leave college to begin lives that generally contribute to, rather than mitigate, a growing array of environmental and social problems.

Overall, advocates assert that colleges and universities can and should be motivated to pursue sustainability based on their role as social models.

4) Problem-causers: Sustainability advocates and theorists assert that the current societal paradigm – which emphasizes the human-nature split as part of its reductionist paradigm – is largely created and reinforced by higher education in two ways. First and most importantly, colleges and universities graduate students lacking ecological knowledge and the ability to think or act in a sustainable manner. As institutions whose main products are “educated minds”, they point out that this failure is a major shortcoming. As Orr (1994, p. 2) wrote:

It is a failure to educate people to think broadly, to perceive systems and patterns, and to live as whole persons...Yet we continue to educate the young for the most part as if there were no planetary emergency. It is widely assumed that environmental problems will be solved by technology of one sort or another.... Ultimately, then, the ecological crisis concerns how we think and the institutions that purport to shape and refine the capacity to think.

Second, advocates assert that colleges and universities are not just isolated “ivory towers”; they have vast direct and indirect environmental impacts. As Strauss (1996, p. 35) wrote:

Colleges and universities are large institutions with complex power structures and significant ecological, social and economic impacts. They are very much part of the ‘real world’, even though many students deny
this in their everyday speech. As such, colleges set examples of institutional behavior and have the potential to show that organizations can make environmental protection a priority in their operations. More than this, schools can serve as laboratories where students learn to put ideas about sustainability into action.

Colleges and universities had largely evaded the scrutiny of U.S. regulatory agencies until quite recently, but now agencies such as the Environmental Protection Agency (EPA) are levying fines and beginning to encourage strict compliance (USEPA 2001). The EPA reported that “University, Colleges Not Receiving Top Marks for Environmental Compliance” and that “during past inspections of university and college campuses across the region, EPA regions have found significant compliance problems” (USEPA Office of Regulatory Enforcement 2000). Publicity about this crackdown on higher education has been widespread including a front-page article in the Wall Street Journal entitled “Poison Ivy League? Some Universities are Real Dumps” which chronicles fines levied on major institutions of up to $1,800,000 (Fialka 2000): “But major universities, which currently collect $462 million a year from the EPA for environmental research and advice, still seem to be having trouble waking up to their own pollution problems.” This negative publicity has helped drive cleanup and compliance at colleges and universities across the country.

5) Image Benefits: Less well developed but emerging in the advocacy literature is the notion that colleges and universities can achieve large reputational benefits by adopting sustainability as a core principle, similar to the corporate benefits described in previous sections of this chapter. While my research reveals that arguments pertaining to direct

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iii In countries other than the U.S., such as Germany, strict environmental laws are far more important drivers of campus environmental initiatives (Noeke 2000)
financial benefits accruing to institutions pursuing environmental initiatives such as energy conservation and recycling are not typically convincing, the possibility of image benefits with stakeholders such as students has great potential (although it has not yet been rigorously tested). Creighton (1998, p. 6) claimed, “Environmental efforts can be a selling point for the university, both within its community and with prospective students.” Cortese (1999b, p. 3) concurs: “There is a growing student demand at colleges and universities in the United States and internationally for environmental education and for institutions to reduce the environmental impact of their own operations.” With the growing competition among colleges and universities (as noted by Rothblatt (1995) and others), sustainability could become an essential selling point to students and other stakeholders in the near future. Moreover, with the growing emphasis on action-based learning, sustainability can be a theme around which colleges and universities can develop new, innovative and attractive (and thus reputation-building) courses and curricula. Finally, institutions of higher education are highly sensitive to environmental programs in peer institutions, and thus strive to maintain a positive image by emulating these programs, as shown by Lounsbury (2000) in his analysis of campus recycling programs.

While the literature asserts (anecdotally) that the above rationales have varying degrees of power in providing a rationale for campus environmental action, there has been little testing of the relative strength of these incentives. Therefore, this dissertation breaks new ground by assessing the value of the rationales outlined in the advocacy literature, many of which are contained in the corporate “enlightened self-interest” rationale profiled previously.
Drivers

Each campus sustainability initiative arises from a unique combination of circumstances, interests and opportunities. However, the case study literature on sustainability in higher education reveals that several stakeholder groups are particularly active and effective as change agents. For example, students often provide the activism behind campus environmentalism, particularly on operational initiatives such as recycling and environmental auditing (e.g., Smith and The Student Environmental Action Coalition 1993). Lounsbury (2000) found that full-time, committed staff recycling coordinators emerged only when student activism drove these efforts. In fact, most new full-time recycling coordinators are former student environmental leaders. However, student environmental interest ebbs and flows, and the relatively short time that most students spend at an institution often negatively impacts the effectiveness and continuity of efforts. Therefore, students often provide an initial spark or focus attention on certain issues, but do not typically have the power and time to institutionalize these initiatives. This dissertation tests this assertion through case studies and a survey.

The campus sustainability literature is remarkably consistent in outlining the need for at least one charismatic individual to be an environmental leader in order to have a successful environmental program. For example, Clugston and Calder (1999) believe that campuses require environmental “champions”, who can be faculty or staff members, but must be able to garner “critical resources” and provide incentives for participation by others. Walton et al. (2000) found that “enthusiastic individuals” or an “active environmental champion” is the key to success in implementing environmental initiatives. For many of these individuals, campus environmentalism is a way to bring personal ethics and concerns into the workplace (Noeke 2000), as discussed in the section
on corporate environmentalism. Lounsbury (2000) found that campus recycling relies upon a coordinator who “passionately embraced recycling as an inherently meaningful activity”. Clearly, individuals can have major impacts on even the largest of campuses if their level of commitment is high. This concept of environmental “champions” on campus is similar to the concept of transformational leadership addressed in the previous section, but is more focused on a specific issue as opposed to general institutional transformation.

While enthusiastic individuals at all levels of a college or university are important in providing leadership on environmental issues, there is remarkable convergence in the literature on the importance of top level support to ensure environmental advancement. Clugston and Calder (1999) characterize this requirement as “endorsement of key administrative leaders”, while Walton (2000) claims that “senior level support is essential”. “Top level involvement and leadership are essential to achieving excellence in campus greening…Green campus initiatives will thrive when members of your community know that your president is interested, on board, and involved,” wrote Simpson (1996, p. 41), the energy manager at the University of Buffalo and a leader in the campus environmental movement. While the support of top leaders is important in any campus initiative, this support is especially important when dealing with a complex, trans-boundary issue such as the environment and sustainability. The President's Council on Sustainable Development (1995) reports: “Moving society on a sustainable path will require major changes in the process and content of higher education. Leadership must be provided by university presidents, provosts and deans – i.e., those who are capable of converging all the academic disciplines and professional schools on large, complex
issues.” Of course, the literature asserts that environmental change agents have the best chance of success when the senior leadership includes a passionate environmental “champion”, but at least some level of leadership commitment is a requirement to make significant progress.

Combining the findings in the campus environmentalism literature with the higher education and transformational leadership literature reveals that the strongest campus sustainability initiatives have support from individuals at lower levels in the organizational hierarchy (e.g., students and staff) as well as institutional leaders (e.g., the president), and at least one charismatic environmental “champion”. Chernushenko (1996, p. 4) summarizes the driving forces as follows:

A good structure for campus environmental management takes a simultaneous top-down and bottom-up approach. First, support for this significant shift to sustainable practices must come from the top. Not only must the most senior people be interested in the cause, they must be seen to be so. They must be ‘champions’ of the cause, showing vision and leadership… Second, people throughout the organization must be a part of such an initiative. They need to believe that they have an equal stake in achieving better environmental management and that they will share in the benefits. This requires that all members of the organization be involved in the development, implementation, monitoring and enforcement of the initiative.

According to this framework, leadership commitment, stakeholder pressure and a collaborative approach to decision making are major drivers of campus environmentalism. However, the campus sustainability literature provides only anecdotal evidence for this situation, and does not provide clear guidance on effective organizational change strategies. Therefore, a major contribution of this dissertation is to assess the relative strengths of the various drivers and derive a more in-depth and systematic understanding of organizational factors that affect environmental organizational change.
Processes and Frameworks

The sustainability in higher education literature contains many bold visions. For example, Orr (2000, p. 340) wrote: “I propose that every school, college, and university stand up and be counted on the issue of climatic change by beginning now to develop plans to reduce and eventually eliminate or offset the emission of heat-trapping gases by the year 2020.” Other scholars, practitioners and activists repeatedly call for institutions of higher education to be on the leading edge of the social transformation toward sustainability. However, the literature provides little guidance to colleges or universities attempting to pursue sustainability. “Even though the literature provides some excellent case studies of environmental initiatives that have been implemented throughout the world, most of the information available is in the form of examples of ‘this is what we did on our campus’,“ wrote Herremans & Allwright (2000, p. 169). This subsection combines these weakly-grounded anecdotes to outline the steps for change agents to follow to begin the process of moving toward sustainability. Therefore, this subsection represents my summary of the current state of prescriptive knowledge about the processes and frameworks for becoming a sustainable campus, which has not been tested empirically.

The first critical step, as advocated by almost all campus environmentalism theorists and practitioners, is to conduct a sustainability audit (e.g., Smith and The Student Environmental Action Coalition 1993). This audit should be broad in scope, including such items as mission statements, sustainability education, endowment spending and other parameters that go far beyond traditional environmental audits (e.g., Penn State Green Destiny Council 2000). The audit (ideally conducted annually) not only provides a baseline for goal-setting and action, but also translates sustainability
issues into language that college or university decision makers can understand. Without such a tangible reflection on current and past practices as well as future directions, sustainability issues have little chance of reaching the agenda of institutional officials.

The audit can also serve as a vehicle to celebrate and publicize past accomplishments and commitments to future improvements. Glasser et al. (2001) compiled over 400 campus sustainability audits into a searchable database, which demonstrates the prevalence and power of this approach.

Building from an audit, sustainability advocates should create and seek consensus on documentation that orients toward sustainability (Shriberg 1999; Shriberg 2000; Shriberg 2002b). Change agents can create their own documentation or turn to one or more of the declarations that call for sustainability in higher education. The earliest two frameworks – the Stockholm Declaration (1972) and the Tbilisi Declaration (1977) – have rarely been used by colleges and universities, but did establish a need for environmental education through institutions of higher education (Wright 2001). The Talloires Declaration (Table 2.1) – which forms the institutional sample for the survey in this dissertation and is the most influential and broad sustainability framework – was created at a meeting of college and university presidents in France in 1990. It has received over 300 college or university presidential signatures worldwide (Clugston and Calder 1999). Other declarations include the Kyoto Declaration (1990) (which calls for a clearer vision on sustainability in higher education, largely in Japan), the Halifax Declaration (1991) (which focuses on Canadian institutions), the Swansea Declaration (1993) (which is similar to the Talloires Declaration), and CRE Copernicus Charter (1993) (which is applicable to European campuses) and the Thessaloniki Declaration.
### Table 2.1: The Talloires Declaration

We, the presidents, rectors, and vice chancellors of universities from all regions of the world are deeply concerned about the unprecedented scale and speed of environmental pollution and degradation, and the depletion of natural resources.

Local, regional, and global air and water pollution; accumulation and distribution of toxic wastes; destruction and depletion of forests, soil, and water; depletion of the ozone layer and emission of "green house" gases threaten the survival of humans and thousands of other living species, the integrity of the earth and its biodiversity, the security of nations, and the heritage of future generations. These environmental changes are caused by inequitable and unsustainable production and consumption patterns that aggravate poverty in many regions of the world.

We believe that urgent actions are needed to address these fundamental problems and reverse the trends. Stabilization of human population, adoption of environmentally sound industrial and agricultural technologies, reforestation, and ecological restoration are crucial elements in creating an equitable and sustainable future for all humankind in harmony with nature.

Universities have a major role in the education, research, policy formation, and information exchange necessary to make these goals possible. Thus, university leaders must initiate and support mobilization of internal and external resources so that their institutions respond to this urgent challenge. We, therefore, agree to take the following actions:

1. Use every opportunity to raise public, government, industry, foundation, and university awareness by openly addressing the urgent need to move toward an environmentally sustainable future.
2. Encourage all universities to engage in education, research, policy formation, and information exchange on population, environment, and development to move toward global sustainability.
3. Establish programs to produce expertise in environmental management, sustainable economic development, population, and related fields to ensure that all university graduates are environmentally literate, and have the awareness and understanding to be ecologically responsible citizens.
4. Create programs to develop the capability of university faculty to teach environmental literacy to all undergraduate, graduate, and professional students.
5. Set an example of environmental responsibility by establishing institutional ecology policies and practices of resource conservation, recycling, waste reduction, and environmentally sound operations.
6. Encourage involvement of government, foundations, and industry in supporting interdisciplinary research, education, policy formation, and information exchange in environmentally sustainable development. Expand work with community and nongovernmental organizations to assist in finding solutions to environmental problems.
7. Convene university faculty and administrators with environmental practitioners to develop curricula, research initiatives, operations systems, and outreach activities to support an environmentally sustainable future.
8. Establish partnerships with primary and secondary schools to help develop the capacity for interdisciplinary teaching about population, environment, and sustainable development.
9. Work with national and international organizations to promote a worldwide university effort toward a sustainable future.
10. Establish a Secretariat and a steering committee to continue this momentum, and to inform and support each other's efforts in carrying out this declaration.
(1997) (which focuses on poverty and equity) (Wright 2001). Currently, there is a movement for colleges and universities to become signatories to the “Earth Charter” prior to the 2002 Earth Summit in Johannesburg, South Africa.

This dissertation studies the power of signing declarations – particularly the Talloires Declaration – as an advocacy strategy to motivate and guide progress toward sustainability in higher education. In a study of Halifax Declaration signatories in Canada, Wright (2001) found that “the majority of signatory universities have made no attempt to implement the declaration within their institution.” Walton (2000) views declarations of sustainability in higher education as largely ineffective in motivating significant organizational changes in the absence of monitoring and enforcement mechanisms (which do not currently exist). Walton (2000, p. 149) conducted a small-scale survey of Talloires Declaration signatoriesiv and reported: “The Talloires Declaration was often found not to be the sole stimulus for action on environmental progress…The Declaration provides a value awareness raising mechanism both for the senior management of individual institutions and to galvanize the global Higher Education Institution sector as a whole.” Moreover, Walton found that “general awareness of the Declaration was often low in many institutions”, that “at some signatory institutions agreements are signed and forgotten” (Walton 2000), and that “the Talloires Declaration is not a crucial stimulus” (Walton et al. 2000).

Clugston and Calder (1999) report a similar finding: “Undoubtedly, signing the Talloires Declaration for some institutions constituted a symbolic act in the moment. For

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iv This survey included 21 institutions (3 in the U.S.), and obtained data through qualitative surveying at conferences, benchmarked against a single institution in the U.K. (Walton et al. 2000).
others, however, the document continues to be an impetus and framework for steady progress toward sustainability.” Wright (2001) agrees: “Analysis of these policies suggests that being a signatory to a national or international agreement is not a valid indicator of an institution’s commitment to sustainability.” Therefore, the main finding in the literature is that signing declarations is not a particularly strong organizational change strategy. However, this study reveals that declarations have been effective in certain institutions to spur action, as will be discussed in Chapter V.

In colleges and universities, as in all other types of organizations, a mandate that does not hold a specific entity accountable is often an empty promise. Therefore, the advocacy literature asserts that creating responsibility for sustainability oversight to fulfill the goals and obligations outlined in audits, declarations or policies is a necessary step toward institutionalization of sustainability (Allen 1999; Clugston and Calder 1999). This responsibility is most effective when there is an individual with responsibility for sustainability coordination as well as a sustainability committee. “Empowerment is crucial to the success of this kind of group,” wrote Simpson (1996, p. 40). Moreover, the literature converges on the importance of specific institutional policies and procedures (Wright 2001). For example, Walton et al. (2000, p. 524) report:

Where there is no micro institutional framework in terms of university policy and strategy within which internal support and guidance can be provided, and hence no institutional justification for resources, then initiatives work on a small scale for a temporary length of time and actions of enthusiastic individuals are not embedded into institutional strategy, policy, or management systems.

In other words, institutionalization of environmental policy, strategy and procedures is a key step in the organizational change process.
While the advocacy literature asserts that the above steps can help start incremental change toward sustainability in colleges or universities, more in-depth analyses of organizational change recognize that the revolutionary steps that are often called for by advocates can only come about through a much deeper process of organizational cultural change. Knowledge of organizational culture is extremely important in moving toward and assessing sustainability, as Monteith & Sabbatini (1997, p. 57) point out: “Since sustainability is by definition a long term view of the environment, to be successfully implemented and maintained, it must become part of the culture of the campus.” Bowers (1997, p. 230-231) concurs:

A second change that needs to be initiated by leadership at the higher levels of the university is the resetting of the university's intellectual and moral compass. Because only a few university presidents and academic deans have made the cultural dimensions of the ecological crisis central to their way of articulating the mission of the university, environmentally oriented courses and faculty now have only a peripheral and not fully respectable standing within the various disciplines (with the exception of certain fields of science).

However, culture is often difficult to detect, let alone change, as pointed out by Chesler and Crowfoot (1990, p. 212): “The culture of the university is often unstated and unseen, operating as part of the givens or general assumptions by which we go about our daily business. Only when open challenges are made, or when different cultures come into contact with one another, do we readily understand and articulate the domains of the dominant culture.” From this perspective, the challenge to potential change agents is to alter the dominant culture through challenges that bring to the forefront the anti-sustainability bias in current cultures, a daunting challenge to say the least, but necessary for systemic institutional change. In general, while the process of moving toward
sustainability is different at each college or university, this dissertation identifies and analyzes some critical, common steps on the path to sustainability.

**Barriers**

Given the relative lack of progress on campus sustainability, it is not surprising that many scholars and practitioners have outlined the barriers to achieving sustainability in higher education. My analysis of the vast anecdotal evidence reveals that underlying each specific barrier is a general barrier: colleges and universities are firmly embedded in the dominant paradigm which – as discussed in the first section of this chapter – is often antithetical to sustainability. Specifically, strong analysts point out that colleges and universities encourage mechanistic and reductionist thinking (Orr 1996; Clugston and Calder 1999), which emphasizes scientific analysis of parts of the environmental problem as opposed to the systems-oriented perspective of sustainability. This reductionist paradigm is revealed in the dominant disciplinary structure, which makes finding connections between and among environmental and social issues extremely difficult and limits cross-functional collaborations (Cortese 1992). Moreover, colleges and universities tend to encourage the human-domination-of-nature thinking that has helped launched society into an ecological and social crisis (Orr 1996; Clugston and Calder 1999).

Many scholars in higher education have pointed out that fiscal pressures on colleges and universities have been increasing in recent years, which is forcing campuses to operate more like corporations by paying less attention to social, environmental and other longer-term issues and focusing more on quarterly revenues. This situation is particularly problematic because sustainability often does not neatly fit into business
plans (Johnstone 1997). Despite the fact that colleges and universities tend to be long-lived institutions, advocates point out that campus decision makers reject many environmental and sustainability initiatives because they have long payback periods and require upfront capital. Therefore, change agents cite costs as a major barrier to sustainability efforts. In a study of energy and waste efforts at campuses in London, Dahle and Neumayer (2001) found that the barrier of “greatest significance” was “budgetary constraints”, but that this perceived problem was due to a “lack of knowledge concerning how greening initiatives can save costs”. Chenushenko (1996, p. 1) concludes: “Many people believe that being environmentally responsible, as laudable as it may be, will be expensive. This is a myth which must be dispelled if real progress towards campus sustainability is to be possible.” A conference of Canadian university presidents concluded that “because of severe budget restrictions and external pressures it is a huge challenge to address the role of sustainable development in universities” (National Round Table on the Environment and the Economy 1995)

On the other hand, many analysts point out that costs can be a significant driver for operational initiatives, particularly in the area of energy efficiency. “There are many good reasons to renovate and reuse existing buildings – cost is just one them,” wrote Shimm (2001) about campus residence halls. Simpson (1996, p. 42) wrote: “Luckily, environmental stewardship is often good for the budget”, referring largely to waste reduction and energy conservation on campuses. “The Mueller Report” from Pennsylvania State University (Penn State Green Destiny Council 2001) documents many environmentally beneficial changes that can be made to the operation of a large campus
building which are cost-effective. However, the report cautions that economics should not be the sole driver of environmental initiatives.

Campus sustainability case studies and my experiences reveal an additional and often important barrier: lack of communication between academics and staff. “Many universities teach environmental science courses, yet the professors do not interact with the facilities management people or provide them with needed technical and management support,” said Rene A. Henry of the Environmental Protection Agency (United States Environmental Protection Agency 2001). This lack of communication often applies to relationships between students and faculty as well as students and staff/administrators. For example, at the University of Michigan, there are student environmental efforts on similar issues to faculty environmental efforts and administrative efforts (such as promoting energy efficiency), yet these initiatives are often not coordinated and thus are not as powerful as they could be. This problem is often amplified at large institutions, and can lead to misunderstandings, unnecessary duplication of work and general bad relations between key stakeholders in campus sustainability. Chapters V and VI explore this barrier in detail.

Interviews with stakeholder groups in higher education reveal that a “long list of competing priorities” is another major barrier to campus sustainability (Dahle and Neumayer 2001; Morri 2001). As discussed in previous sections, advocates have great difficulty getting environmental and interrelated social and economic issues onto the agenda of campus decision makers because other issues tend to appear to be more urgent and tractable. Commitment to sustainability does not offer the immediate prestige that committing to other, more broadly understood, initiatives entails. For example, research
on Australasian universities (Carpenter and Meehan 2002) reveals that environmental management is not a “mainstream business activity”. When sustainability issues are not a priority of top leaders and others, advocates find it very difficult to overcome the natural tendencies of colleges and universities to resist change. Without clear signals that sustainability issues are an institutional priority, advocates find it difficult to command the time and attention of key stakeholders who often lack the incentives to work on sustainability, and are confused about environmental and sustainability issues more generally.

Case studies and surveys reveal that leaders in higher education have been reluctant to commit to sustainability through strategic planning, although Walton et al. (2000) found a correlation between “support at the directorate level” and “the comprehensiveness of environmental strategy”. Part of this problem stems from the lack of clear performance measures for sustainability, and quantifying benefits to actively pursuing sustainability is difficult at best (Levy and Dilwali 2000). Therefore, advocates find efforts related to sustainability underway in different part of their campuses, but these efforts are largely uncoordinated and lack a long-term vision.

Generally, the barriers found in the advocacy and scholarly literature appear to be interrelated and combine to make change difficult. Bowers (1997, p. 200-201) points out: “Changing the deep conceptual and moral foundations of a culture – especially the assumption that equates technological progress with the highest expression of human evolution – is about as difficult as attempting to steer an iceberg. Nothing will happen quickly, and what is often the most resistant to changing directions is that which lies below the surface level of awareness.” However, it is clear that change agents will need
to reach this deep level of awareness to have a lasting effect on college and universities’ teaching, research, service and operations, despite the many obstacles presented. The contribution of this dissertation is to identify the relative individual and combined strengths of the various barriers as well as identify strategies to work around these significant problems.

**Indicators and Measurement**

One of the most intractable problems facing analysts and practitioners of sustainability in higher education is measuring and comparing progress. This section reviews this growing area of research by outlining criteria for developing sustainability indicators as well as by assessing the main cross-institutional sustainability assessment tools currently in use. No author has clearly outlined guidelines for sustainable campus assessments. Therefore, the following criteria represent my interpretation (based on “best practices”, sustainability and higher education theory, and my own experiences) of how cross-institutional sustainability assessment tools should be constructed.

1: *Identify Important Issues*: Sustainability assessment tools should address contextually appropriate issues of major importance to campus environmental, social and economic efforts and effects. Since many facets of colleges and universities potentially fall under the rubric of sustainability, the problem here is of parsimony. The task of the creator and user of assessment tools is to identify issues with broad effects and influence, yet specific measurement possibilities. Moreover, the tools should provide mechanisms to prioritize sustainability-related issues.

2: *Are Calculable and Comparable*: The ability to calculate progress toward sustainability is often a limiting factor in assessment. Campuses require quick, yet penetrating ways to measure status, progress, priorities and direction. These criteria do not imply that assessment tools must be exclusively quantitative. In fact, quantitative
tools in isolation have little chance of expressing progress toward sustainability in all facets of a college or university since there is no well-defined “sustainable campus” upon which to base measures. On the other hand, analysts should collect and assess qualitative data in a manner that allows for cross-campus comparisons. The key is to find measurement methods that are flexible enough to capture organizational complexities and differences, yet specific enough to be calculable and comparable.

**3: Move Beyond Eco-Efficiency:** The most common pitfall of assessment tools is that they measure eco-efficiency (Fussler 1996) instead of true sustainability. This distinction is crucial because eco-efficiency indicators stress material utilization, environmental performance and regulatory compliance, while sustainability indicators stress issues at the nexus of the environment, society and economy with the goal of no negative impacts (O'Connor 1995). For example, an eco-efficiency energy indicator would measure energy conservation, while a sustainability indicator would measure total greenhouse gas emissions. The difference is of mindset in promoting incremental (i.e., eco-efficient) or systemic (i.e., sustainable) change; eco-efficiency ends with the incremental while sustainability incorporates both approaches. As Onisto (1999, p. 41) points out, the danger of relying solely on eco-efficiency indicators “comes from the appearance that something substantive is being done. It lulls people into feeling that the environment has been, and is adequately, considered.”

**4: Measure Processes and Motivations:** Since “sustainability is a process, not a destination” (Bandy II, 1998, p. 1), the tools to measure sustainability should delve deep into decision making by asking about mission, rewards, incentives and other process-oriented outcomes. In this way, analysts capture dynamic processes and motivations – including direction, strategy, intent and comprehensiveness – as well as present impacts. To identify levers for organizational change, assessment tools should ask “why” and “how” campuses pursue sustainability in addition to “what” they are currently doing.
5. Stress Comprehensibility: Sustainability assessment tools should be comprehensible to a broad range of stakeholders. Thus, analysts should develop mechanisms for reporting that are verifiable and lucid. Given their potential importance as cross-campus communication tools in both process and outcome, comprehensibility should not be sacrificed for precision. However, this criterion does not preclude complicated methodology, as long as translation into understandable outcomes is possible (U.S. Interagency Working Group on Sustainable Development Indicators 1998). The ecological footprint (Wackernagel and Rees 1996) is an example of this principle, as complex calculations translate into an understandable and demonstrable geographic area.

The creators and users of cross-institutional sustainability assessment tools have a difficult task in meeting these criteria. They must not only portray the status of the colleges or universities (as measured against the ever-evolving baseline of sustainability) but also integrate motivations, processes and outcomes into a comparable, understandable and calculable framework that moves far beyond eco-efficiency. These tools need to decipher directions and processes while stressing prioritized opportunities for change. Perhaps because of the difficulties in developing and implementing cross-institutional assessment tools, the relatively new field of management for sustainability in higher education suffers from a lack of empirical data and assessment initiatives (Filho 2000). This dissertation uses the criteria outlined above when designing surveys and case studies (see Chapter III for a full methodological discussion).

I reviewed eleven efforts – which vary greatly in scope, scale and stage – to assess current theory and practice about how sustainability is being measured across colleges and universities (e.g., Smith and The Student Environmental Action Coalition 1993; Finlay et al. 1998; Higher Education Funding Council for England 1998; Higher Education Funding Council for England 1998; Ali Khan 1999; Finlay and Samuelson 1999; Campus Consortium for Environmental Excellence 2000; New Jersey Higher Education Partnership for Sustainability 2001) (See Shriberg (2002a) for a full
The following five initiatives represent the best efforts to date, as judged by my criteria outlined above (Table 2.2).

Table 2.2: Summary of Major Strengths and Weakness of Five Cross-Institutional Sustainability Assessment Tools

<table>
<thead>
<tr>
<th>Assessment Tool</th>
<th>Major Strengths</th>
<th>Major Weaknesses</th>
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| National Wildlife Federation’s State of the Campus Environment | • Comprehensive  
• Combines eco-efficiency and sustainability  
• Identifies barriers, drivers, incentives and motivations  
• Identifies processes and current status | • Little use of the term “sustainability”  
• Small sample within each college/university |
| Sustainability Assessment Questionnaire | • Emphasizes (cross-functional) sustainability as a process  
• Useful as a conversational and teaching tool  
• Probing questions that identify weaknesses and set goals | • No mechanisms for comparisons or benchmarking  
• Difficult for large universities to complete |
| Auditing Instrument for Sustainability in Higher Education | • Flexible framework for institutional comparisons  
• Process-orientation which helps prioritize and set goals  
• Created through international consensus | • Difficult to comprehend  
• Motivations are potentially excluded |
| Greening Campuses | • Comprehensive, action orientation incorporating processes  
• Explicitly and deeply addresses sustainability  
• User-friendly manual with case studies, recommendations | • Calculations and comparisons difficult  
• Focus on Canadian community colleges  
• Resources out-of-date |
| Environmental Performance Survey | • Process-oriented  
• Compatible with environmental management systems | • Operational eco-efficiency focus  
• Neglects sustainability and cross-functional initiatives |

The National Wildlife Federation’s “State of the Campus Environment” (U.S.)

The most comprehensive and ambitious assessment tool to date is the National Wildlife Federation (NWF) Campus Ecology Program’s “State of the Campus Environment” project (McIntosh et al. 2001). NWF’s far-reaching goal is to provide a “national profile of environmental performance on America’s colleges and universities (National Wildlife
Federation 2001).” To this end (and after an extensive review process), NWF developed the “first-ever large-scale (campus) environmental performance survey” – funded in part by the Educational Foundation of America, co-sponsored by 14 organizations, and administered by Princeton Survey Research Associates. The survey – which is web-based in order to reduce waste without sacrificing features such as the ability to pause and save data – was sent (in December 2000) to presidents, provosts and chief facilities officers at all 4,100 accredited two- and four-year colleges and universities in the U.S. NWF’s long-term goal is to conduct the survey every 2-3 years to assess national trends over time (Cacciola 2001).

The NWF survey effectively combines measures of incremental eco-efficiency (e.g., water conservation and recycling) with more long-term, sustainable processes (e.g., faculty training in sustainability, land stewardship practices, and use of life-cycle assessment) (McIntosh et al. 2001). Moreover, the survey combines accountability for environmental performance and history of environmental initiatives with detailed issue-based questions. The survey also takes the unique step of explicitly identifying barriers, drivers, incentives and motivations for pursuing campus environmental change from a leadership perspective. The mixture of qualitative and quantitative measures ensures comparability, contextual richness and a comprehensible set of best practices. NWF emphasizes that the survey is not designed to rank individual campuses on sustainability, but rather to provide nationwide trends on managerial practices.

One weakness of NWF’s assessment tool is the lack of explicit reference to sustainability, as the term only appears in the context of curriculum. NWF opted to use the term “management” or “environmental” instead of “sustainability” to ensure
comprehension by administrators. However, assuming that sustainability is qualitatively different from “environmental responsibility” (see the first section of this chapter for a full discussion), campus leaders might attach different meanings to survey questions based on their interpretations, none of which might approach theorists’ and practitioners’ meaning of “sustainability”. In addition, NWF neglects social issues and their interaction with environmental issues in their survey. Following my earlier proposition that sustainability is a concept that helps link environmental and social issues, the lack of attention to social issues may derive from the lack of explicit reference to sustainability. In any case, an unavoidable weakness (given the broad scope of the survey) is that characterizing an entire campus with input from a maximum of the top three decision makers (and, possibly, their staffs) is difficult and potentially misleading.

NWF received responses from 1,116 out of 12,300 individuals (9.1%) and 891 out of 4,100 institutions (21.7%) (McIntosh et al. 2001). While summarizing the results of the survey is beyond the scope of this discussion, NWF’s Campus Environmental Scorecard represents a major step forward in our knowledge of campus environmental performance and decision making processes. This process of “grading” U.S. campuses on environmental issues can and should be used as a foundation for future assessments, such as the survey used in this dissertation.

University Leaders for a Sustainable Future’s Sustainability Assessment Questionnaire

The Association of University Leaders for a Sustainable Future’s (ULSF) Sustainability Assessment Questionnaire (SAQ) – which is currently being utilized at select campuses across the world – complements NWF’s efforts. While NWF focuses on benchmarking, the SAQ is a largely qualitative “teaching tool” that stimulates
“discussion and further assessment” (ULSF, 1999). ULSF encourages institutions to use the SAQ as a group exercise – led by a ULSF staff member – with 10-15 representatives from “critical campus constituencies”. The goals of the SAQ are to offer its users “a comprehensive definition of sustainability in higher education as well as to provide a snapshot of their institutions on the path to sustainability”. The SAQ emphasizes decision making mechanisms and processes, with responses on both a 5-point likert scale and in open-ended paragraphs.

The greatest strength of the SAQ is its focus on sustainability and sustainable processes. Sustainability is explicitly outlined in the cover letter and through a page of sustainability definitions placed before the survey. These definitions emphasize the social side of sustainability as well as the inherent ambiguities of moving toward and measuring sustainability as a campus. Another major strength of the SAQ is that it poses probing questions about sustainability and its integration into the campus in terms of strengths, weaknesses, goals and desires, such as “the institution’s contribution to a sustainable economy and sustainable local communities”. ULSF stresses sustainability, not eco-efficiency, in institutional operations by inquiring about source reduction, social responsibility in investing, and sustainable landscaping. In addition, the SAQ assesses crosscutting organizational structures and processes – such as integration of sustainability into incentives, rewards, staffing, and formal statements.

The major weakness of the SAQ is identified by ULSF in its cover letter for the tool (ULSF, 1999): “Since the questions are primarily qualitative and impressionistic, we cannot use the responses to rate or compare institutions.” However, the results are helping to determine the perception of sustainability in higher education. An additional
potential problem is that large institutions may not be able to answer many of the questions comprehensively without a great deal of effort, such as listing courses and research efforts related to sustainability. Overall, the SAQ has been and will continue to be very successful as a discussion-generating and progress-reporting tool for campus sustainability scholars and practitioners.

**Auditing Instrument for Sustainability in Higher Education (AISHE)**

The major goals of the Dutch working group designing the Auditing Instrument for Sustainability in Higher Education (AISHE) include: providing criteria and a framework for internal and external sustainability audits; measuring success in campus implementation of sustainability; and creating a mechanism to exchange experiences and motivations (Roorda 2000; Roorda 2002). The goal is for AISHE to expand across Europe and the world, resulting in certificates, awards, and other forms of official recognition for users and the instrument itself (Roorda 2000). The tool consists of 24 “criteria” evaluated on five developmental “stages” (activity oriented, process oriented, system oriented, chain oriented, total quality). For example, “staff development” is in the total quality stage (the highest) if “the organisation policy on sustainability is based on societal and technological developments. There is systematic feedback to society (Roorda, 2002).” By evaluating and prioritizing the stage of each item (in groups of 10-15 over a 4-6 hour span), a college or university forms a matrix (24 x 5) of status and goals complete with assistance tools for advancement. AISHE focuses on process over content, qualitative over quantitative measures, and descriptive over prescriptive measures. Thus, AISHE is both an auditing method and a policy instrument around which other sustainability tools, such as ISO 14001, can form. AISHE’s process-
orientation captures dynamic decisions involved in managing for sustainability. Moreover, the developmental stages encourage measurement of progress without forcing quantitative measures. Thus, AISHE provides for potential cross-institutional comparison.

A significant weakness of AISHE is that the criteria are somewhat abstract and difficult to comprehend. However, the creators of AISHE are developing assistance tools, examples, reference lists, and a training program to make the criteria more tangible and comprehensible. Moreover, AISHE does not explicitly include indicators about motivations for pursuing sustainability. In other words, it seems possible to use the tool without explicitly addressing the reasons for moving a campus in a particular direction. Overall, AISHE is an excellent example of a process-oriented approach to sustainability assessment. The consensus-building approach to designing AISHE is creating a flexible platform upon which to stimulate and operationalize sustainability in higher education. Thus, AISHE has the potential for global reach and appeal.

**Greening Campuses**

The primary goal of “Greening Campuses” (Chernushenko 1996) is to be “a comprehensive source of information and strategies designed as much for institutions already grappling with environmental issues as it is for those that have barely begun to do so (vi).” Greening Campuses is a practical manual (which comes on a diskette) created through a partnership between the United Nations Environment Programme, the Association of Community Colleges of Canada and the International Institute for Sustainable Development. The manual begins with a call to action as well as definitions of sustainability. The sustainability orientation continues throughout the manual. A
major strength of Greening Campuses is its comprehensive, process orientation. Each of the many topics is addressed by clearly identifying: the problem and potential solutions; common obstacles and how to avoid them; costs, benefits and opportunities; priorities for action; and best practices. Thus, Greening Campuses creates a systematic, holistic framework for action toward sustainability that incorporates specific, prioritized recommendations as well as examples of institutions further along the path to sustainability. Moreover, Greening Campuses raises profound issues about social and ecological sustainability. For example, the “Facilities Design and Construction” section recommends beginning the design process by asking the question: “Is this facility needed?” However, that Greening Campuses fails to provide an adequate way to calculate and compare progress toward sustainability. In addition, the manual focuses on Canadian community colleges, not to the exclusion of other institutions, but enough to hamper the usefulness for other types of campuses. Moreover, many of the resources in the manual are out-of-date. Overall, Greening Campuses (Chernushenko 1996) is an excellent resource for campus environmental decision makers developing action strategies, but falls short as a measurable and comparable assessment tool.

Herremans and Allwright’s Environmental Performance Survey (Canada and the U.S.)

To assist the University of Calgary and other institutions in implementing environmental management systems, Herremans and Allwright (2000) designed a survey to answer the question: What drives good environmental performance at North American colleges and universities? This survey was sent (1998-1999) to at least the largest two colleges or universities in each province and state as well as to Talloires Declaration signatories. Fifty institutions (12 Canadian/38 U.S.) completed the survey, which takes a
cost-centered approach to environmental management, focusing not on quantitative data, but on four managerial “elements”: focus, commitment, capability and learning. The strengths of Herremans and Allwright’s effort come from their process-orientation, simplicity and compatibility with established environmental management systems. Moreover, this effort addresses and categorizes environmental posture and behavior in a holistic manner. However, the results are limited almost solely to operations, largely ignoring deep cross-functional, cultural changes required for movement toward sustainability.

Overall, the campus sustainability assessment tools reviewed in this subsection and the others reviewed for this dissertation vary greatly in purpose, scope, function and state of development (Table 2.2). However, these tools share important strengths and weaknesses. Many assessments excel in capturing baseline data on environmental and sustainability performance as well as process-oriented information on how campuses are beginning to manage for sustainability. These tools provide a foundation for strategic planning by identifying important issues as well as methods to set and achieve prioritized sustainability goals. However, most assessment tools do not provide mechanisms for comparing campus efforts against other institutions or national/international averages. While measuring “what” campuses are doing and “how” they are doing it, most assessments neglect “why” initiatives began and are maintained (i.e., motivations). Moreover, many tools focus on operational eco-efficiency, although theory and practice point to the need for sustainability integration across functional areas. Finally, many analysts and assessment tools do not effectively communicate methods and results, although this situation is likely to change as the tools are used more extensively.
The survey constructed for this dissertation draws heavily upon the tools analyzed in this subsection (see Chapter III for detailed information about survey construction). My goal was to design the most effective tool to analyze the process of becoming a sustainable college or university, learning from the mistakes and successes of past initiatives. While the NWF survey is a larger undertaking in terms of the number of campuses surveyed, this effort provides more depth for each campus without sacrificing cross-campus comparisons. Therefore, this research represents a unique and valuable contribution to the evolving field of measuring sustainability in higher education.

**Conclusion and Contributions**

Overall, moving toward sustainability in higher education can be a key driver for or impediment to moving toward sustainability in society as a whole. As the United Nations Educational Scientific and Cultural Organization (1997, p. 16) wrote, “Education, in short, is humanity’s best hope and most effective means in the quest to achieve sustainable development.” However, scholars and practitioners are currently in the early stages of developing rationales, methods, processes and indicators for moving toward sustainable colleges and universities. Achieving sustainability in colleges and universities will clearly be an arduous process, but with the potential for enormous rewards. Pelikan (1992, p. 20-21) summarizes the situation as follows:

Anyone who cares simultaneously about the environment and about the university must address the question whether the university has the capacity to meet a crisis that is not only ecological and technological, but ultimately educational and moral … Just how much of this is a genuine wave of the future and how much is mere tinkering will depend at least in part on the readiness of the university community to address the underlying intellectual issues and moral imperatives of having responsibility for the earth, and to do so with an intensity and ingenuity
matching that shown by the previous generations in obeying the command to have dominion over the planet.

The advocacy literature reveals that pressure on colleges and universities to move toward sustainability has increased markedly over the past 10 years. This pressure has lead to some successful initiatives. As Morri (2001, p. 1) points out:

The efforts of the last decade have not been wasted. The sustainability message has reached the ears of faculty, students and higher education decision makers around the country. Many campuses are implementing important programs to improve their relationship with the environment and to inculcate sustainability issues into the curriculum.

Yet, environmental issues are not a major priority in higher education, as any perusal of the literature on higher education management demonstrates. Moreover, most institutions “stop at relatively token efforts” (Morri 2001) compared to the scale of the unsustainability of current production and consumption systems. As Walton (2000, p. 149) reports: “Recent research has discovered that concerted institution-wide action is rare…Universities have by and large failed to address environmental issues in the curricula they offer, or the way they operate.” Chernushenko (1996, p. v-viii) concludes: “Though many have been grappling with environmental issues, few have crafted and implemented the kinds of comprehensive strategies and practices required for sustainability…most have taken only piece-meal steps.” Campuses do not yet understand the paradigm shift involved in the concept of sustainability and sustainable development.

As Calder and Clugston (1999) state: “Most of the efforts to date…are heavily oriented toward environmental initiatives. The emphasis is not on sustainability broadly defined, even while the term ‘sustainability’ is often used in the rhetoric of reform.”

The concept of sustainability can be viewed as a confusing morass or an opportunity to rethink mission, values, mental models and improve the quality of higher
education. Some individuals and institutions are becoming comfortable with moving toward sustainability while others are shying away from the task. As discussed in the first section of this chapter, the greatest strengths and weaknesses of the concept of sustainability lie in its inherent breadth and inclusiveness. A major goal of this dissertation is to help identify strategies for moving sustainability from its current largely theoretical stage into an operational phase in institutions of higher education. More generally, the contribution of this dissertation to the emerging field of sustainability in higher education is to help establish a framework for analyzing decision making and outcomes related to environmental and interrelated social and economic issues. Thus, my goal is to provide a conceptual and empirical platform upon which further qualitative and quantitative research in the field can build. This dissertation represents a major step forward because no other analyst has devoted this much attention to the sustainability process at U.S. institutions of higher education. Therefore, as this dissertation begins to answer the broad cross-disciplinary research questions posed in the following section, it will help establish the direction for the field. More broadly, this dissertation will help advance sustainability theory through practical applications, extend higher education management theory by applying decision making frameworks to a unique set of issues, apply rationales and motivations for corporate social and environmental responsibility to institutions of higher education, and test the influence of transformational leadership on environmental issues in academia.

Research Questions and Framework/Model

While activists are increasingly calling upon colleges and universities to become leaders on the path to sustainability, the literature on sustainability in higher education
(and related fields) provides little systematic guidance to potential change agents about the process of becoming a sustainable campus. This gap in the literature is particularly problematic because institutions of higher education tend to be highly resistant to organizational change. Therefore, I combined the diverse literature described in this chapter with my own experiences in campus environmental management to articulate five research questions and initial propositions to answer these questions. I designed the propositions to be a foundation for future hypotheses that can be empirically tested. Therefore, the research questions and propositions are broad in scope, allowing space to develop new and alternative explanations as well as more specificity throughout the study and in future research. This framework is displayed graphically in Figure 2.1, which is structured as a pyramid to represent how the questions and propositions build on each other, starting from the baseline (internal, non-environmental) organizational conditions at the bottom and ending with the “ideal sustainable campus” at the top.

**Q1: WHICH ORGANIZATIONAL CONDITIONS ARE MOST CONDUCIVE TO PRODUCING STRONG CAMPUS SUSTAINABILITY EFFORTS?**

This question refers to the “background conditions” which can be conductive to or present a barrier to the ascendancy of environmental and interrelated social/economic issues onto the agenda of institutional stakeholders. The focus of this research is on internal conditions as opposed to conditions imposed by external entities. These conditions are not specific to environmental issues. Rather, the conditions recognize that each college or university has unique organizational leaders, culture and decision making structures, which affect institutional response to sustainability. These conditions form the base of the initial organizational factor model for sustainability in higher education.
Figure 2.1: Preliminary Organizational Factor Model for Leading Sustainable Campuses

**ORGANIZATIONAL CONDITIONS (Q1)**
- Progressive/Liberal Politics
- Reputation/Image Focus
- Ethical/Moral Orientation
- Collaborative/Collegial Decision Making
- Transformational Leaders

**DRIVERS (Q2)**
- Coordinated Effort
- Leadership Support

**RATIONALE/MOTIVATION (Q3)**
- Long-Term Interests
  - (i.e., Enlightened Self-Interest)

**OUTCOME (Q5)**
- Comprehensive, Systemic, Holistic, Long-term Programs focused on Sustainability

**Barrier (Q4)**
- Low Priority of Environmental Issues
My assumption is that internal or external sustainability advocates are forcing colleges and universities to formulate at least an initial response to environmental and interrelated social issues. The more conducive the (non-environmental) conditions, the more likely a campus is to move toward sustainability. The less conducive the conditions, the more likely a campus is to lag in sustainable thought and practice. Therefore, these conditions form the “lay of the land” for change agents in terms of potential for favorable or unfavorable outcomes.

**Proposition 1: Campuses focused on image and reputation are more likely to have strong sustainability initiatives.**

This proposition comes from the literature on corporate social and environmental responsibility profiled in the “‘Enlightened Self-Interest’ Rationale” subsection of the “Corporate Environmental Management & Social Responsibility” section of this chapter. This research asserts that pressure to improve (or maintain) image and reputation can be a key driver for sustainability (and other social and environmental) initiatives (e.g., Turban and Greening 1997; Fombrum et al. 2000; SustainAbility and United Nations Environment Programme 2001). Therefore, I assert that institutions of higher education which are more concerned about image and reputation generally are more likely to be receptive to issues related specifically to sustainability than those institutions with less external and internal pressure to improve image and reputation generally.

**Proposition 2: Campuses with collaborative decision making structures, a collegial atmosphere and a tradition of interpersonal collaboration are more likely to have strong sustainability initiatives.**

This proposition comes from case studies in the literature on campus environmental progress profiled in the “Processes and Frameworks” subsection of the “Sustainability in Higher Education” section of this chapter as well as the literature profiled in the “Sustainability” section of this chapter. These literatures reveal that sustainability and environmental issues are complex, and require broad stakeholder support and
engagement (e.g., World Commission on Environment and Development 1987; Lele 1991; Kidd 1992), and that campus environmentalism requires interpersonal and organizational collaboration (e.g., Smith and The Student Environmental Action Coalition 1993; Penn State Green Destiny Council 2000; Shriberg 2000; Uhl and Anderson 2001). Therefore, this study’s premise is that the involvement and coordination of all stakeholders is key to success in advancing broad, diverse sustainability programs. Given the trans-disciplinary and cross-functional challenges that sustainability presents to colleges and universities, the ability for individuals to work well together, to be ensconced in a collegial atmosphere, and to be involved in decision making processes generally are important conditions for success in sustainability initiatives specifically.

**Proposition 3: Campuses which emphasize ethics and morality in their image and decision making are more likely to have strong sustainability initiatives.**

This proposition comes from literature profiled in the “‘Enlightened Self-Interest’ Rationale” subsection of the “Corporate Environmental Management & Social Responsibility” section, the “Sustainability” section, and the “Rationales” subsection of the “Sustainability in Higher Education” section in this chapter. This research asserts that sustainability is a moral concept (e.g., Leopold 1949; Viederman 1995), that corporate managers are beginning to consider environmental ethics out of necessity (e.g., Fineman 1998; Hoffman and Ehrenfeld 1998; Wysburd 1998), and that one of the strongest rationales for campus sustainability initiatives is social/ethical obligations (e.g., Kamba 1991; Cortese 1992; Wright 2001). This study’s premise is that the environmental and interrelated social/economic issues which comprise sustainability represent ethical choices, and that the strongest justifications for pursuing sustainability are long-term and intangible. Therefore, institutions of higher education willing to act on strong ethical and moral values in general are more likely to act on sustainability specifically.
Proposition 4: Campuses with transformational leaders are more likely to have strong sustainability initiatives.

This proposition comes from the literature profiled in the “Transformational Leadership” section of this chapter. This research asserts that transformational leaders inspire action on many ethical and organizational issues (e.g., Bass and Avolio 1994; Carlson and Perrewé 1995; Pawar and Eastman 1997; Bass and Steidlmeier 1999). This proposition also comes from the literature profiled in the “Drivers” subsection of the “Sustainability in Higher Education” section of this chapter. This research asserts that top leadership support and individual environmental “champions” are important drivers of campus sustainability (e.g., Clugston and Calder 1999; Lounsbury 2000; Walton 2000). Linking these findings together, my premise is that visionary and charismatic leadership can motivate stakeholders to action toward the long-term, unclear and ethics-based goal of sustainability. However, transformational leaders can also move institutions of higher education in directions antithetical to sustainability. Therefore, while the presence of transformational leaders is generally a positive condition for campus sustainability, this transformational leadership needs to be linked closely with sustainable goals and objectives for this potentially positive condition to be enacted.

Proposition 5: Campuses with a liberal/progressive political orientation are more likely to have strong sustainability initiatives.

This proposition comes from the literature on environmental issues and sustainability profiled in the “Sustainability” section of this chapter. This research asserts that “the environment” and other social causes are “left wing” issues. This proposition is not well developed in the literature, but my assertion is that political orientation affects student activism, faculty biases, and leadership commitment, which all affect campus environmental and social outcomes.
**Proposition 6: Demographic conditions do not affect the potential for strong sustainability initiatives.**

My review of case studies of institutions pursuing sustainability (see the “Sustainability in Higher Education” section of this chapter) does not reveal a pattern in terms of the type of institution which is more or less likely to be a sustainability-leader. Moreover, there are no comprehensive, empirical studies that use demographic variables to predict sustainable campus outcomes, although several studies include demographics (e.g., Herremans and Allwright 2000; Walton 2000). The literature on sustainability theory, higher education management, and corporate environmental and social responsibility profiled in this chapter do not provide a basis for predicting environmental outcomes based on institutional demographics. Therefore, there is no compelling reason to believe that demographic conditions are determinants of sustainability-leadership.

Organizational conditions form the base of the model portrayed in Figure 2.1. This research assumes that these conditions are “given” within the college or university. For analytical purposes, the conditions are separated from each other, but they are interrelated in practice, as discussed throughout the dissertation. Change agents link these organizational conditions to issues relating to sustainability when advocating for organizational change. Therefore, these conditions form the structures that sustainability advocates must be prepared to work with or against. The data required to explore these propositions and begin to answer the research question include institutional profiles and the opinions of stakeholders about the values and structures of their campuses. This dissertation gathers quantitative and qualitative data to determine whether these conditions work in the predicted manner (or at all), which conditions are most important, and what conditions are missing from the original propositions.
Q2: WHICH STAKEHOLDER GROUPS ARE MOST EFFECTIVE IN DRIVING CAMPUS SUSTAINABILITY EFFORTS?

Proposition 1: The support of committed leaders at high levels in the organizational hierarchy is required for campus sustainability efforts to succeed.

This proposition comes primarily from the anecdotal findings profiled in the “Sustainability in Higher Education” section of this chapter. The stories of transformation contained in this literature typically either cite an institutional leader as a driver of environmental actions or include the lack of leadership support as a key barrier to progress (e.g., President's Council on Sustainable Development 1995; Chernushenko 1996; Simpson 1996). Moreover, the literature profiled in the “Transformational Leadership” section of this chapter stresses that leaders can move organizations in ethical, long-term directions (e.g., Deluga 1988; Conger 1999). Combining these literatures leads me to conclude that at least one individual with broad and substantial influence needs to be a vocal advocate for sustainability initiatives in order to be successful. Moreover, the governing board for the institution needs to be supportive of campus sustainability efforts to ensure success because the board is responsible for selecting and influencing top administrators as well as setting the strategic direction for the institution.

Proposition 2: A committed core of individuals with broad reach and influence is required for campus sustainability efforts to succeed.

This proposition comes from literature profiled in “Change Strategies” subsection of the “Higher Education Management & Organizational Change” section of this chapter. This research asserts that organizational change in academia typically only occurs after careful debate among many constituents (e.g., Altbach 1974; Fantini 1981; Simsek and Louis 1994). Moreover, the literature profiled in the “Corporate Environmental Management & Social Responsibility” section of this chapter stresses the importance of stakeholder involvement in organizational change processes (e.g., Greeno and Robinson 1992; Sains 2002). Combining these findings, my assertion is that a committed core of individuals
needs to draw in additional resources and stakeholders to enact conducive organizational conditions and negotiate around barriers to make sustainability a campus priority. Outside forces – such as governmental agencies and leaders as well as the local community – can also help drive sustainability efforts by influencing this committed core of individuals and institutional leaders.

This research question and the related propositions form the link between the organizational conditions and the rationales for sustainability action, as shown in Figure 2.1. The drivers of sustainability efforts enact organizational conditions using a variety of rationales for progress. These propositions are clarified and examined in terms of the importance of different stakeholders and leaders as well as the interactions among stakeholders as the dissertation progresses. To test these propositions, data are required to identify campus environmental leaders and their relative patterns of influence.

Q3: WHAT ARE THE STRONGEST RATIONALES/MOTIVATIONS FOR CAMPUS SUSTAINABILITY EFFORTS?

Proposition: Rationales related to long-term strategic and ethical benefits (i.e., “enlightened self-interest”) are most effective in promoting campus sustainability.

This proposition comes mainly from literature profiled in the “‘Enlightened Self-Interest’ Rationale” subsection of the “Corporate Environmental Management & Social Responsibility” section of this chapter. This research asserts that long-term and ethical rationales, including reputation benefits, stakeholder satisfaction and retention, and institutional ethics and social obligation are most effective at motivating corporate environmental action (e.g., Dillon and Fischer 1992; Logsdon and Yuthas 1997; Whitman 1999). This proposition is supported by anecdotal evidence presented in the “Sustainability in Higher Education” section of this chapter (e.g., van Ginkel 1996; Creighton 1998; Breyman 1999). My assertion is that potential change agents for sustainability initiatives in higher education are most effective in producing favorable
outcomes when appealing to institutional strategic and ethical interests. Benefits to pursuing sustainability-leadership are not typically apparent in the short-term or in conventional measures of success; thus, advocates must rely on systemic, long-term rationales to motivate action. Conversely, appeals to short-term interests – such as cost-effectiveness and regulatory compliance – are not effective because the evidence for such claims is weak and these extrinsic factors do not typically motivate stakeholders.

This research question and proposition form the third level of the environmental organizational factor framework by identifying strategies (i.e., rationales) through which potential change agents (i.e., drivers) can produce environmentally beneficial outcomes (Figure 2.1). This study gathers data on the rationales for sustainability action by examining the varying successes of advocacy strategies used by different stakeholder groups.

Q4: WHAT ARE THE DOMINANT BARRIERS TO MOVING A COLLEGE OR UNIVERSITY TOWARD SUSTAINABILITY?

Proposition: The relatively low priority assigned to sustainability by institutional leaders and other stakeholders is a major impediment to sustainability efforts.

The literature profiled in the “Sustainability” section of this chapter emphasizes that the cause and effect of environmental issues tend to be disaggregated in space and time, which means that environmental and social impacts tend to occur far from institutional location and consciousness. The literature profiled in the “Barriers” subsection of the “Sustainability in Higher Education” section of this chapter provides anecdotal evidences that environmental and interrelated social issues are not on the higher on the priority list of decision makers in higher education (e.g., Johnstone 1997; Dahle and Neumayer 2001; Morri 2001; Carpenter and Meehan 2002). While case studies reveal that funding,
organizational structure, and lack of coordination can be problematic, my assertion is that institutional and individual commitment to sustainability can alleviate concerns about these resource allocation and incentive issues. Therefore, the low priority of sustainability functions as a “keystone” and “indicator” barrier that directly and indirectly influences other barriers.

Barriers occur at and between all levels of the model outlined in Figure 2.1. To examine the relative strength and connectedness of barriers to campus sustainability, this study gathers quantitative and qualitative data on problems that potential change agents face.

Q5: WHAT DISTINGUISHES ROBUST CAMPUS ENVIRONMENTAL INITIATIVES FROM WEAKER EFFORTS?

Proposition: When environmental advocates use “sustainability” as a framework to guide campus initiatives, the outcomes tend to be coordinated, comprehensive efforts which are integrated across functional areas and departments, and address ecological and interrelated social issues at the institutional level (i.e., robust initiatives). Advocates can use the term and concept of sustainability to gain support from leaders and other stakeholders.

The literature profiled in “Uniqueness” subsection of the “Sustainability” section of this chapter emphasizes that the concept of sustainability has characteristics – such as trans-disciplinary appeal (Lele 1991; Uhl et al. 1996), systemic perspective, and the inclusion of interrelated social and economic issues into the debate on ecological issues (Richards and Gladwin 1999) – which are unique. The literature profiled in the “Sustainability in Higher Education” section of this chapter highlights the idea that the best campus sustainability initiatives are comprehensive and coordinated (e.g., Penn State Green Destiny Council 2000). Combining these findings, a key distinction in this proposition is the scattered efforts undertaken by many campuses as opposed to the systemic, long-term
efforts made by the few leading “sustainable” campuses. My assertion is that advocates’ use of the term and concept “sustainability” as a guiding framework directly correlates with outcomes that are explicitly oriented toward genuine, comprehensive consideration of environmental and interrelated social issues.

Initiatives oriented toward sustainability are more likely to factor ecological and social issues directly into decision making, as reflected in policies and a great deal of coordination. The outcome from this process is a robust, far-reaching sustainability effort that encompasses all aspects of the campus. Moreover, advocates can communicate across traditional organizational boundaries and motivate stakeholders to work towards long-term, ethical goals using the concept of sustainability. Conversely, initiatives oriented toward “greening”, “stewardship”, “environmentalism” or a similar term or concept are more likely to focus solely on ecological issues (ignoring social and economic issues), and will not be as effective at motivating stakeholders as those oriented toward sustainability. These initiatives tend to be piecemeal environmental efforts which influence institutional or departmental responses to particular issues, but do not significantly impact institutional culture or decision making.

This proposition uses sustainability as an analytical concept to distinguish between campus environmental efforts. In practice, the term and concept of sustainability has multiple meanings and uses. My interpretation of a “sustainable campus” equates with my definition of robust campus environmental initiatives. However, characteristics of a “sustainable campus” can potentially be achieved without direct reference to the term sustainability. Therefore, this dissertation gathers data on the current ecological and social state of campuses as well as on decision making processes
and structures. This study also gathers data on the usage of the term and concept of sustainability in campus environmental documentation and initiatives as well as environmental advocates’ and stakeholders’ opinions about the term’s utility. By analyzing these data separately and jointly, I describe the apex of the organizational factors represented in Figure 2.1.

By combining the research questions and propositions, Figure 2.2 portrays a dynamic initial model of the organizational factors involved in sustainability-leadership in higher education. Whereas Figure 2.1 outlines the conditions, strategies and processes for creating the ideal “sustainable campus”, Figure 2.2 outlines a model applicable to any college or university. At the top of the model are the non-environmental organizational conditions that this model predicts will affect how colleges and universities respond to campus sustainability efforts: organizational image/reputation, decision making structures, ethics/morality, leadership and political orientation. The bottom of Figure 2.2 contains a continuum of institutional sustainability outcomes:

1) **Sustainability-Leaders**: Sustainability-leaders have comprehensive, systemic programs and policies that explicitly orient toward sustainable outcomes and seek to address underlying causes of environmental and social problems. These institutions are perceived as leaders in many aspects of sustainability and establish environmental issues as a high organizational priority. Economic decisions are often assessed within the context of ecological and social systems. Few institutions fall into this category, although many exhibit at least one characteristic of sustainability-leadership.

2) **Environmental-Leaders**: Environmental-leaders engage in piecemeal efforts to “green-the-campus” and short-term commitments to environmental responsibility. These institutions are leaders on some ecological issues and laggards on others. Environmental considerations are not a consistent factor in organizational decision making, but are important when debating particular issues. Economic issues are equal to or, often, more important than environmental and social issues during decision making. Many institutions with fledgling environmental efforts fall into this category.
Figure 2.2: Preliminary Campus Sustainability Organizational Factors Model

Organizational Conditions (Q1):
Organizational Image/Reputation, Decision Making Structures, Ethics/Morality, Leadership and Political Orientation

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Environmental (and Social) Issues

---

Sustainability Decision Making Processes

---

Drivers (Q2)
Coordinated Core Institutional Leaders
Rationale/Motivation (Q3)
“Enlightened Self-Interest” (e.g., Reputation, Ethics)

---

Drivers (Q2)
Scattered Stakeholders
Rationale/Motivation (Q3)
Cost Effectiveness
Regulatory Compliance

---

Drivers (Q2)
Few or None
Rationale/Motivation (Q3)
Environmental Issues Do Not Affect Institution

---

Barriers (Q4)
Not a Priority
Lack of resources

---

SUSTAINABILITY-LEADER (Q5)
* Comprehensive, holistic leadership on sustainability programs and policies
* Explicit orientation of leaders and management systems toward sustainability

---

ENVIRONMENTAL-LEADER (Q5)
* Isolated efforts to “green-the-campus”
* Leadership and management orientation toward reducing environmental burdens

---

ENVIRONMENTAL-LAGGARD (Q5)
* Few, if any, initiatives
3) **Environmental-Laggards**: Environmental-laggards have limited or no environmental initiatives. Economic issues (or other social issues) dominate decision making, and environmental issues are not on the agenda of institutional leaders. This study identifies these institutions through their lack of engagement with environmental issues.

Connecting the organizational conditions to the outcomes are the organizational factors discussed in the research questions and propositions (Figure 2.2). Specifically, a core group of change agents – with the support or leadership of institutional leaders – who base sustainability appeals on ethical obligations, reputation and other long-term benefits are likely to drive efforts at institution which are “sustainability-leaders”. Diverse and largely uncoordinated advocates who base environmental appeals on moving beyond compliance with regulations and reducing costs are likely to drive efforts at institutions which are “environmental-leaders”. Institutions which are “environmental-laggards” do not have advocates for environmental initiatives, and thus do not have environmental efforts. In all three types of institution, barriers to progress on sustainability occur at all stages in the process, and often revolve around the low priority and lack of resources assigned to environmental and interrelated social issues.

The research questions, theoretical framework and model portrayed in Figures 2.1 and 2.2 are both exploratory and explanatory. Since there is no established body of literature specific to sustainability in higher education upon which to base causal relationships and because this study develops broad principles and models, this research is most accurately described as exploratory. However, I use relevant knowledge from related fields as well as potential relationships found in the literature and through my experiences. Moreover, this study assesses preliminary causal relationships. Therefore, this research can also be described as explanatory.
There are no studies that directly test the efficacy of quantitative or qualitative research in formulating and testing hypotheses about campus sustainability. Therefore, this research addresses a methodological question in addition to the research questions: What do different methodological approaches contribute to analyzing campus sustainability? Chapter III describes and compares three methodological approaches – surveying, a comparative case study from an “outside perspective”, and an in-depth case study as participant-observer. Chapters IV, V and VI demonstrate the type of data that can be collected with each method. My initial assertion is that triangulation (i.e., multiple methodological frames) is the best way to approach the complex topic of campus sustainability. Chapter VII assesses the strength of this assertion.

The following chapters operationalize (Chapter III) and assess (Chapters IV, V and VI) each research question and proposition. The model evolves throughout the study through clarification, refutation and expansion of proposed causal relationships as well as the introduction of new propositions. The conclusion (Chapter VII) revisits the research questions and propositions, using the findings from the study to analyze the process of becoming a sustainable campus as well as provide direction for future studies. Overall, the model will provide a theoretical and empirical basis for the emerging field of sustainability in higher education. Moreover, this research will inform related bodies of knowledge – such as sustainability theory, higher education management, corporate social responsibility and transformational leadership – by providing lessons from a new area of study: sustainability issues in higher education. Thus, this study’s broad goal is for this model of organizational factors to be useful as a framework for campus sustainability change agents and scholars.
CHAPTER III

METHODS AND CONSTRUCTS

This chapter describes the constructs and methodology used to test the theoretical framework outlined in Chapter II and produce the results in Chapters IV, V and VI. The chapter begins by outlining the key constructs. The next section outlines the reasons for selecting the quantitative and qualitative methods used to gather data. The final three sections describe the specific methodology for the survey research, comparative case study, and University of Michigan case study (respectively).

Constructs

The first task in preparing to test the theoretical framework outlined in Chapter II is to identify and operationalize the key constructs. These constructs – adapted from the literature described in Chapter II – are used in the survey and case studies described in the following sections and chapters. To organize this subsection and provide the initial input into data analysis, I divided the constructs into independent, mediator and dependent variables. The following are the most important independent variables:

1) **Institutional Demographics**: I obtained demographics on each institution in the sample from the 2001 Higher Education Directory (Rodenhouse 2000), including size, 

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*Case studies” or “case study institutions” refers to both institutions analyzed in the comparative case study (XU and YU) as well as the University of Michigan.*
location (based on four regions: Northeast, South, Midwest and West), degree level offered (bachelors, masters or doctoral), tuition and control (public or private). For the case study institutions, I collected more demographic information during site visits and from the institutions’ websites.

2) **Individual Characteristics:** The final page of the survey (Appendix A) collects data on the number of years the respondent has been involved with the college or university, knowledge level about sustainability (1=very low; 5=very high) and job title. I chose these characteristics based on findings from the campus environmental surveys profiled in Chapter II. Similarly, I asked all interviewees about their professional backgrounds and the history of their affiliation with their college or university.

3) **Political Orientation:** The survey (Appendix A) gathers information on political orientation as part of Question 7 by asking respondents to rate the campus’ general culture and/or reputation using the words “Progressive”, “Liberal” and “Conservative” on a 5-point Likert scale. I thoroughly probed political orientation during case studies through interviews and observations.

4) **Image/Reputation:** Survey respondents rated their institution in terms of “positive internal image” and “positive external image” (Question 7; Appendix A). I thoroughly probed reputation and image during case studies through interview questions and document analysis focusing on perceived and desired views of campuses.

5) **Ethical Orientation:** Survey respondents rated institutional ethics/morality (Question 7; Appendix A). During case studies, my attempts to reveal ethical orientation were largely unsuccessful, as described in Chapters V and VI.

6) **Organizational Structure:** Survey respondents rated their institution in terms of “bureaucratic/hierarchical” and “collaborative” structure (Question 7; Appendix A).

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*vi* Unless otherwise noted, all questions were asked on a 5-point Likert scale with 1=Strongly Disagree, 3=Neutral, and 5=Strongly Agree. Moreover, there are opportunities for “Comments” on all sections of the survey, and therefore all quantitative constructs.
thoroughly probed organizational structure during case studies through observation, interviews and document analysis focused on decision making and interpersonal interactions.

7) **Transformational Leadership**: I shortened and adapted the Transformational Leadership Behavior Inventory (TLI) (Podsakoff et al. 1996) – a validated scale – for use in the survey (Appendix A). Specifically, survey question 8 probes the key concepts of “articulating a vision”, “providing an appropriate model”, “fostering the acceptance of group goals”, and “intellectual stimulation”. I aggregated the answers to form the transformational leadership construct. During case studies, I used multiple questions and observations about the charisma, influence and vision of campus leaders (particularly the President) to derive a deeper understanding of the construct.

The following are mediator variables, defined as variables which account “for the relation between the predictor (independent variable) and the criterion (dependent variable)” (Baron and Kenny 1986). I used these variables as independent and dependent variables (alternatively) in the analysis in Chapter III.

1) **Enlightened Self-Interest Rationale**: As described in Chapter II, the concept of enlightened self-interest (ESI) as a rationale for environmental action comes from the corporate social and environmental responsibility literature (Greeno and Robinson 1992; Gladwin et al. 1995; Whitman 1999). Question 5 of the survey (Appendix A) asks respondents to rate reasons why their college or university pursues environmental initiatives. To operationalize the ESI construct, 7 response categories in Question 5 form the aggregate concept of an ESI rationale: “Benefits to local and global reputation”; “Our institution’s ability to initiate and lead societal change”; “Benefits to work satisfaction/happiness”; “Ethical and/or moral obligations”; “Benefits to student, staff and/or faculty recruitment”; “Our responsibility as a model for individuals and institutions”; and “Strategic market positioning within the educational sector”. During case studies, I asked each interviewee about the reasons for environmental actions. The
responses were categorized as ESI if they focused on ethics or strategic positioning. Moreover, I analyzed documents and made observations on the rationale for pursuing environmental initiatives.

2) **Short-term Rationales**: As presented in Chapter II, the majority of the environmental management literature focuses on cost savings and regulatory compliance as rationales for environmental action. Two response categories of survey question 5 (Appendix A) ask respondents to rate their institution’s use of these rationales for environmental action. The aggregate forms the short-term rationale construct, which I probed indirectly during case studies by inquiring about the reasons for environmental activity or inactivity.

3) **Leadership Commitment Driving Force**: The survey measures leadership commitment (Question 5; Appendix A) by asking if “Commitment of the President” and “Commitment of administrators” are reasons that the campus is pursuing environmental initiatives. I probed leadership commitment during case studies by asking about the perceived and actual commitment of administrators and governing boards.

4) **Stakeholder Driving Forces**: The stakeholders listed in survey question 5 (Appendix A) include those identified by Birnbaum (1988) (as amended by reviewers of the survey): students, faculty, alumni, donors, activist groups, government, and the labor market. Thus, I calculated stakeholder “pressure” from each group individually, and aggregated the results to form the stakeholder driving force construct. In addition, two related sub-questions of survey question 3 ask whether sustainability efforts “come from the top” or “come from the bottom”. I assessed stakeholder pressure indirectly during case studies by asking interviewees and assessing documents for evidence as to who was initiating and leading environmental efforts, probing particularly about faculty and students.

5) **Barriers**: The barriers listed in survey question 6 (Appendix A) come from the sustainability in higher education literature profiled in Chapter II (e.g., Ali Khan, 1999; Campus Consortium for Environmental Excellence, 2000; Chernushenko, 1996; National
Wildlife Federation, 2001; Pennsylvania State University, 1998; Roorda, 2001; University Leaders for a Sustainable Future, 1999) combined my experiences and the literature on higher education management and organizational change. The barriers are individual constructs, and were not aggregated during analysis. I probed barriers extensively from multiple perspectives during case study interviews, observations and document analysis.

I created the most important dependent variables by combining constructs from the campus sustainability assessment tools profiled in Chapter II with the theoretical framework. The dependent variables represent movement toward sustainability (as opposed to achievement of sustainability) since a sustainable campus is not clearly defined in the literature:

1) **Sustainability in Operations**: Part 1 of survey question 1 (Appendix A) includes 15 sub-questions which indicate a sustainable approach to operations. I aggregated the answers to form the quantitative measure of sustainability in operations. Information about environmental responsibility in operations at case study institutions came from documentation, participant observation and interviews.

2) **Sustainability in Curriculum**: Part 2 of survey question 1 (Appendix A) includes nine measures of incorporation of sustainability into curriculum as well as the environmental knowledge and activism of graduates. Questions about the presence or absence of an environmental major, minor or concentration were answered either “Yes” (5) or “No” (1). I aggregated the nine sub-questions to form the sustainability in curriculum quantitative construct. During the case studies, I reviewed course listings and engaged in discussions about the level of and interest in environmental education.

3) **Sustainability in Research**: Part 3 of survey question 1 (Appendix A) includes four measures of sustainability in research, including faculty and student research as well as funding. The aggregate of the four measures forms the sustainable research construct.
thoroughly probed the quantity and areas of environmentally related research on campus during case studies through document analysis and discussions.

4) **Sustainability in Service**: Part 4 of survey question 1 contains five measures of sustainability in service (Appendix A), including community outreach and partnerships as well as campus environmental groups and institutional environmental-leadership positions. The aggregate of the five sub-questions forms the sustainability in service construct. I probed environmentally related service during case studies by meeting with environmental group organizers, examining evidence of outreach events, and inquiring about partnerships.

5) **Sustainability in Policies/Campus-wide Actions**: Survey questions 2 & 3 contain 18 sub-questions on campus-wide policies and actions (Appendix A). The criterion for this construct is that the activities must cut across departmental and other organizational boundaries in terms of their reach and influence. For example, the presence of an environmental mission statement and environmental reporting is included along with sustainability training and perceptions of the sustainability of the campus. All the sub-questions are on a 1-5 Likert scale, except for “My campus has signed external Declarations on sustainability” (which is “yes” (5) or “no” (1)). The aggregate of the 18 sub-questions forms the sustainability in policies/campus-wide actions construct. I assessed this construct during case studies by looking for evidence of institutionalized, campus-wide activities.

6) **Sustainability-Leadership Scale/Score (SLS)**: Chapter IV describes this construct – which is the key dependent variable for the majority of quantitative analysis – in detail. In brief, SLS is the weighted average of the five other dependent variables. Weighting is based on perceived expertise of the respondents. SLS represents the overall institutional sustainability rating from the survey. Similarly, survey question 4 (Appendix A) measures overall campus environmental efforts directly on a 1-7 scale (1=No Initiatives; 7=Comprehensive, Holistic, Long-term Sustainability Program) and three sub-questions
of survey question 3 (Appendix A) ask whether administrators emphasize economic, social or ecological consequences during decision making. The answers to these questions were not used directly as dependent variables, but rather as ways to validate SLS. While the case studies did not assess all components of SLS directly, one major goal of site visits, document analysis, participation observation and other forms of qualitative analysis was to determine the overall level of environmental or sustainability activity on the campus. Chapters V and VI provide qualitative ratings of the sustainability efforts of the case study institutions.

**Methodological Rationale**

This study uses multiple methods to answer the research questions presented in Chapters I and II. The benefits of methodological pluralism or “triangulation” (Jick 1979) are well documented in a wide range of literatures, and represent an emerging consensus in many fields. For example, Campbell (1975, p. 191) wrote: “Man is, in his ordinary way, a very competent knower, and qualitative common-sense knowing is not replaced by quantitative knowing. Rather, quantitative knowing has to trust and build on the qualitative.” As King, Keohane & Verba (1994, p. 5-6) wrote: “neither quantitative nor qualitative research is superior to the other, regardless of the research problems being addressed.” Greene and Caracelli (1997, p. 7) conclude: “There is wide consensus that mixing different types of methods at the technical level, or the level of method, is not problematic and can often strengthen a given study.” Simply put, “Multiple viewpoints allow for greater accuracy” (Jick 1979). Clearly, a mixed methodological approach is the preferred option for many researchers in diverse fields.

Specifically for this study, the rationale for a mixed qualitative-quantitative methodological approach stems from research gaps as well as the nature of the problem being assessed. The lack of quantitative evidence about motivations, strategies and outcomes related to sustainability management in higher education was highlighted in
Chapter II. Although case studies and personal anecdotes are prevalent in the literature, few universities have been assessed in terms of sustainability using rigorous research methods. Moreover, there is no unified theory of sustainability management in higher education. In an area of research with little theoretical and empirical work, reliance upon a single method of data collection and analysis would be unwise because there is not enough background information to analyze any approach in isolation. As stated by Walton et al. (2000, p. 518): “Survey data viewed in isolation would throw little light on the complexity and interrelationships found in each institution.” Quantitative research is needed to help establish baseline data and generate causal hypotheses. Qualitative research is needed to test patterns of causation as well as explain unexpected results. Therefore, this study uses three complementary methods: surveying, a comparative case study from an “outside” perspective, and a single case study based on participant observation. As King, Keohane and Verba (1994, p. 5) wrote, “Most research does not fit clearly into one category or another. The best often combines features of each … If we are to understand the rapidly changing social world, we will need to include information that cannot be easily quantified as well as that which can.”

Each of the three methodological approaches has complementary strengths and limitations (Table 3.1). Survey research provides the greatest breadth of coverage because of the ability to send surveys to many individuals at many institutions. Surveys require the researcher to be very specific about concepts and measures. Moreover, surveys and subsequent quantitative analysis are often perceived to be the most objective method because the researcher is not present during data collection, which reinforces anonymity. As Boyd and Hyman (1975, p. 268) claim: “Surveys provide data on a large number of people in their varied and normal life settings. They provide quantifiable measures on a notable range of behaviors and beliefs.” However, surveys cannot achieve the level of depth possible with more “hands-on” methods. Filling out standardized questions does not provide context or opportunities to explore and expand unanticipated
or particularly relevant areas of interest. “Precise quantitative approaches that focus on
selected subsets of variables necessarily ‘strip’ from consideration, through appropriate
controls or randomization, other variables that exist in the context that might, if allowed
to exert their effects, greatly alter findings,” wrote Guba and Lincoln (1994, p. 106). The
lack of interaction between the respondent and researcher in survey research can lead to
misinterpretations (Suchman and Jordan 1992). Moreover, as pointed out by Kish (1970)
and many others, correlations found in surveys do not necessarily imply or prove
causation. Statistical significance determined by survey data tends to look more
definitive than qualitative research, but in fact relies upon researcher assumptions and
other inputs. Finally, surveys typically capture “snapshots” because questions inevitably
emphasize current issues as opposed to a historical perspective.

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A comparative case study by a researcher largely unfamiliar with the participants
and institution provides a middle ground between surveys and participant observation
(Table 3.1). Generally, “comparative study is simply the study of numerous cases along
the same lines, with a view to reporting and interpreting numerous measures on the same
variables of different ‘individuals’,” wrote Eckstein (1975, p. 85). In this case, the
comparative case study was conducted with two institutions through onsite interviews,
document analysis and direct observations, following the example of Yin (1994).
Compared to surveys, the comparative case study provides less breadth of coverage (i.e., two institutions compared to 56) and is perceived to be less objective, but provides more in-depth analysis and covers a longer timeframe. Compared to a single case study based on participant observation, the comparative case study provides more breadth of coverage and more objectivity, but less depth and a shorter timeframe. Typically, the researcher is immersed in a comparative study for a short period of time and does not significantly influence outcomes. However, the researcher interacts with many stakeholders and obtains in-depth knowledge on selected topic areas, which is particularly important in an area without a large body of previous research (Aberbach et al. 1975). Comparing institutions provides opportunities to explore hypotheses based on institutional similarities and differences. However, as pointed out by Lijphart (1971, p. 684), “The number of cases it (the comparative method) deals with is too small to permit systematic control.” Generalization from a comparative case study is fraught with difficulty because the number of variables is often large while the number of cases is small. Overall, the comparative case study is a useful strategy to bridge the gap between surveys and a single case study. “Comparison sharpens our powers of description and can be an invaluable stimulus to concept formation. It provides criteria for testing hypotheses and contributes to the inductive discovery of new hypotheses and to theory building,” wrote Collier (1991, p. 7). As stated by Yin (1994, p. 1): “Case studies are the preferred strategy when ‘how’ or ‘why’ questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context.”

Participant observation of a single case offers unparalleled opportunities for in-depth analysis over a long period (Table 3.1). “The great advantage of the case study is that by focusing on a single case, that case can be intensively examined,” wrote Lijphart (1971, p. 691). Achen and Snidal (1989, p. 168) claim: “Case studies are an important complement to both theory-building and statistical investigations…they allow a close
examination of historical sequences in the search for causal processes.” There is no substitute for participating in the phenomena under observation in terms of opportunities to explore the issues from many perspectives and angles. Case studies allow exploration of a broad range of variables because they are “much more open-ended and flexible at all stages” (Eckstein 1975, p. 81). This depth of exploration is particularly important in studies that rely more on hypothesis generation than hypothesis testing, such as this research. “Research based on participant observation is likely to have an exploratory emphasis,” wrote Fenno (1978, p. 250). Achen and Snidal (1989, p. 169) conclude: “Case studies provide guidance in the revision and reformulation of analytic theory to account for a broader range of phenomena.” However, immersion in the case study tends to lead to a loss of objectivity because the researcher inevitably forms opinions and conceptions that creep into the analysis, often in unintended and unnoticed ways. Moreover, the time requirements of participant observation preclude the researcher from analyzing a broad range of other institutions and individuals. Finally, exceptional events that occur during a participant observation case study can be overemphasized in analysis. As pointed out by Achen and Snidal (1989, p. 146), “Even though single case studies provide interesting insights, they do not by themselves provide clear guidance for generalization to other cases.”

This dissertation combines survey research with a comparative case study and participation observation case study to fully explore the research questions using methodological triangulation. The assumption is that there is no “right” or “perfect” research design. As Perrin (2000) claims: “The best way to control for the inherent biases and limitations of any single method is to use a range of complementary methods…In particular, we can have the greatest confidence in the findings when different types of methods, such as a mix of quantitative and qualitative methods, are used.” This dissertation follows a “three-tier” approach. I use survey research as the first tier to establish a baseline level of knowledge and identify potential case study
institutions. A comparative case study is used as the second tier to explore potential differences between campus sustainability-leaders and laggards. A participant-observation based single case study is used as the third tier to explore issues that require long-term and in-depth analysis.

Survey Research

This section describes the process of survey formation and implementation by outlining the instrumentation, procedure, sample, respondents and data analysis methods.

Instrumentation

The “Campus Environmental Sustainability Survey” constructed for this study (Appendix A) follows the theoretical framework outlined in Chapter II and depicted graphically in Figures 2.1 and 2.2. The survey measures each construct outlined in the first section of this chapter. The basic structure analyzes organizational conditions and leadership, rationale behind environmental/sustainability-leadership, barriers, drivers and cross-departmental ecological outcomes. To create the survey, I conducted an extensive review of current assessment tools for sustainability in higher education, as outlined in Chapter II. The survey questions are based on my interpretations and adaptations of the most useful and relevant questions from past surveys. In this manner, I developed a comprehensive listing of possible constructs/questions, and converted this list into survey questions. However, questions 7 & 8 deviate from this practice because they are derived more generally from the organizational culture literature (7) and specifically from the Transformational Leadership Behavior Inventory (TLI) (Podsakoff et al. 1996) (8), as explained in the constructs sub-section. Overall, the survey combines existing instrumentation with unique measures. Because most colleges and universities do not
have environmental audit data and because I sought data on motivations and processes, the survey relies on qualitative self-assessments of institutions.

In terms of the mechanics of question formation, I closely followed the guidelines in Fowler’s seminal work (1995). Specifically, I paid close attention to question wording, order, interpretation, response options and potential for social desirability bias (Schwarz et al. 1998). Following the advice of Fowler (1995), the goal of each question is to produce consistent results in terms of respondent and research comprehension, which increases potential for generalizability and ensures internal validity. The most important constructs consist of multiple measures to ensure accuracy and comprehension.

The vast majority of questions were scored on a 5-point Likert scale (1=Strongly Disagree; 3=Neutral; 5=Strongly Disagree). Since many respondents were not knowledgeable about all areas covered by the survey, a “don’t know” option (9) was included for all questions, and each question had space for open-ended comments.

The first page received by potential respondents included a cover letter (front) and “sustainability definitions” (back) (Appendix A). The cover letter provides background to the study, the researchers’ institutional affiliations (including the co-sponsor – University Leaders for a Sustainable Future), the requirements and protections of participation, and the potential benefits of returning the survey. The letter was carefully constructed to encourage participation without increasing possibilities for social desirability bias. At the suggestion of reviewers and following the “Sustainability Assessment Questionnaire” (University Leaders for a Sustainable Future 1999), I included the “sustainability definitions” to reduce confusion and limit the survey to “environmental sustainability”, defined as “comprehensive, holistic initiatives oriented toward eliminating negative and increasing positive present and future ecological impacts.”
Procedures

Following guidelines provided by Fowler, the survey underwent “field pretests under realistic conditions” (1995, p. 5). In this case, I sent survey drafts (April 2001) to University of Michigan faculty, staff, students and administrators who were in positions targeted at institutions that have signed the Talloires Declaration. Survey drafts were also sent to: colleagues at other institutions (which are not Talloires Declaration signatories) who have an interest in sustainability in higher education; experts on sustainability in higher education in the nonprofit and consulting sectors; survey experts at the University of Michigan; and the researcher’s dissertation committee members. Overall, I received comments from approximately 20 individuals.

I submitted the survey to the University of Michigan’s Institutional Review Board to ensure that respondents were fully informed about confidentiality, potential benefits and risks of participation, time requirements, the right to withdraw responses, and the voluntary nature of the study. These elements were included in the survey cover letter (Appendix A), and were approved by the Institutional Review Board in May 2001. The survey gathered respondent names (optionally) to clarify answers, identify potential case studies and to provide a confidential summary of results, as explained in the cover letter. However, follow-up occurred rarely and only if respondents explicitly indicated that this was acceptable (See Question 5 on the “Background Information” section of the survey).

I sent the surveys the week of May 28, 2001 with a self-addressed, stamped return envelope to encourage response by June 25, 2001. Typically, potential respondents received only one copy of the survey. However, if a potential member of the sample could not be located (see the next subsection for a discussion of the sample), I sent multiple surveys in one large envelope with separate sealed envelopes enclosed. For example, an extra copy of the survey was sent to the senior academic affairs officer addressed to “Faculty Senate President” if this individual could not be located directly.
Initial mailings were followed by e-mail on June 22, 2001 if responses were not received and contact information was available (see Appendix A for a copy of the e-mail text). The first e-mail was followed by a phone call (from myself or an undergraduate research assistant) during July/August 2001 explaining the study, requesting participation, and offering to send additional survey copies. I sent a second follow-up e-mail during July 2001 (see Appendix A for a copy of the e-mail text). Because of these follow-up procedures, many more surveys were distributed and additional information was obtained from many institutions. Moreover, a distribution list for survey and case study results was created.

Sample

I established the “target population” (Schuman and Kalton 1985) at both an institutional and individual level. At the institutional level, the survey targeted the 59 colleges and universities in the United States whose presidents signed the Talloires Declaration, as located through the Talloires Declaration Secretariat – University Leaders for a Sustainable Future (Table 3.2) (see Chapter II for a discussion of the Declaration). This institutional sample is “purposive” and “nonrandom” (Schwarz et al. 1998), which was necessary – despite the disadvantages in terms of generalizability – because a random sample of U.S. institutions of higher education would not yield useful results since few institutions are deeply engaged in environmental issues. In other words, a randomly selected group of institutions would display little variability in environmental-leadership because most institutions would exhibit no leadership. As pointed out by Achens & Snidal (1989, p. 162), “There is nothing wrong with nonrandom samples so long as they are not treated as random.”

I chose Talloires Declaration signatories as the institutional sample (as opposed to another nonrandom sampling frame) in order to ensure variability in sustainability-
leadership and to provide a manageable institutional sample size. While Declaration signatories include many “predisposed institutions”, signatories vary considerably in terms of sustainability initiatives, according to literature searches and conversations with scholars and nonprofit leaders. As reported by Walton et al. (2000), signatories “varied in their size, age, funding and length of time since signing the Talloires Declaration.” The common thread is that the former or current President of each institution signed this Declaration at some point in the past 12 years. Compared to the average of all U.S. institutions of higher education (Brownstein 2000; Rodenhouse 2000; Mondragon 2001;
Population Division of the United States Bureau of the Census 2001), Talloires Declaration signatories are statistically biased toward being public institutions. 63% of signatories are public while only 26% of all campuses are public (Table 3.3). Similarly, Talloires Declaration signatories are statistically larger, cost less, and grant higher degrees (i.e., doctorates) than the average U.S. college or university. Although the difference is not statistically significant, signatories tend to be located in the South, as opposed to the Midwest and West, when compared with all U.S. institutions. Overall, while Talloires Declaration signatory institutions are demographically diverse, they do not represent a statistically random sample of U.S. 4-year institutions. Chapter VI re-examines this bias in the context of a discussion of the relevance and applicability of the research results.

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<th>Table 3.3: Comparison of Talloires Declaration Signatories to All U.S. 4-Year Institutions</th>
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In terms of sampling frame (Schwarz et al. 1998) at the sample institutions, I sent the survey to 9-13 individuals at each college or university. At every institution, I sent surveys to the President/Chancellor, senior academic affairs officer, senior business
officer, senior operational officer, senior student affairs officer, director of environmental health, energy coordinator, president of faculty senate, and president of student government. I also sent surveys to the environmental coordinator, recycling coordinator, dean/director of environmental studies, and president of student environmental group if these positions existed at the institution. Generally, I obtained the names and addresses of senior officers from the 2001 Higher Education Directory (Rodenhouse 2000). Recycling coordinators were identified from a listing of members of the College and University division of the National Recycling Coalition. Environmental coordinators were identified through an informal list kept by the sustainability coordinator at Michigan State University. Heads of environmental programs were identified through a listing produced by Romero et al. (2000). Student environmental group presidents were identified through listings on the Student Environmental Action Campaign website (www.seac.org) and other similar websites. I obtained the remaining names through extensive searches of institutional websites and through phone calls. In this way, names were attached to 78% of the positions originally identified in the sample. The remaining 149 surveys were addressed with titles and institutional address only.

Respondents

Of the 687 valid surveys sent to 59 institutions, 249 individual surveys were returned (36%) from 56 institutions (95%). Of the 13 targeted positions, environmental coordinators, deans/directors of environmental studies, senior academic affairs officers and senior operations officers had the highest response rates while presidents of student environmental groups, energy coordinators, presidents of student government and senior

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vii Valid is defined as sent to a unique individual at a unique position. If either the individual or position did not exist (as determined through returned surveys and follow-up), the survey was not considered to be valid. Therefore, the total number of survey sent was 710, but the valid number was 687.
business officers had the lowest rates (Figure 3.1). However, these response rates should be treated with caution because not all institutions had individuals at all targeted positions, and if individuals had responsibility for multiple positions (e.g., senior operations officer and energy coordinator), I credited the surveys to the higher-level position. If positions were of equal status, surveys were credited to the more environmentally-oriented position. Moreover, since I conducted the survey during the spring/summer, faculty members and students are underrepresented relative to administrators. Chapters IV and VII explore potential bias based on response from different positions at different institutions.

The number of respondents per institution ranged from 1 to 10 with a mean of 4.45 and a standard deviation of 2.03 (Figure 3.2). Over 80% of the responding institutions returned three or more surveys. The respondents vary greatly in the time they have been associated with their college or university (mean=12 years; standard deviation=10 years). Respondents show medium to high levels of sustainability awareness (mean=3.37; standard deviation=1.01; 1=very low, 5=very high) (Figure 3.3). Only six of the 224 respondents answering this question (3%) rated themselves very low in sustainability awareness. Overall, response rates and respondent distribution for the survey compare favorably with similar studies profiled in Chapter II.

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Respondents are either the individual in the position or their designated representative.
Figure 3.1: Survey Response Rates by Job Classification

Figure 3.2: Survey Responses Per Institution
Data Analysis

I no longer accepted survey responses after September 15, 2001. Survey responses were entered into a computer database created in the statistical program SPSS 9.0 by myself and an undergraduate research assistant. The surveys were stored physically according to institution and position. The data was cleaned by scanning for aberrant scores and double-checking these responses against the original surveys. The first analysis task consisted of creating a database that aggregated individual responses into institutional responses either by averaging or – in the case of sustainability-leadership scale/score (explained in detail in Chapter IV) – weighted averaging. In this manner, I created a database with 249 individual responses and a database with 56 institutional responses. I conducted the majority of analysis on the institutional database by using Pearson’s correlations and multi-variate regression between and among the
independent, mediator and dependent variables to test the relationships hypothesized in the theoretical framework. The specific tests and results are explained in Chapter IV.

**Comparative Case Study**

As opposed to the largely positivist approach embodied in the survey, the comparative case study methodology leans more toward “naturalist” research. As described by Lincoln (1985), naturalist research emphasizes the study of phenomena in their natural setting through an open-ended, qualitative processes. Portrayed as the best way to use the comparative method by Lijphart (1971, p. 687), this study includes two “comparable” cases which are “similar in a large number of important characteristics (variables) which one wants to treat as constants, but dissimilar as far as those variables are concerned which one wants to relate to each other.” In this case, the similar important characteristics are demographic while the environmentally-related variables are dissimilar. The research methodology for each institution is parallel, as described in the following two subsections. I analyzed each institution independently (using document analysis, interviews and direct observation), and then compared the campuses, focusing on convergent and divergent themes.

**Selection of Institutions**

Institution X and Institution Y are ideal case studies and complements to each other for four reasons. First, Institution X scored high on the Sustainability-Leadership Scale/Score (3.93 - 7th highest out of 56 institutions; mean=3.33) discussed previously in this chapter and in Chapter IV. This high score – corroborated by discussions with nonprofit leaders and anecdotal evidence – indicates that Institution X is a leader from which important lessons can be drawn. Institution Y scored very low on the Sustainability-Leadership Scale/Score (2.45 - 5th lowest out of 56 institutions;
mean=3.33), which makes comparisons with XU analytically rich. Second, both XU and YU are moderate-size public institutions in the Midwest. As discussed in Chapter IV, demographic characteristics are not statistically significant predictors of sustainability-leadership outcomes. Therefore, there is no \textit{a priori} reason for case study selection based on demographics, and selecting “middle of the road” institutions in terms of location, size and academic quality offers advantages in terms of generalization. Moreover, many institutions in the sample at different stages of sustainability-leadership are also moderate-size Midwestern institutions, which increases opportunities for comparisons and helps ensure confidentiality. Selecting two institutions with similar demographic characteristics controls for the maximum number of non-environmental variables. Therefore, differences in environmental approaches and outcomes can be more accurately pinpointed on specific organizational conditions, strategies and stakeholders as opposed to external influences and demographics.

Third, both XU and YU are in interesting and analytically rich stages in their environmental efforts. XU has thoroughly documented the process of advancing environmental issues at the institutional level, which provides a window into organizational decision making unavailable at most other institutions. YU is beginning to coordinate the small-scale, scattered efforts currently underway at YU. Fourth, both XU and YU were willing and receptive case study hosts, which facilitated access to individuals, groups and information. Stakeholders at XU were eager to share success stories, while there were interested and opinionated individuals willing to be interviewed at YU, in part because of emerging environmental interest on the campus.

\textbf{Methodology}

The case study methodology is qualitative, expanding on the techniques used by Gioia and Thomas (1996) to study “sensemaking during strategic change in academia” by
relying upon three main sources of data: documentation, direct observation and interviews (Yin 1994). I conducted onsite methods during four days in October 2001 at Institution X and three days in November 2001 at Institution Y. The documents analyzed relate specifically to campus environmental initiatives (including comments on returned surveys) as well as generally to campus planning and policies. In Institution X, campus environmental efforts are well documented, with a website containing process and content documents (over 100 pages) from the past 12 years, including reports, agendas, summaries and presentations given at forums on environmental issues and at committee meetings. This website also includes the names of past and present participants in XU’s environmental initiatives. Campus-wide planning documents collected online and onsite added a broad perspective on institutional strategic planning.

Since Institution Y does not have an established, cross-functional environmental initiative, there were few documents to analyze. Before the site visit, I reviewed campus websites relating to environmental initiatives, including sites for the Environmental Center, Environmental Health Program, and Department of Environmental Health & Safety. Moreover, I assessed websites relating generally to organizational structure and mission as well as Presidential initiatives to determine congruence with and priority of environmental issues. Onsite, I obtained and assessed three unpublished documents relating directly to environmental issues: the “Greening the Campus” proposal developed in 1997, a current proposal for an environmental living-learning center, and a letter sent to the President (April 2001) from 15 faculty requesting action on the Talloires Declaration. Finally, the comments and content of the five surveys from YU provided insight into campus culture as well as the importance and history of environmental issues.

At both institutions, I paid particular attention to the use of the term sustainability or sustainable development. Overall, the documents analyzed at XU and YU provided the background necessary to conduct interviews effectively as well as to establish a basic understanding of and context for the organizational environmental history. As stated by
Masland (1985, p. 164), “document analysis is an efficient method of gathering background information on the college. It is well suited for collecting data on institutional history.”

Masland (1985, p. 164) claims: “Through observation one can learn which issues receive careful attention and close scrutiny.” I conducted observations of XU’s and YU’s sustainability efforts during onsite visits. In terms of formal observation at Institution X, I attended a meeting of the campus-wide environmental steering committee (ESC) during which this research project was formally introduced. Moreover, as per the request of the ESC chair, all committee members received the summary of this research project shown in Appendix B. The ESC includes a cross-section of stakeholders and approximately half of the case study interviewees. Formal observations at YU were limited because of the absence of a committee or meetings to observe and analyze. In terms of informal observation, at both Institutions, I sought visible signs of environmental efforts and the physical environment of the campus. For example, I noted the presence of recycling bins as well as publicly posted information regarding environmental groups, classes and other activities. I observed the landscape of the campus, including the presence of parking lots, manicured lawns, and natural areas. Moreover, I observed the general level of “activism” on the campus through informal analysis of students and information in areas such as eating establishments and the student union. The goal of these informal observations was to obtain a subjective impression of the institution, students and physical environment. Therefore, the observations provided context and questions for the interviews by assessing the general “feel” of the campus and the visibility and content of environmental initiatives.

Interviews were the main and most important source of case study data. I selected interviewees in part based on involvement in environmental initiatives. Therefore, I approached many members and leaders of the campus environmental committees and groups (past and present) as well as individuals identified by others as active on
environmental issues. Moreover, I approached individuals targeted by the survey. In the initial e-mail sent to these individuals, I briefly explained this research, requested an interview, and requested the names of other potential interviewees. If there was no response to the initial e-mail, targeted individuals received a follow-up e-mail and phone call. Moreover, at the end of each interview, I asked each interviewee to provide names of other individuals to interview. By following this “snowball sample” technique (Masland 1985), I contacted 25 individuals at XU and 29 at YU. At XU, I received 23 responses, and conducted 21 interviews at places of the interviewee’s choosing or via phone or e-mail if personal visits could not be arranged. At YU, I received 17 responses and conducted 15 interviews. The 21 interviewees at XU had the following responsibilities: faculty with official environmental leadership positions (e.g., a committee chair) (5); students involved in environmental committees or other related activities (4; 2 undergraduates and 2 graduate students); senior administrators (4); staff members with environmental responsibility (4); and faculty members involved in campus environmental committees (3). The 15 interviewees at YU had the following responsibilities: operations staff (3); administrators (2); faculty with administrative responsibilities (2); faculty without administrative responsibilities (2); instructors (2); graduate students (2); and undergraduate students (2).

I conducted the interviews – which averaged approximately 1 hour in length – in a semi-structured format. Following the model of Aberbach, Chesney and Rockman (1975), the interviews were “open-ended and the discussions were often wide-ranging”. The style was “conversational” in order to elicit “thoughtful” and “complex” answers. “Open-ended procedures emphasize the contextual richness of response and allow for the exploration of subtlety and nuance; they enable an investigator to assess not just the surface content of a response but also the reasoning and premises underlying it,” wrote Aberbach et al. (1975, p. 3). I began the interviews at XU by reviewing a consent form (Appendix B), which assured confidentiality and requested permission to record the
interaction. If the interviewee consented (as 18 out of 21 did), the interview was recorded on an audiotape. At YU, I followed a similar procedure although did not request permission to tape the interviews, due to the more controversial and less well-developed nature of environmental initiatives.

The content of the interviews at each campus varied according to the individual’s position and the flow of the conversation. However, the structure of the interviews typically followed the survey instrument and theoretical framework by addressing organizational conditions and leadership, drivers, rationales, barriers, vision and outcomes of environmental sustainability efforts. I paid particular attention to the institutional history of sustainability management and the perceived benefits and costs of environmental initiatives. Appendix B lists the general questions that I tailored to each interviewee and institution. Not all questions were asked of all interviewees; I established priority areas to thoroughly assess during the interview. Moreover, I allowed interviews to flow in unanticipated yet useful directions, within the bounds of the research questions. In addition, the interviews changed slightly over time. The first interviews at each institution focused more on obtaining the institutional history and position of environmental issues because the background documentation was not adequate to provide this framework. Subsequent interviews focused more on processes, motivations and prospects for campus environmental actions. The analysis of these interviews – along with the documents and observations – followed an open-ended, thematic approach (Masland 1985), focusing on convergent themes that relate to the theoretical framework.

**Case Study of the University of Michigan**

I have been on the Ann Arbor campus of the University of Michigan as a student, instructor, part-time staff member, researcher and activist focusing on campus environmental issues from 1997-2002. These experiences provide the basis for the in-
depth case study based on participant observation and document analysis described in Chapter VI. The following two subsections describe the reasons for selecting the University of Michigan as a case study and the methodology used.

Selection

The University of Michigan\textsuperscript{ix} is not a Talloires Declaration signatory and consequently is not in the survey sample. Michigan is one of largest institutions of higher education in the United States, and thus has complicated and unique decision making structures. Despite a long history of environmental education, research and activism, Michigan has scattered and poorly documented environmental initiatives and programs. Therefore, Michigan does not appear to be an ideal case study based on the criteria established for the two case studies in the previous chapters. However, Michigan has a major advantage for studying environmental organizational change in higher education: I have acquired in-depth knowledge through five years as a master’s and doctoral student, activist, environmental program manager in University Housing, research assistant to the Environmental Faculty Group (Fall 2000), member of the School of Natural Resources & Environment’s Executive Committee (1999-2000), master’s thesis researcher on sustainability management in Michigan’s University Housing Division (Shriberg 1999; Shriberg 2000) and co-instructor for “Environmental Studies 391: Sustainability & the Campus”. Therefore, this case study reflects a level of depth and immersion impossible or impractical to obtain through site visits.

This in-depth knowledge and personal involvement facilitate exploration of difficult and interesting questions raised by the theoretical framework, survey and comparative case study. Moreover, U of M is a complex, decentralized campus, which

\textsuperscript{ix} Unless otherwise noted, the “University of Michigan”, “Michigan”, and “U of M” refer to the Ann Arbor campus, which contains 38,000 of the 53,000 students in the University of Michigan system.
allows for rich analysis and examination from multiple perspectives. Finally, as pointed out by Eckstein (1975, p. 121), “The most manifest practical advantage of case study is, of course, that it is economical for all resources: money, manpower, time, effort.” Eckstein (p. 132) continues, “And not the least advantage of crucial case studies is that they may permit one to study attractive or convenient cases without sacrifice of disciplinary conscience.” Therefore, despite the disadvantages due to large size and potential researcher bias, I chose U of M because of the unparalleled opportunity for first-hand detailed and contextual analysis of the organizational change for sustainability process.

Methodology

The primary source of information for this case study is participant observation, defined by Emerson, Fretz and Shaw (1995, p. 1) as when an “ethnographer participates in the daily routines of the setting, develops ongoing relations with the people in it, and observes all the while what is going on…The ethnographer writes down in regular, systematic ways what she observes and learns.” This approach can also be described as “action research”, which is “an approach to research which aims at both taking action and creating knowledge or theory about that action (Coghlan and Brannick 2001).” This case study focuses on the period beginning in September 1997 and ending in December 2001, although references to earlier and later events are provided as needed. During this time period, I kept copious notes on many events and meetings with the intention of constructing a case study. According to Emerson, Fretz and Shaw (1995, p. 11), these “fieldnotes” on “what is observed and ultimately treated as ‘data’ or ‘findings’ is inseparable from the observational process.” Therefore, one of the primary sources of information is this documentation of content, process, outcomes and opinions about Michigan’s path toward sustainability. A large subset of these notes comes from
discussions involving the Sustainable University of Michigan Team (Sustainable U of M), of which I am a co-founder and active member. The meetings include internal group organizing gatherings, discussions with other activist groups, conversations with faculty and others to enlist support, and at least 20 meetings between Team members and environmental decision makers (ranging from the President and Provost to automobile-fleet and facilities managers). These discussions often explicitly addressed aspects of the theoretical framework for this research (such as motivations for environmental actions), and always implicitly addressed challenges and prospects of moving the campus toward sustainability.

I have participated in many discussions and activities relating to environmental issues in University Housing, as co-chair of the Housing sustainability oversight committee and as a part-time environmental coordinator in Housing since September 1997. The oversight committee includes representatives from Dining Services, Housing Information, Housing Facilities, Residence Education, and several student groups. Diverse perspectives on operational greening as well as student interest in environmental issues are represented. Moreover, I have led sustainability training sessions and had many conversations with Housing staff and related individuals, such as purchasing agents and living-learning directors.

I am co-instructor and co-creator of a course entitled “Sustainability and the Campus”. This course invites campus environmental managers to address campus ecology and lead field trips to sites with environmental implications, such as the campus power plant and community recycling center. As the major project for the course, the students work in groups with a staff member on an environmental project, such as increasing organic foods in the Dining Hall or initiating an environmental education program in Family Housing. By facilitating these experiences, the author gained additional first-hand knowledge of campus environmental decision making.
My experience as a research assistant for the Faculty Environmental Steering Committee provides an additional perspective on academic sustainability. While this experience was brief (Fall 2000), the interaction with faculty attempting to promote cross-disciplinary sustainability teaching and research was useful, particularly in identifying rationales and barriers to such activities. I remain on the group’s e-mail list, and continue to monitor progress.

The second main source of data for the Michigan case study is the documents produced over the past five years providing insight into environmental decision making. For example, articles relating to environmental issues have appeared in the *Michigan Daily* (the main student newspaper; e.g., Rosenbaum 2001), *University Record* (a university-produced faculty and staff paper; e.g., Maddix 2001) as well as the *Ann Arbor News* and *Detroit Free Press*. Conference papers and presentations generated from the Sustainable U of M Team (e.g., Shriberg 2001), University Housing (e.g., Shriberg 2000), and the Department of Occupational Safety & Environmental Health also provide valuable inputs, particularly relating to the greening process. I analyzed University websites – such as sites maintained by the School of Natural Resources & Environment (www.snre.umich.edu), the Sustainable U of M Team (www.sustainum.org), and the Department of Occupational Safety & Health (www.umich.edu/~oseh) – to provide insight into current initiatives, priorities, and communications strategies. I analyzed promotional materials from the University Information Services, Energy Management Department, School of Natural Resources & Environment, and Department of Occupational Safety & Environmental Health to discern outreach strategies and rationales for environmental programs.

I assessed unpublished reports about campus environmental activities for information, strategies and perceptions, particularly Bernard and Reppe’s assessment of incorporation of sustainability into curriculum (Bernard and Reppe 2001) and the Provost’s Advisory Council on the Environment’s report on environmental research and
education (Provost’s Advisory Council on the Environment 2000). Similarly, I scrutinized environmental activist materials such as: letters to donors, President Bollinger, and other administrators; minutes from Sustainable U of M Team and Environmental Issues Committee meetings; calls for environmental action such as the Sustainable U of M Proposal; and memoranda that provide updates on (and critiques of) university environmental actions and strategies. Finally, I assessed communications between activists, faculty, staff, administrators, and outside entities.

My personal involvement required the Michigan case study to rely on subjective impressions. The first issue that this approach raises is researcher bias. “Observations are always molded by prior conceptions, and when the observations concern matters on which there is strong feeling, it may be more appropriate to speak of preconceptions or even prejudices,” wrote Kaplan (1964). While this bias is inevitable, I attempted to adopt a broad, detached approach to analysis that differs from my roles as an activist, student, instructor, and staff member. In a broader context, problems associated with researcher bias are minimized because this case study is only one input into the conclusions generated from this study.

The second major issue with this case study is confidentiality, which is particularly problematic because institutional confidentiality is impossible given my affiliation and the fact that much information was gathered in a context other than academic research. I handled this issue using a common-sense approach that refrains from naming individuals unless the information is publicly available and non-sensitive. In other words, the standard is to provide specific information that can be linked to an individual only if an “outside” academic researcher could obtain this same information through public sources. The confidentiality issue is alleviated by the fact that Michigan is a public institution and most documents are accessible to the public. In any case, every attempt was made to ensure confidentiality and to refrain from sharing information that could be considered sensitive.
The third major issue with the Michigan case study methodology is that the lack of “objective” data provides few opportunities to test the author’s assumptions against other perceptions. Since U of M is not a Talloires Declaration signatory and therefore was not surveyed, there is no standard against which to compare the qualitative, impression-based data gathered through participant observation and document analysis. One approach to alleviate this problem could have been to survey and interview decision makers at Michigan explicitly for this case study. However, given my involvement in environmental issues (particularly in terms of activism), the results (and return rates) from these surveys and interviews would have been questionable. Therefore, I did not pursue this approach. This potential weakness is partially offset by my multiple roles on campus, as well as the fact that this case study is only one source of data used to answer the research questions.

The fourth and final potential limitation in conducting participant observation research is the increased potential for the insidious effects of politics. As Coghlan and Brannick (2001, p. 63) state: “Raising certain questions and applying judgments to particular issues may have severe political implications. Therefore, doing action research in your own organization is political. Indeed it might be considered subversive.” There is no clear solution to this problem besides being aware of political considerations and the related potential biases. In general, despite potential weaknesses, the unparalleled opportunity for in-depth assessment of Michigan provides a strong rationale for the participant observation and document analysis methodology.
CHAPTER IV

SURVEY RESULTS

This chapter presents the results of the “campus environmental sustainability-leadership survey”, which I sent to 9-13 individuals at each U.S. colleges or university that signed the Talloires Declaration in May 2001 (see Chapter III for information on the methodology). The chapter begins with an overview of univariate results for key variables. The next sections describe the key dependent variable – institutional sustainability-leadership scale/score – and present the results relating to organizational conditions such as ethics, image, culture and leadership style. Next, results relating to the drivers, rationales and barriers for environmental action are analyzed, followed by a regression analysis relating the most important predictor variables to the outcome variable of sustainability-leadership. The chapter concludes by disaggregating the components of sustainability-leadership, and conducting multiple sensitivity analyses to test the robustness of the results. The major finding of the survey is that transformational leaders, collaborative approach to decision making and pursuing sustainability based on long-term strategic and ethical benefits lead to the most robust sustainability programs and strongest leadership positions.
Response Overview

This section provides an overview of the data analyzed in-depth in the following sections. Data is presented at two levels: individual and institutional. I analyzed individual data directly from the 249 returned surveys, without accounting for collinearity problems due to multiple responses from single institutions. Therefore, analysis on individual data is largely limited to uni-variate statistics on perceptual questions where responses may vary within an institution (Table 4.1). Institutional data represents the average (or weighted average) of individual scores at each college or university for selected variables. The bulk of the analysis in this chapter uses institutional data, which eliminates collinearity problems, but reduces effective sample size to 56 (the number of responding institutions).

<p>| Table 4.1: Descriptive Statistics (from Individual Survey Respondents) |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|</p>
<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformational Leadership</td>
<td>244</td>
<td>1.00</td>
<td>5.00</td>
<td>3.79</td>
<td>.85</td>
</tr>
<tr>
<td>Enlightened Self-Interest</td>
<td>236</td>
<td>1.14</td>
<td>5.00</td>
<td>3.49</td>
<td>.77</td>
</tr>
<tr>
<td>Short-Term Rationale</td>
<td>234</td>
<td>1.00</td>
<td>5.00</td>
<td>3.70</td>
<td>.89</td>
</tr>
<tr>
<td>Operations</td>
<td>248</td>
<td>1.00</td>
<td>4.83</td>
<td>3.25</td>
<td>.80</td>
</tr>
<tr>
<td>Curriculum</td>
<td>226</td>
<td>1.00</td>
<td>5.00</td>
<td>3.57</td>
<td>.86</td>
</tr>
<tr>
<td>Research</td>
<td>211</td>
<td>1.00</td>
<td>5.00</td>
<td>3.34</td>
<td>1.08</td>
</tr>
<tr>
<td>Service</td>
<td>235</td>
<td>1.00</td>
<td>5.00</td>
<td>3.77</td>
<td>.82</td>
</tr>
<tr>
<td>Action / Policies</td>
<td>237</td>
<td>1.00</td>
<td>5.00</td>
<td>2.81</td>
<td>.91</td>
</tr>
</tbody>
</table>

Individual respondents indicate that their leaders lean toward being “transformational”. They rate their leaders 3.79 (Table 4.1). Leaders are particularly adept at articulating a “vision for the future” (4.04) while they lag comparatively on providing “good models to
follow” (3.64). However, perceptions of transformational leadership qualities vary greatly; ranges on each of the four questions and the aggregate scale run from 1 to 5. Thus, campus leaders often appear to have different qualities to different stakeholders within the institution. Generally, the presence of transformational leaders should support the ascendancy of environmental issues, according to the model presented in Chapter II.

Individual respondents indicate that students are the most important drivers of environmental initiatives (mean=3.77) at their institution, followed by faculty (3.54), government pressures (3.29), administrators (3.23), the President (3.19), and activist groups (3.07). Pressure from the labor market (2.56), donors (2.67) and alumni (2.70) are the least important drivers for environmental initiatives. Generally, these data support the original model by emphasizing the importance of students and faculty as well as top leadership in driving environmental action. The surprising result is the prevalence of governmental pressure as a driver of sustainability action, as the literature does not support this finding. The relative influence of these stakeholder groups is examined in detail at the institution level later in this chapter.

In terms of rationales, reputation benefits (3.76), costs savings/financial benefits (3.72), and regulatory pressures are very important (3.68). Aggregating the responses reveals that rationales relating to regulatory pressures and cost savings (i.e., short-term benefits) are the most important drivers of initiatives (3.70), followed by long-term considerations and moral obligations (i.e., enlightened self-interest) (3.49) (Table 4.1). This result is surprising because the preliminary model did not predict that short-term benefits would have a major effort on campus environmentalism. I explore and explain this result later in this chapter.

Respondents report that their institutions perform slightly above “neutral” in terms of aggregate operational sustainability efforts (3.24) (Table 4.1). Campuses excel in the traditional operational environmental measures such as reducing waste (3.90), minimizing hazardous waste (3.85), and maximizing recycling (3.64). Campuses fall
behind in less traditional areas, such as “maximizing purchases of local and organic foods” (2.23), designing “transportation policies to minimize greenhouse gas emissions” (2.62), “utilizing renewable energy whenever feasible” (2.66), having an “environmental sustainability procurement policy in place” (2.92), and “composting waste whenever feasible” (2.95). Most respondent comments highlight standard environmental programs such as recycling and energy conservation, although some emphasize renewable energy, food co-ops, green building guidelines, composting and greenhouse gas reductions. Others express dissatisfaction with initiatives: “In practice management complies with minimum legal requirements…the current facilities administration does not view ‘sustainability’ as critical to their operations.” This result supports the literature on sustainability in higher education presented in Chapter II. Campuses are beginning to implement “standard” environmental programs (such as recycling), but are rarely moving the next step toward operational sustainability. If institutions begin to undertake far-reaching efforts such as purchasing organic food, these efforts become well-known.

Respondents rate their institutions between “neutral” and “agree” in terms of integrating sustainability into curricula (3.57 aggregated section mean) (Table 4.1). The majority of respondents report the presence of sustainability majors (68%), minors (64%) and concentrations (59%). Respondents generally agree that their institutions offer “multiple courses on sustainability” (3.88), although requiring sustainability as part of the curriculum (2.40) and providing “release time for faculty to learn about sustainability” (2.54) lag behind other curricular issues. Survey comments reflect that institutions “have environmental programs. However, no environmental classes are required for graduation.” One respondent summarizes the dominant sentiment as follows: “Sustainability, per se, is not the prime focus of courses or curriculum.” This result also supports the state of the field outlined in Chapter II: Environmental issues and sustainability are beginning to be implemented into curricula, but are not a major focus.
on most campuses, and are not required. Therefore, environmental sustainability is still on the periphery of the education offerings at most campuses surveyed.

Respondents rate their college or university’s sustainability research efforts 3.34 on average (Table 4.1). Respondents rate student research opportunities in sustainability highest (3.79), while research funding allocations to sustainability rate lowest (2.87). Comments reveal that sustainability research varies greatly according to the research bent of the campus generally. In other words, the level of research relating specifically to sustainability is highly correlated with the level of research at the institution more generally. The common theme is that research relating to sustainability is underfunded, and often inspired by students.

Respondents generally indicate that their institution is performing well in sustainability service (aggregate section mean of 3.77) (Table 4.1). Many respondents are aware of “campus groups that focus on sustainability” (4.24), although taking “institutional leadership positions on sustainability” is far less common (3.52). Respondents are generally aware of service-related sustainability actions: missing responses range from 25 to 48 per question, far lower than on other sections. Therefore, it appears that colleges and universities are forming groups and partnerships relating to sustainability, but that these relationships do not necessarily translate into creating an institution which is an outspoken leader on sustainability.

Individual respondents do not generally indicate that their campuses are instituting campus-wide actions and becoming leaders in sustainability, as shown by an aggregate mean on these survey sections of 2.81 (Table 4.1). Knowledge of campus-wide actions and leadership is lacking: the number of blank or “don’t know” responses range from 34 to 142 with a mean of 65. Colleges and universities tend to provide “some” sustainability training to faculty (3.98), staff (3.78) and administrators (3.54). Slim majorities of respondents agree that their institutions have a sustainability mission statement (3.31), sustainability committee (3.19) and sustainability coordinating
person/office (3.14). However, few respondents report success in faculty promotion and
tenure reflecting sustainability performance (1.54), and in promoting staff evaluations
based in part on sustainability performance (1.70). Moreover, there has been little
interest in having governing boards “regularly receive reports on sustainability” (2.15)
and screening investments for sustainability (2.18). Perhaps most revealing is that only
61 respondents report having knowledge of their institutions’ signing of the Talloires
Declaration (25%), while 46 respondents claim their institution has signed no
declarations (18%), and 142 respondents report that they do not know or left the
questions blank (57%) (Figure 4.1). One respondent reports: “Our President signed the
Talloires Declaration, but then has ordered a series of anti-environmental projects.”
Another reports: “Our then-Provost was an original signatory of the Talloires
Declaration, but that action did little to influence our campus culture as a whole.” This
result is striking because it reveals the extent to which campus environmental
sustainability efforts are being conducted in a piecemeal fashion. As case studies in the
sustainability in higher education literature suggest, there are pockets of environmental
activity at many campuses, but little coordination, leadership or major actions.

Respondents assessed campus’ overall environmental efforts on a 1-7 scale with 1
equaling “no initiatives”, 4 equaling “many separate ‘greening’ efforts”, and 7 equaling
“comprehensive, long-term sustainability program”. Respondents indicate their
campuses fall just slightly above the middle of the range (4.12) (Figure 4.2). Thus, 79%
of respondents rate their campus as a 3, 4 or 5, which reflects the dominant sentiment that
campuses are doing an average job of environmental management. Institutions are
conducting “greening” or “stewardship” initiatives, but are not reaching for the pinnacle
of environmental sustainability management outlined in Chapter II. However, the

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xi The survey did not reveal that each college or university had signed the Talloires Declaration, and asked
“My campus has signed external Declarations on sustainability” (yes, no or don’t know).
Figure 4.1: Knowledge of Signing of Talloires Declaration (or other Declarations)

'My campus has signed external Declarations on sustainability'

Figure 4.2: Respondent Views on Campus Environmental Efforts

Overall campus environmental efforts
general perception is that campuses are improving in terms of sustainability, as reflected by the following comments: “We are in a period of change. The next 2 years will see (campus) emerge as a leader in sustainability”; “We’re moving slowly in the right direction, but this still isn’t a campus-wide priority.” This optimism from a broad range of stakeholders is surprising because it conflicts with the dominant sentiment in the literature that environmental sustainability issues are not moving in a positive direction.

Data at the institutional level reveal that responding colleges and universities (i.e., most Talloires Declaration signatories) tend to be more progressive (3.59) and liberal (3.49) than conservative (2.85) (Table 4.2). These institutions also tend to have positive external (3.88) and internal (3.63) images as well as an ethical/moral (3.66), collaborative (3.52) and bureaucratic/hierarchical (3.49) culture and reputation. In terms of knowledge of signing the Talloires Declaration, at 17 institutions (30%) all respondents reported that their institution had not signed a declaration and at 18 institutions (32%) all respondents reported that their institution had signed a declaration. At another 8 institutions all respondents chose either “don’t know” or left the question blank (14%), and the final 13 institutions (23%) had mixed responses (i.e., some respondents were aware of Talloires, others were not). This surprising result reveals that Talloires has been effective at approximately half of the signatory campuses at the most, which reflects poorly on the efficacy of campus sustainability declarations in general. Overall, the sample consists of institutions which should be largely favorably positioned to undertake sustainability initiatives, according to the model presented in Chapter II, but which have many stakeholders who are unaware of the signing of the Talloires Declaration.

**Sustainability-Leadership Scale/Score (SLS)**

I aggregated the survey data to form the sustainability-leadership scale/score (SLS) for each institution. This score on a 1-5 scale uses weighted averages of individual responses for each institution. The weighted averages come from sustainability
Table 4.2: Profile of Responding Institutions

<table>
<thead>
<tr>
<th>Category</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservative</td>
<td>1.00</td>
<td>4.67</td>
<td><strong>2.85</strong></td>
<td>1.03</td>
</tr>
<tr>
<td>Liberal</td>
<td>1.67</td>
<td>5.00</td>
<td><strong>3.48</strong></td>
<td>.86</td>
</tr>
<tr>
<td>Bureaucratic/Hierarchical</td>
<td>1.00</td>
<td>5.00</td>
<td><strong>3.49</strong></td>
<td>.79</td>
</tr>
<tr>
<td>Collaborative</td>
<td>2.25</td>
<td>5.00</td>
<td><strong>3.52</strong></td>
<td>.53</td>
</tr>
<tr>
<td>Ethical/Moral</td>
<td>2.20</td>
<td>4.67</td>
<td><strong>3.66</strong></td>
<td>.52</td>
</tr>
<tr>
<td>Progressive</td>
<td>2.00</td>
<td>4.50</td>
<td><strong>3.59</strong></td>
<td>.52</td>
</tr>
<tr>
<td>Positive Internal Image</td>
<td>1.75</td>
<td>4.67</td>
<td><strong>3.63</strong></td>
<td>.61</td>
</tr>
<tr>
<td>Positive External Image</td>
<td>2.33</td>
<td>4.75</td>
<td><strong>3.88</strong></td>
<td>.48</td>
</tr>
</tbody>
</table>

N=56

performance outcomes generated from survey questions 1, 2 and 3. More specifically, question 1 is divided into four sections – operations, curriculum, research and service – each of which constitutes an important part of sustainability performance according to the literature and propositions presented in Chapter II. Questions 2 and 3 contain 18 sub-questions on campus-wide sustainability policies and actions. For each survey response, I calculated an average score for the four sections of Question 1 and the policies/actions outlined in Questions 2 & 3. To create an institutional score, I aggregated these individual means for each institution, using weighting based on expertise of respondents, as shown in Table 4.3. For example, a senior operational officer’s response on the operations section of the survey receives a higher weighting factor (1.25) than that of the president of the faculty senate (.75). Environmental or sustainability coordinators receive the highest weight on all response categories, while individuals who did not fit into any of the respondent categories (i.e., “others”) receive the lowest weight on all categories. In this manner, a weighted institutional score (on a 1-5 scale) was created for each of the 5 categories (Table 4.4). The scores for each category were averaged to obtain the final (institutional) SLS.

One assumption of this method is that individuals have knowledge and thus enhanced response validity in their areas of expertise. A second assumption is that equal
Table 4.3: Weighting Factors Used to Create Sustainability-Leadership Scale/Score (SLS)

<table>
<thead>
<tr>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
</tr>
<tr>
<td>1.25</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>.75</td>
</tr>
<tr>
<td>.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations</td>
</tr>
<tr>
<td>Curriculum</td>
</tr>
<tr>
<td>Research</td>
</tr>
<tr>
<td>Service</td>
</tr>
<tr>
<td>Actions/Policies</td>
</tr>
</tbody>
</table>

![Table content]

**Code**

(Each code represents the person in that position or a designated representative)

A = President/Chancellor
B = Senior Academic Affairs Officer
C = Senior Student Affairs Officer
D = Senior Business Officer
E = Senior Operational Officer
F = Faculty Senate President
G = Student Government President
H = Student Environmental Group President
I = Environmental Studies Dean/Director
J = Environmental Health Director
K = Recycling Coordinator
L = Environmental/Sustainability Coordinator
M = Energy Coordinator
N = Other (Administration/Staff)
O = Other (Faculty/Student)

Table 4.4: Components of Sustainability-Leadership Scale/Score (SLS)

<table>
<thead>
<tr>
<th>Component</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted Service</td>
<td>1.50</td>
<td>5.00</td>
<td>3.70</td>
<td>.69</td>
</tr>
<tr>
<td>Weighted Curriculum</td>
<td>1.24</td>
<td>4.80</td>
<td>3.55</td>
<td>.62</td>
</tr>
<tr>
<td>Weighted Research</td>
<td>1.28</td>
<td>5.00</td>
<td>3.35</td>
<td>.91</td>
</tr>
<tr>
<td>Weighted Operations</td>
<td>1.56</td>
<td>4.67</td>
<td>3.26</td>
<td>.58</td>
</tr>
<tr>
<td>Weighted Actions/Policies</td>
<td>1.20</td>
<td>4.13</td>
<td>2.76</td>
<td>.71</td>
</tr>
</tbody>
</table>

weight should be given to research, teaching, service, operations, and policy/practices.

This assumption is supported by literature on sustainability and the literature on environmental issues in higher education, which assert that environmental issues and sustainability must be integrated throughout an organization. Therefore, the SLS variable
does not prioritize one specific facet of a campus over another, and emphasizes campus-wide policies and practices.

The SLS variable created using this method is the dependent variable for the majority of analyses presented in this chapter. The total number of observations of SLS is equal to the total number of responding institutions (56). SLS is approximately normally distributed with a mean of 3.33 (1=No efforts; 5=Comprehensive Sustainability Program), a standard deviation of .59 and a range of 1.70-4.63 (Figure 4.3). While the responding institutions’ placement along this scale cannot be displayed due to confidentiality assurances, the institutions statistically break out into the three hypothesized categories when outliers are not considered: Sustainability-leaders (18 institutions: 3.6-5.0); Environmental-Leaders (19 institutions: 3.1-3.6); and No Leadership (19 institutions: 0-3.1).

**Figure 4.3: Sustainability-Leadership Scale/Score (SLS) (with Normal Curve)**

![Sustainability-Leadership Scale/Score (SLS) (with Normal Curve)](image)
The SLS results and related comments demonstrate, as one respondent describes, that many colleges and universities are “beginning to put environmental sustainability practice and policies into place.” Many respondents echo this sentiment: “This institution is in the infancy stage of sustainability but is definitely moving towards it – at a snail’s pace”; “A process of coming together has started”; “I am excited to see a growing interest in both sustainability and overall environmental awareness”. Moreover, comments reflect that programs are generally scattered now, but are moving toward increased organization: “Programs exist, but are new, underfunded, and undersupported.” The SLS variable appears to have captured this initial stage of environmental sustainability management as well as the enthusiasm and optimism of respondents.

To ensure that SLS is a valid variable, the survey contains five checks on internal validity. First, as described in the previous section, Question 4 asks respondents to rate their campus’ overall environmental efforts on a 1-7 scale. This response corresponds directly to SLS – as expected – since the environmental effort scale is highly correlated with SLS (Pearson’s coefficient(r)=.78; p<.01). Second, a major assumption of the propositions outlined in Chapter II is that institutions that are sustainability-leaders emphasize ecological and – to a lesser degree – social issues in decision making. This assumption holds because administrative emphasis on ecological issues is statistically correlated with SLS (p<.01), while social issues emphasis has a weak positive correlation with SLS, and economic issue emphasis has no relationship at all. Generally, emphasis on economic issues in decision making is strong across-the-board (mean=4.62), while emphasis on social (mean=3.93) and ecological (mean=3.25) issues are less common.

A third manner of checking and explaining the SLS variable is to assess its five component parts. The means of the five weighted components (Table 4.4) are as follows

---

xii Throughout the dissertation, “statistically valid” is used when p values are below .05. Correlations are “strong” when Pearson’s coefficients (r) are above .4. Correlations are “moderate” when r is between .2 and .4. Correlations are “weak” when r is between .1 and .2.
(in descending order): Service (3.70), Curriculum (3.55), Research (3.35), Operations (3.26) and Policies/Actions (2.76). If SLS is a valid aggregate variable, the components should be highly correlated with each other and scatterplots should reveal no pattern other than a linear relationship between the five components. Both of these expectations hold, as the components are positively related to each other ($p < .01$) (Table 4.5), and scatterplots reveal the expected linear relationships, although the relationship is less linear with curriculum. Sustainability curriculum has a weaker relationship with all other components. Overall, however, SLS captures variability in its interrelated components, yet forms an accurate aggregate concept.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Weighted Operations</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Weighted Curriculum</td>
<td>0.50**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Weighted Research</td>
<td>0.59**</td>
<td>0.53**</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Weighted Service</td>
<td>0.63**</td>
<td>0.63**</td>
<td>0.75**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>5. Weighted Actions/Policies</td>
<td>0.70**</td>
<td>0.39**</td>
<td>0.56**</td>
<td>0.72**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

N = 56.

** $p < .01$.

Fourth, respondent comments provide insight into validity of the SLS. For example, one respondent wrote, “Initiatives are *ad hoc* with little long term commitment – no follow through” and subsequently rated his or her institution moderate to low on sustainability-leadership. Another wrote, “I put us in the middle because we do not practice what we preach but we are making steps of progress to get there.” These and other comments generally establish a correlation between respondent views of sustainability-leadership and expected and actual scores on SLS.

Fifth and finally, the theoretical framework presented in Chapter II implies that several factors are key indicators and drivers of sustainability initiatives. These factors are incorporated into the sustainability scale in the form of individual questions, and should be highly correlated with the final SLS, given their importance. These factors are:
Presence of a sustainability committee/coordinator/office; Extensive use of the term “sustainability” in documentation on environmental initiatives; Use of sustainability as a motivational force by administrators; Presence of an environmental sustainability mission statement; Knowledge of signing of the Talloires Declaration; and Personal commitments of administrators to sustainability. All of these factors are positively correlated with SLS (p<.05). Thus, SLS again appears to be a strong and theoretically sound indicator of environmental sustainability performance on campuses. This result is important because the majority of the analysis in the following sections is based on using SLS as the dependent variable that measures sustainability performance.

Organizational Conditions

This section assesses the non-environmental organizational conditions that I predicted to influence organizational change processes and sustainability outcomes. The first subsections present the expected relationships, the relationships found in the survey, and initial conclusions. The final subsection uses multivariate regression to explore the importance of these organizational conditions in predicting sustainability-leadership rationales and outcomes.

Demographics

As described in the first section of this chapter, the institutions that signed the Talloires Declaration are diverse in terms of their size, location, degree level offered, tuition and control (public or private). The propositions outlined in Chapter II do not predict variance in sustainability-leadership rationales and SLS based on demographic variations. In relation to sustainability-leadership rationales, however, this null
hypothesis is partially rejected. The use of enlightened self-interest\textsuperscript{xiii} as a sustainability-leadership rationale significantly correlates with increased tuition (p<.05), and moderately correlates with private control and lower levels of degrees offered (not significant). In other words, more expensive (private) colleges or universities that offer only bachelor’s degrees tend to use enlightened self-interest as a sustainability-leadership rationale. On the other hand, larger public institutions with higher degree offerings and lower tuitions favor short-term rationales\textsuperscript{xiv} for sustainability-leadership (p<.05). The null hypothesis is partially supported for sustainability outcomes, as no demographic variables affect SLS at a statistically significant level (Table 4.6). However, a weak positive trend exists between SLS and increased tuition as well as private control. Therefore, demographic characteristics are not accurate indicators of SLS, but some characteristics correlate with rationales for sustainability-leadership processes. This finding corresponds with the case studies on environmental issues in higher education found in the literature, which tend to focus on small, liberal arts colleges, but also include some studies of large, public universities. Thus, it appears possible to make significant environmental progress at any type of institution, although the conditions for success are slightly more favorable at expensive, private colleges.

\begin{table}[h]
\centering
\begin{tabular}{lcccccc}
\hline
 & 1 & 2 & 3 & 4 & 5 & 6 \\
\hline
1. SLS & 1.00 & & & & & \\
2. Control (Public or Private) & 0.11 & 1.00 & & & & \\
3. Size (Total Student Body) & 0.05 & -0.59** & 1.00 & & & \\
4. Tuition & 0.20 & 0.84** & -0.56** & 1.00 & & \\
5. Location & -0.09 & -0.33* & 0.26 & -0.44** & 1.00 & \\
6. Highest Degree Offered & -0.02 & -0.56** & 0.76** & -0.52** & 0.23 & 1.00 \\
\hline
\end{tabular}
\caption{Correlations between SLS and Demographic Characteristics}
\end{table}

Note: N = 56  
** p < .01

\textsuperscript{xiii} As developed as a construct in Chapter II, “enlightened self-interest” includes institutional strategic positioning and ethic rationales.

\textsuperscript{xiv} Short-term sustainability-leadership rationales – which are developed as a construct in Chapter III – include “regulatory pressures” and “cost savings/financial benefits”.

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Transformational Leadership

The propositions outlined in Chapter II assert that institutions with transformational leaders will engage in sustainability efforts because of leadership commitment and long-term benefits, with highly effective outcomes. The survey data partially support this proposition. Campuses perceived to have transformational leaders tend to have individuals high in the organizational hierarchy driving sustainability efforts (p<.05), but do not pursue sustainability for long-term benefits (i.e., enlightened self-interest) (Table 4.7). These institutions tend to de-emphasize cost savings and regulatory compliance as sustainability rationales (weak correlation). Institutions with transformational leaders tend to have more robust sustainability programs (i.e., SLS) (weak correlation) while these institutions also have leaders who display high levels of commitment to the ideals of sustainability (moderate correlation). Overall, when constituents believe that their leaders are transformational, individuals high in the organizational hierarchy tend to be committed drivers of sustainability efforts, leading to strong sustainability programs compared to institutions without leaders perceived to be transformational.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Transformational Leadership</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Leadership Commitment Rationale</td>
<td>0.31*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Enlightened Self-Interest Rationale</td>
<td>0.06</td>
<td>0.53**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Short-Term Rationale</td>
<td>-0.13</td>
<td>-0.07</td>
<td>-0.13**</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. SLS</td>
<td>0.17</td>
<td>0.50**</td>
<td>0.65**</td>
<td>-0.05</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>6. Sustainability Efforts Come from Top</td>
<td>0.25</td>
<td>0.36**</td>
<td>0.38**</td>
<td>-0.09</td>
<td>0.32*</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: N = 56
* p < .05
** p < .01
Political Orientation

The propositions in Chapter III predict that more progressive institutions – and, to a lesser degree, more liberal institutions – will pursue sustainability-leadership based on enlightened self-interest and will score highly on the SLS (as compared to more conservative institutions). The survey data largely support this proposition as institutions which are perceived to be more progressive and liberal tend to use enlightened self-interest as a rationale (progressive: p<.01; liberal: moderate correlation) and score highly on the SLS (progressive: p<.01; liberal: weak correlation) (Table 4.8). Institutions perceived by constituents to be more conservative tend use short-term rationales (p<.05), and display weaker sustainability-leadership (i.e., SLS) (weak correlation). These finding strongly support the assertion that political orientation is important in both the process and outcome of campus sustainability. Institutions which are perceived to be liberal and progressive tend to be more responsive to environmental issues than those perceived to be conservative.

| Table 4.8: Correlations between Political Orientation and Sustainability Rationale/SLS |
|---------------------------------|-----|-----|-----|-----|-----|-----|
| 1. Progressive                  | 1.00|     |     |     |     |     |
| 2. Liberal                      | 0.47**| 1.00|     |     |     |     |
| 3. Conservative                 | -0.49**| -0.92**| 1.00|     |     |     |
| 4. Enlightened Self-Interest Rationale | 0.49**| 0.24 | -0.13| 1.00|     |     |
| 5. Short-Term Rationale         | -0.28*| -0.34*| 0.34*| -0.13| 1.00|     |
| 6. SLS                          | 0.40**| 0.20 | -0.13| 0.65**| -0.05| 1.00|

Note: N = 56

* p < .05

** p < .01

Ethics/Morality

The propositions outlined in Chapter II assert that colleges and universities which stakeholders consider to be ethical and moral will pursue sustainability-leadership based
on perceived responsibility and ability as well as long-term benefits (i.e., enlightened self-interest), which should lead to strong programs. The survey results demonstrate that ethical and moral perception is moderately correlated with enlightened self-interest as a rationale and weakly negatively correlated to short-term rationales (Table 4.9). Ethical and moral perception is weakly correlated with SLS. Therefore, the effects worked in the expected direction, but are not strong. Ethical/moral perception of the institution may be an important factor in environmental-leadership, but this influence is not clearly demonstrated by the survey. The fact that this relationship is not clear is surprising, given the strong emphasis given to ethics in the environmental management and corporate social responsibility research. One possible explanation – which is explored in the next three chapters – is that perceptual data on institutional ethics and morality is difficult to obtain for campuses, especially through survey research. Thus, institutional ethical stance might be an important condition for sustainability in higher education, but this importance cannot be revealed using the data gathering methods utilized in this study.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ethical/Moral Orientation</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Enlightened Self-Interest Rationale</td>
<td>0.22</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Short-Term Rationale</td>
<td>-0.15</td>
<td>-0.13</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>4. Sustainability-Leadership Scale/Score (SLS)</td>
<td>0.12</td>
<td>0.65**</td>
<td>-0.05</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: N = 56
** p < .01

Image

The propositions outlined in Chapter II assert that institutions that are more concerned with their image and which have positive internal and external images are more likely to pursue sustainability based on enlightened self-interest and have strong
sustainability programs. The survey results support this proposition, particularly for internal image (Table 4.10). Perception of positive internal image correlates strongly with an enlightened self-interest rationale (p<.01) and SLS (p<.05), while perception of positive external image also correlates with enlightened self-interest (p<.05) and SLS (moderate correlation). Therefore, perceptions of image – particularly of internal image – correlate strongly with pursuing and achieving sustainability on campus. Image is upheld as a major factor in campus sustainability, as outlined in the literature in Chapter II. The difference in strength of effect on campus sustainability between internal and external image was largely unanticipated. Internal image could be a stronger correlate for strong campus sustainability programs because stakeholders are more inspired to create organizational change when they identify more strongly with and have more allegiance to their institutions. On the other hand, desire to improve external image is found to be a strong driver for sustainability programs in the higher education sustainability literature, and thus it is surprising that internal image is found to be a stronger correlate than external image in this survey.

<table>
<thead>
<tr>
<th>Table 4.10: Correlations between Image and Sustainability Rationale/SLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>1. Positive Internal Image</td>
</tr>
<tr>
<td>2. Positive External Image</td>
</tr>
<tr>
<td>3. Enlightened Self-Interest Rationale</td>
</tr>
<tr>
<td>4. Sustainability-Leadership Scale/Score (SLS)</td>
</tr>
</tbody>
</table>

Note: N = 56
* p < .05
** p < .01

Organizational Structure

The propositions presented in Chapter II assert that colleges and universities with a more collaborative structure and decision making process are more likely to pursue sustainability based on social obligation and long-term benefits (i.e., enlightened self-
interest) and have stronger programs (compared to institutions which are more bureaucratic and hierarchical). The survey data support this proposition (Table 4.11). Institutions perceived by respondents to have a more collaborative approach tend to pursue sustainability based on enlightened self-interest (weak correlation), not for short-term benefits (moderate correlation), and rate highly on SLS (p<.01). Bureaucratic and hierarchical institutions are just the opposite; they emphasize short-term rationales (p<.01), and have low scores on the SLS (weak correlation). Therefore, organizational structure emerges as a strong predictor of campus sustainability approach and results. The strength of this relationship appears to be as strong as the literature and model predict, which supports the idea that multiple stakeholders need to be involved in decision making to create strong sustainability programs.

<table>
<thead>
<tr>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Collaborative Approach</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Bureaucratic/Hierarchical</td>
<td><strong>-0.39</strong></td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Enlightened Self-Interest Rationale</td>
<td>0.14</td>
<td><strong>-0.20</strong></td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Short-Term Rationale</td>
<td><strong>-0.23</strong></td>
<td><strong>0.37</strong></td>
<td>-0.13</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>5. Sustainability-Leadership Scale/Score (SLS)</td>
<td><strong>0.38</strong></td>
<td><strong>-0.19</strong></td>
<td>0.65**</td>
<td>-0.05</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: N = 56  
** p < .01

**Conclusion**

To comprehend the relative and cumulative effects of the organizational conditions discussed in this section, I performed regression analyses with all the condition variables and three separate dependent variables: enlightened self-interest rationale; short-term benefits rationale; and SLS. The results show that hypothesized positive organizational conditions account for approximately 29% of the variance (statistically significant) in the use of enlightened self-interest as a sustainability-leadership rationale (adjusted R²=.20, F(6,48)=3.25, p = .009). The only statistically
significant individual predictor is progressive political orientation (beta=.46; p=.008), while positive internal image is nearly significant (beta=.26; p=.110). Therefore, the relationship between progressive politics and focus on (internal) image emerge as strong predictors of a long-term approach to environmental sustainability. It is not clear why these conditions stand out as predictors of the enlightened self-interest approach, and not other factors predicted to be highly correlated with ESI, such as transformational leadership and perception of institution ethics and morality. In any case, these relationships are explored in subsequent chapters.

Conservative political orientation and bureaucratic/hierarchical structure account for approximately 19% of the variance (statistically significant) in short-term benefits as a sustainability-leadership rationale (adjusted $R^2=.16$, $F(2,53)=6.26$, $p = .004$). However, neither independent variable is a statistically significant individual predictor of short-term rationale. The implication of this finding that institutions which are perceived to be conservative and rigid in decision making tend to rely on the more traditional method of promoting environmental initiatives: cost savings and regulatory compliance. Whether this result derives from an intentional strategy of sustainability advocates or a necessity of enacting environmental change in an unsupportive environment is explored throughout this dissertation.

When all organizational conditions are used as predictors, 32% of the variability (statistically significant) in SLS is accounted for (adjusted $R^2=.25$, $F(9,45)=2.96$, $p = .008$). Collaborative approach (beta=.41; p=.009) and progressive political orientation (beta=.47; p=.012) are the only statistically significant positive individual predictors while – contrary to the expected outcome – increased ethical/moral culture predicts a significant decrease in SLS (beta=-.38; p=.028). However, these results should be viewed with caution as many independent variables are highly correlated with each other. Overall, the survey data provides initial support for the proposition that organizational conditions affect sustainability-leadership rationales and outcomes, largely in the
predicted manner. More specifically, decision making approaches and politics emerge as the strongest predictors of sustainable outcomes while institutional ethics/morality is a weak correlate and works in often unexpected directions. In the conclusion section of this chapter, organizational conditions are revisited to form a more solid and inclusive predictive model of SLS.

Drivers

The propositions outlined in Chapter II predict that the most robust campus sustainability programs come from a combination of two drivers: the commitment of top leaders and the emergence of environmental issues at the grassroots level. The importance of top leadership is strongly upheld by the survey: SLS is highly correlated with “commitment of the president” and “commitment of administrators” (p<.01) (Table 4.12). One respondent wrote, “Our chancellor is quite supportive and the Dean of Arts and Sciences is as well. The rest are either neutral or opposed to sustainability/environmental initiatives. Most of these are simply neutral.” Other respondents commented that the lack of interest of institutional leaders is a major barrier to action (as described later in this chapter). The implication is that top leadership is a very important factor in campus sustainability. This general finding was unsurprising, but the strength of the relationship between top leadership support and sustainable outcomes was stronger and clearer than expected.

Table 4.12: Correlations between Sustainability Drivers and SLS

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Top Leadership Commitment</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Stakeholder Pressure (Aggregate)</td>
<td>-0.29**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>3. SLS</td>
<td>0.50*</td>
<td>0.49**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: N = 56
** p < .01
The survey found that stakeholder pressure as an aggregate concept (i.e., the average of all stakeholders) is highly correlated with sustainability-leadership outcomes (p<.01) (Table 4.12). Moreover, pressure from each stakeholder group is highly correlated with sustainability-leadership outcomes (i.e., SLS) (p<.01), with the exception of government pressure (no correlation). More specifically, students appear to be the strongest driving force for sustainable outcomes (3.73), which is also reflected in many survey comments. One survey respondent wrote, “The students are the meat and potatoes – or tofu and vegetables – of our green initiatives. They keep the campus, in particular administrators, in line.” Faculty are the second strongest pressure group (3.55), and one respondent claims: “most environmentally beneficial change is the product of professors.” Interestingly, although government pressure is the third strongest driver of campus sustainability (3.23), there is no relationship between government pressure and sustainability outcomes. While the theoretical framework asserts that government pressure is not a strong driver of campus sustainability, the absence of any relationship between governmental pressure and campus sustainability is surprising, and points to the lack of effectiveness of regulatory compliance as a motivator for action (as discussed in the next section). The only other significant pressure group is “activist groups” (2.98), which are not particularly prevalent, but appear to significantly affect outcomes when present. Alumni pressure (2.70), donor pressure (2.69) and labor market pressure (2.58) are weaker drivers for campus sustainability, but all significantly effect outcomes.

While respondent comments on the survey generally concur with the quantitative findings, they also support the proposition that a small core group of stakeholders typically drives campus sustainability efforts. The following comments reflect this dominant sentiment: “our program would come to a halt except for a few abiding”, “a small critical mass is developing to advance sustainability issues” and “virtually all efforts toward this end are undertaken by individuals or intra- and interdisciplinary interest groups.” In other words, while individual stakeholder groups are important as
drivers of campus sustainability, real progress occurs when an active core of cross-functional and cross-disciplinary enthusiastic individuals come together to advocate for sustainability.

**Rationales**

The propositions in Chapter II predict that when colleges or universities use a rationale of enlightened self-interest for pursuing sustainability-leadership, institutional programs will be robust. The survey data strongly support this proposition (Table 4.13), as there is a strong correlation between enlightened self-interest as a rationale and SLS (p<.01). This finding indicates that the approach that change agents take to promoting environmental sustainability issues can have a great impact on the outcomes. Ethical and long-term strategic approaches are particularly effective for change agents. This result is explored in the next three chapters.

| Table 4.13: Correlations between Sustainability-Leadership Rationales and SLS |
|---------------------------------------------------|---|---|---|
| 1. Enlightened Self-Interest Rationale | 1.00 |       |   |
| 2. Short-Term Rationale                  | -0.13 | 1.00 |   |
| 3. Sustainability-Leadership Scale/Score(SLS) | 0.65** | -0.05 | 1.00 |

Note: N = 56
* p < .05
** p < .01

The model predicts that increased use of short-term rationales (cost-effectiveness and regulatory compliance) for sustainability initiatives will lead to decreased SLS. This proposition is partially contradicted by the survey data because there is no correlation between increased reliance on short-term rationales and SLS (Table 4.13). One potential explanation for this result is that some items that make up the sustainability scale could be achieved through a cost-effectiveness and regulatory compliance rationale, particularly actions that fall under operations (such as waste reduction). Moreover, high scores on
short-term rationale imply that the institution has some level of concern about environmental issues, which can translate into more action than institutions without regard for short-term environmental benefits. As opposed to the original propositions, it is possible that the use of short-term rationales is a stage of the environmental decision making process which is followed by and a part of an emphasis on the enlightened self-interest rationale. In any case, the survey demonstrates that an enlightened self-interest rationale leads to strong sustainability initiatives while the short-term rationales may not affect outcomes.

**Barriers**

The propositions in Chapter II assert that the low priority of environmental issues on the agenda of top decision makers and others in the organizational hierarchy is the key barrier to progress on campus sustainability, and leads to wide range of resource allocation problems. The survey contains 15 questions about barriers to institutional environmental efforts, including 6 questions about lack of commitment from various stakeholders (e.g., governing board, administrators, students). The barriers which respondents found the most problematic are “higher priority of other initiatives” (mean=4.17), “lack of funding” (mean=4.08), and “lack of time” (mean=3.78) (Table 4.14). These findings strongly support the initial proposition. Commitment from stakeholders is more problematic at higher levels in the institutional hierarchy, with means arranged in the following decreasing order (Governing Board – Administrators – President – Staff – Faculty – Students). Lack of commitment from students (mean=2.53) and faculty (mean=2.71) as well as “fear of change” (mean=2.78) and lack of commitment from staff (mean=2.78) are the least formidable barriers to sustainability-leadership. Therefore, the analysis of barriers supports the initial propositions that making environmental issues a priority is extremely problematic for campus sustainability advocates, and that individuals higher in the organizational hierarchy are
the least likely to be responsive to environmental sustainability issues. Environmental issues are not competing effectively for the time of high level decision makers.

Table 4.14: Barriers to Campus Sustainability

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Priority of Other Initiatives</td>
<td>2.50</td>
<td>5.00</td>
<td>4.17</td>
<td>.59</td>
</tr>
<tr>
<td>Lack of Funding</td>
<td>2.00</td>
<td>5.00</td>
<td>4.08</td>
<td>.58</td>
</tr>
<tr>
<td>Lack of Time</td>
<td>2.00</td>
<td>5.00</td>
<td>3.77</td>
<td>.59</td>
</tr>
<tr>
<td>Complexity of the Issues</td>
<td>1.00</td>
<td>5.00</td>
<td>3.29</td>
<td>.71</td>
</tr>
<tr>
<td>Lack of Commitment from Governing Board</td>
<td>2.00</td>
<td>5.00</td>
<td>3.29</td>
<td>.83</td>
</tr>
<tr>
<td>Lack of a Coordinating Person/Entity</td>
<td>1.50</td>
<td>5.00</td>
<td>3.23</td>
<td>.92</td>
</tr>
<tr>
<td>Academic/Administrative Structures</td>
<td>1.50</td>
<td>5.00</td>
<td>3.17</td>
<td>.71</td>
</tr>
<tr>
<td>Lack of Information</td>
<td>2.00</td>
<td>4.50</td>
<td>3.16</td>
<td>.69</td>
</tr>
<tr>
<td>Lack of Commitment from Administrators</td>
<td>1.80</td>
<td>4.40</td>
<td>2.96</td>
<td>.66</td>
</tr>
<tr>
<td>Lack of Commitment from the President</td>
<td>1.50</td>
<td>4.50</td>
<td>2.93</td>
<td>.76</td>
</tr>
<tr>
<td>Lack of Tangible Benefits</td>
<td>1.00</td>
<td>4.50</td>
<td>2.92</td>
<td>.68</td>
</tr>
<tr>
<td>Lack of Commitment from Staff</td>
<td>1.57</td>
<td>3.67</td>
<td>2.77</td>
<td>.49</td>
</tr>
<tr>
<td>Fear of Change</td>
<td>1.00</td>
<td>4.25</td>
<td>2.77</td>
<td>.71</td>
</tr>
<tr>
<td>Lack of Commitment from Faculty</td>
<td>1.50</td>
<td>4.00</td>
<td>2.71</td>
<td>.57</td>
</tr>
<tr>
<td>Lack of Commitment from Students</td>
<td>1.00</td>
<td>4.40</td>
<td>2.52</td>
<td>.68</td>
</tr>
</tbody>
</table>

N = 56

Some of the best information about barriers – which largely reinforces the quantitative survey data – comes from respondent comments. The dominant theme about lack of money is reflected by the following comments: “Of course money and financial concerns are always paramount. I think the administration is interested in ‘sustainability’. However, it isn’t clear at what cost.”; “The only barrier to additional improvement is funding.” One respondent continually wrote “funds?” at various points in the survey, including under barriers. Other respondents reflect the common sentiment that sustainability is not high on the priority list of leaders: “leadership is generally pro-environment but it is not a high priority”, “what has been missing is the leadership to effect change”, “the top levels of administration have not made sustainability an institutional priority”, and “(our) administration is reluctant to assume a leadership role”. Other respondents comment about barriers faced because of the lack of widespread...
support: “The environmental club President has been pushing for a green star institution but unfortunately she is, for the most part, a one woman operation. (The institution) has the image of a green campus but lacks the initiative and conviction.” Some respondents report that one individual or organizational level is a particularly strong barrier: “zero interest by facilities V.P.”, “President gives lip service to environmental issues…but does not actively support”, “Current VP of Finance is not environmentally oriented”, “Board is made up of wealthy business folks which aren’t really aware of sustainability issues and don’t necessarily care” and “Our president and provost don’t seem to have a clue when it comes to sustainability.” Other respondents report an eclectic list of barriers, including “economic pressures and lack of communication between students and the administration appears to be holding us back”, and a “lack of convincing arguments that efforts are truly beneficial.” Finally, one respondent simply wrote “POLITICS”.

The barriers are highly correlated to each other. For example, the strongest barrier – higher priority of other initiatives – is significantly positively correlated with all the other barriers (p<.05). The least strong barrier – lack of commitment from students – is significantly positively correlated with 11 of the other barriers. Generally, as barriers become more problematic at an institution, SLS decreases. This negative correlation is statistically significant (p<.05) or moderately correlated for all of the barriers, except “lack of funding” and “fear of change”. The absence of a relationship between SLS and fear of change as a barrier can be explained by the low prevalence of this barrier. The absence of a relationship between lack of funding and SLS is more difficult to explain, since funding ranks highly as a problem yet is positively correlated with only 3 other barriers (p<.05). One possible explanation is lack of funding is so prevalent that institutions in all stages of environmental management experience these deficiencies without any particular pattern to the severity of the issue. An institution that is emerging as a leader in sustainability will require a significantly higher funding level than an institution which is just beginning to consider environmental issues. Therefore, lack of
funding could emerge as an equally strong barrier for each institution. In any case, the barriers tend to be strongly related to each other, and the higher priority of other initiatives emerges as the keystone obstacle to progress on sustainability. The survey data also emphasize the importance of a few key individuals in making or inhibiting progress toward campus sustainability.

**Conclusion**

This section presents a model that uses the hypothesized important organizational conditions and sustainability-leadership rationales to predict SLS. Since the institutional sample size is relatively small (56), it is statistically desirable to minimize the number of predictor variables in order to increase the power of the analysis. Therefore, one variable was chosen for ethics, image and culture, one for transformational leadership, and one for rationale. Collaborative approach is the clear choice to represent ethics, image & culture because it is highly correlated (p<.05) with all the variables hypothesized to relate positively to SLS: progressive and liberal political orientation, ethical/moral perception, and positive internal and external image. Collaborative approach is negatively correlated (p<.01) with the two organizational conditions hypothesized to relate negatively to SLS: conservative political orientation and bureaucratic/hierarchical structure. Moreover, the theoretical framework outlined in Chapter II emphasizes collaborative approach as a strong predictor of sustainability-leadership. Therefore, collaborative choice is not only convenient and necessary from a statistical standpoint (because of the high inter-correlations of the organizational conditions), but is also highly desirable to include in a regression model from a theoretical perspective.

 Aggregate transformational leadership encompasses all (non-environmental) leadership questions in the survey, is predicted to be highly related to SLS, and is not closely related with most ethics, image & culture variables, including collaborative approach. Therefore, it is a strong choice as the second predictor. Enlightened self-
interest as a rationale for environmental sustainability-leadership is at the core of the theoretical framework, and is an aggregate of the long-term and social obligations rationales presented on the survey. Moreover, enlightened self-interest is positively correlated with leadership commitment and pressure rationales (p<.01) and is weakly negatively correlated short-term rationales. Therefore, it is a strong choice for the third predictor. Finally, the three predictors are not correlated with each other, which eliminates collinearity problems.

Collaborative approach, transformational leadership and enlightened self-interest are powerful and highly statistically significant predictors of SLS (adjusted $R^2=.49$, $F(3,52)=18.282, p = .000$) (Table 4.15). Approximately 50% of the variance in SLS can be accounted for by differences in ethics, image & culture (as represented by collaborative approach), leadership (as represented by transformational leadership) and rationale for approaching sustainability (as represented by enlightened self-interest). More specifically, enlightened self-interest rationale scores significantly predict SLS (beta = .608; p = .000): As enlightened self-interest increases by one point on the 5-point likert scale, SLS increases by .608. Collaborative approach also significantly predicts SLS (beta = .277; p = .007): As collaborative approach increases one point on the 5-point likert scale, SLS increases by .277. Transformational leadership predicts SLS, but not in a statistically significant manner (beta = .077; p = .437): As transformational leadership increases one point on the likert scale, sustainability-leadership increases by .077. The model with these three independent variables adheres strongly to the proposed relationships presented in Chapter II, and will be referred to as “the main model” for the remainder of this chapter.
Table 4.15: Main Regression Model Predicting Campus Sustainability-Leadership

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>B</th>
<th>Beta</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformational Leadership</td>
<td>.11</td>
<td>.08</td>
<td>0.85</td>
</tr>
<tr>
<td>Collaborative Decision Making</td>
<td>.31</td>
<td>.28</td>
<td>2.80**</td>
</tr>
<tr>
<td>Enlightened Self-Interest Rationale</td>
<td>.63</td>
<td>.61</td>
<td>6.30**</td>
</tr>
<tr>
<td>Constant</td>
<td>-.38</td>
<td>-0.59</td>
<td></td>
</tr>
</tbody>
</table>

Dependent Variable: Sustainability-Leadership Scale/Score (SLS)

Adjusted $R^2$: 0.49  
$F (3, 52)$: 18.5**  
N = 56  
** p < .01

Collinearity and variance diagnostics for the model are well within the normal range, which indicates that the independent variables are independent of each other and are strong predictors of sustainability-leadership. The distribution of standardized residuals is approximately normal, and all institutions’ true SLS fall within approximately two standard deviations from their predicted score, with one notable exception (Figure 4.4). This outlier institution is well above average in transformational leadership, collaborative approach and enlightened self-interest rationale, yet is the second lowest institution on the sustainability-leadership scale, lying more than 4 standard deviations away from the predicted value. However, several respondents from this institution indicate that an environmental studies major will begin next year, which could lead to an increase in performance, particularly since this institution ranked last in “campus sustainability efforts come from the bottom.” This outlier institution will be further discussed in the sensitivity analysis section of this chapter.

Overall, the model presented in Chapter II is in large part supported by the survey data, as collaborative (ethical, image-focused) colleges and universities tend to pursue sustainability based on enlightened self-interest – with the support and guidance of transformational leaders – which leads to robust sustainability programs and institutional leadership on advancing sustainability. The surprising strength of these three components of campus sustainability efforts is tested qualitatively in the following two
chapters. The statistical strength of this model and analysis is assessed in the remainder of this chapter.

**Figure 4.4: Difference between Actual and Predicted (by the Main Model) Campus Sustainability Outcomes**

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**Sustainability-Leadership Scale/Score (SLS) Component Analysis**

It is possible that the analyses presented in the previous sections are valid for the aggregate measure of institutional SLS, but do not hold for the individual components of this score: operations, research, curriculum, service and actions/policies. To test the results against each of these components, I reran the main analyses using each individual component instead of the aggregate SLS. For weighted operations score, the bi-variate comparisons are nearly identical to the results for SLS with one notable exception: no
A statistically significant relationship exists between operations and collaborative approach. This surprising situation could mean that collaboration is more important in education, research and other functions of the campus as opposed to physical operations. This possibility seems reasonable because the literature on higher education management typically refers to faculty when discussing multiple governance systems and inability to create incentives from the top to motivate organizational change. Operations staff are more likely to respond to top-down approaches to environmental management than faculty. In any case, using operations as the dependent variable in the main model results in less strong predictions (adjusted $R^2=.39$) than in the original model because collaborative approach is not a significant predictor (although transformational leadership is marginally stronger).

Weighted sustainability curriculum scores correlate to factors and predictors in a very similar way as SLS, although correlations tend to be weaker. One exception is that increased sustainability curricula is weakly negatively related to short-term rationales (there is no discernible relationship between SLS and short-term rationales). The three predictors are less strong in predicting sustainability curriculum (adjusted $R^2=.33$) than SLS. Collaborative approach and enlightened self-interest rationale work in the same direction (but are weaker) in predicting curriculum as they do predicting SLS. However, increased transformational leadership predicts reduced sustainability curriculum (not statistically significant), which is a reversal of the original trend. Therefore, curriculum acts similarly to SLS (although less strongly), except that transformational leadership has little effect (and perhaps a negative effect) on increasing sustainability in curricula. This trend could derive from the fact that curricula are typically more a result of bottom-up efforts from faculty and others as opposed to mandates from leaders, even if the leaders are transformational.

Weighted sustainability research scores differ from SLS by correlating weakly with campus size and not with tuition, as expected since research-focused institutions
tend to be larger. Institutions with stronger sustainability research also tend to be more liberal, less conservative and bureaucratic/hierarchical, with more transformational leaders, but less focus on enlightened self-interest and leadership commitment as sustainability rationales, as compared to institutions with higher scores on SLS. These demographic and organizational condition differences have a minor effect on predictions, as the three main predictors are proportionately less strong in predicting sustainability research (adjusted $R^2=.31$).

Weighted sustainability service scores correlate to important variables similarly to the SLS, although the relationships tend to be weaker. The overall predictive value of the main model for sustainability service is proportionately lower (adjusted $R^2=.35$) than SLS. The lower predictive value is due to the lower predictive ability of each independent variable, and to the presence of three significant outliers.

Weighted sustainability actions and policies scores correlate to important variables similarly to SLS, although connections are weaker between actions/policies and most organizational conditions (such as collaborative approach and political bent). The correlation with leadership commitment as a driver for sustainability action is stronger for actions and policies, as expected since campus-wide actions and policies need commitment from individuals high in the organizational hierarchy. Overall, the three main predictors are weaker in predicting weighted actions and policies (adjusted $R^2=.32$), largely because of the weaker predictive power of collaborative approach and the presence of six outliers.

In summary, the five individual components (which are aggregates of multiple survey questions) are closely aligned with the SLS. The main model fit is weaker – yet still valid in the expected direction – for each component. The weaker fit for each component indicates that the organizational conditions, drivers and rationales for sustainability-leadership vary for each function of higher education, and no single combination of factors captures all approaches. While there is variance in the strength of
correlated and predictive factors, the overall conclusions remain robust for each of the five components.

**Sensitivity Analyses**

To test the strength of the results presented throughout this chapter, this section presents a range of sensitivity analyses. The first major area of concern is that the level of agreement between respondents from the same institution might be minimal, and that averaging responses (even if weighted) will lead to nonsensical responses. For example, an institution where one respondent gives his or her college or university a “5” on the transformational leadership scale and another respondent reports a “1” might not be accurately represented by a “3”. To assess this possibility on important constructs, new variables were created which represent the range of response within each institution with more than 1 respondent (54 institutions) (Table 4.16). The means for these ranges vary from 1.08 (SLS) to 1.74 (collaborative approach), although outliers inflate these values.xv

<table>
<thead>
<tr>
<th>Table 4.16: Intra-Institutional Range (i.e., “Level of Agreement”) of Responses on Key Constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Sustainable Operations</td>
</tr>
<tr>
<td>Sustainable Curriculum</td>
</tr>
<tr>
<td>Sustainable Service</td>
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<tr>
<td>Sustainable Policies/Actions</td>
</tr>
<tr>
<td>Sustainability-Leadership Scale/Score (SLS)</td>
</tr>
<tr>
<td>Transformational Leadership</td>
</tr>
<tr>
<td>Collaborative Approach</td>
</tr>
<tr>
<td>Leadership Commitment</td>
</tr>
<tr>
<td>Stakeholder Pressure</td>
</tr>
<tr>
<td>Enlightened Self-Interest Rationale</td>
</tr>
<tr>
<td>Short-Term Rationale</td>
</tr>
</tbody>
</table>

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xv Ranges tend to be higher for variables that consist of a single question, and lower for variables that aggregate multiple questions.
To determine the potential significance of response variance within institutions, I correlated response ranges with constructs. In this manner, I tested response ranges – which form variables roughly equivalent to “level of agreement” – for effects on outcomes. The results reveal that agreement among respondents does not typically impact relationships between constructs. For example, agreement on the constructs profiled in Table 4.16 does not significantly (or moderately) affect SLS. However, agreement on a particular construct sometimes affects response to that construct. For example, increased disagreement on transformational leadership, collaborative approach and enlightened self-interest rationale correlate with decreased transformational leadership score (p<.01), decreased collaborative approach score (moderate correlation), and decreased enlightened self-interest rationale (moderate correlation) respectively. Therefore, agreement on a construct is generally more prevalent when an institution scores higher on the construct. This pattern indicates that when institutions are perceived to be performing well on a particular aspect of campus sustainability, stakeholders generally agree about this performance. Overall, the range of response among individuals at a single institution can bias institutional response, but this bias is not a major factor in determining relationships between organizational conditions, sustainability-leadership rationale, and SLS.

Another way of testing the potential problem of variance in response within institutions is to remove the institutions with the most and least response range and determine if the outcomes are affected. If institutions with a range of more than 1.5 on sustainability-leadership average (13 institutions) are excluded from the main model, the conclusions are not altered, although the power of the results is lowered (adjusted $R^2=.40)$. If institutions with a range of less than .5 on sustainability-leadership average

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xvi “Sustainability-leadership average” is different from SLS because it is the simple average of an individual response as opposed to the weighted average of the aggregated institutional response. Sustainability-leadership average is calculated for individuals, while SLS is an institutional variable.
(10 institutions) are excluded from the main model, the conclusions become stronger in aggregate (adjusted $R^2=.62$) and for individual predictors (e.g., transformational leadership: Beta=.211; $p=.030$). The general pattern of increased predictive power as agreement decreases holds for most variables, which suggests that as agreement becomes less common (and as response rates for an institution increase), the proposed relationships between organizational conditions, decision making rationale and SLS become more pronounced. Therefore, the contextual richness embedded in multiple responses from a single institution form a more complex and accurate picture of a campus, which forms a strong argument for surveying multiple, diverse individuals from the same campus.

A second and related potential major concern is that data from institutions with few responses might differ from data from institutions with many responses – independent of sustainability commitment and actions – since surveying multiple stakeholders is more likely to reveal complex organizational realities. To test whether response rates affect outcomes, I reran the major analyses excluding the 10 institutions with two or less respondents. The results reveal that the remaining institutions do not vary significantly from the original sample in terms of demographics. The main model remains largely unchanged and statistically significant, although the strength of analysis is weakened (adjusted $R^2=.30$), largely due to the smaller sample size. Moreover, there are no notable changes in SLS or its component factors, key organizational characteristics, or sustainability-leadership rationale and barriers. Therefore, the results prove robust to the number of respondents per institutions.

A third potential problem is the significant outlier in the main model because this institution could have disproportionate power in determining conclusions. When this institution is removed, the main model and three predictors become stronger (adjusted $R^2=.63$). Therefore, the outlier is inhibiting expected outcomes, and reducing the strength of the model. However, there is no a priori reason to remove the outlier from the
analysis. It appears that this institution has not enacted the conditions and strategies predicted to be conducive to campus sustainability, although this situation may change in the near future. While the outlier does not follow the model in its current stage of campus environmentalism, there is little reason to believe that this institution will continue to oppose the trends in the model. Therefore, the institution weakens but does not disprove the predictive model, and should remain in the analysis.

A fourth potential source of bias is that differing perceptions of campus sustainability based on job classification might affect responses, independent of campus affiliation. For example, campus presidents might view campus sustainability initiatives more positively than recycling coordinators, which could bias results based on which individuals respond from a particular campus. To test this possibility, I ran linear regressions testing for differences in SLS based on job classification, controlling for institutional affiliation. Model 1 classified jobs into Administration, Operational, Faculty/Student, and Other, since fewer job classifications allows for a more powerful analysis. Model 2 used the original 15 job classifications. The results were similar: no statistically significant differences in SLS based on job classifications exist, although administrators (Model 1) and Presidents or their representatives (Model 2) tend to rate their institutions higher than other respondents. Similarly, the number of years working at an institution and respondents’ environmental sustainability knowledge do not affect SLS, controlling for institutional affiliation. Therefore, response biases based on position, years associated with the campus, and environmental knowledge are not significant problems.

The fifth potential major problem is determining the direction of causality among important predictors and outcomes. The model outlined in Chapter II outlines a dominant pattern of causality, although I do not assume linear causation (as shown by the feedback loops in the Figure 2.2). One limitation of using bi-variate correlations and multi-variate regression as analytical tools is that cyclical patterns of causation are not easily
discernible (although complex relationships are explored in the following chapter on case study research). To test alternative patterns of causality, I reran the main model substituting each of three independent variables for the dependent variable of SLS. The results support the predicted pattern of causation, as predictive power is decreased in all three regressions as compared to the original model. More specifically, using SLS, collaborative approach and enlightened self-interest rationale to predict transformational leadership leads to a very weak predictive model (adjusted $R^2 = -.01$). Predicting collaborative approach is less problematic (adjusted $R^2 = .13$), but the vast majority of the predictive power is attributable to SLS (beta=.475; p=.007). The model predicting enlightened self-interest rationale is far more robust (adjusted $R^2 = .41$), but this predictive power is also largely confined to SLS (beta=.704; p=.000). Overall, reversing tests of linear causality provides support to hypothesized patterns of causation, including the idea that institutions alter organizational conditions and leadership rationales in positive ways as they become sustainability-leaders. The final chapter of this dissertation will discuss how systems thinking could be used to further clarify the directional relationships between the key constructs discussed in this chapter.
CHAPTER V

COMPARATIVE CASE STUDY RESULTS

This chapter presents case studies of two similar campuses that differ greatly in the intensity of their sustainability initiatives. The first section analyzes Institution X, a college or university with strong, well-known environmental efforts. The second section analyzes Institution Y, a college or university with weaker, largely unknown efforts. The third and final section compares the experiences of the two institutions. The major goal of this chapter is to support, expand or refute the model presented in Chapter II and refined through the survey data presented in Chapter IV through the experiences of and parallels between Institution X and Institution Y. The findings reveal that the original model works well in terms of predicting conducive organizational conditions, strategies and rationales for environmental success, but fails to link these conditions to a catalyst for action, emphasize the importance of interpersonal relationships and differing motivations among diverse stakeholders with environmental interests, and account for the controversial nature of the term and concept of sustainability.

Institution X

This section analyzes sustainability efforts at “Institution X” (XU) by: providing an institutional profile; assessing XU’s survey responses; outlining the institutional environmental history; analyzing organizational conditions, driving forces, rationales,
barriers, usage of the concept of sustainability and attention to social issues, and outcomes associated with environmental efforts; and assessing the findings through the lens of the theoretical framework outlined in Chapter II (see Figure 5.1). Chapter III describes the methodology used for this case study. Overall, XU is an emerging sustainability-leader demonstrating most organizational conditions and processes hypothesized to lead to robust environmental programs. However, Institution X is focused on “greening” as opposed to sustainability, and has not yet influenced most students or operational staff through its environmental efforts. The case study at XU suggests revisions of the original theoretical framework by emphasizing image-seeking behavior, transformational leaders, interpersonal relations among diverse stakeholders, environmental planning, personal ethics, institutional strategic positioning, and the controversial nature of the term and concept “sustainability”.

Institutional Profile

Institution X has a profile similar to many colleges and universities in the Midwestern U.S. 

Institution X is a moderate-sized public institution located within a small city and within approximately 200 miles of major urban areas, although the area surrounding the city in which XU resides is overwhelmingly rural. XU is considered a “Tier 3” institution by the U.S. News & World Report (www.usnews.com), and is classified as an “Intensive Doctoral/Research” institution by the Carnegie Foundation for the Advancement of Teaching (www.carnegiefoundation.com). Institution X offers a full range of academic programs (over 200 undergraduate degrees, nearly 100 masters degrees and over 10 doctoral degrees), although the institution’s roots are as a teacher-training college. Institution X’s campus spans nearly 1,000 acres, with large quads

\[\text{xvii The demographic information provided is limited due to confidentiality assurances provided to XU.}\]
Figure 5.1: Organizational Factors and Environmental Outcomes at Institution X

**Conditions**
Transformational Leaders
Image-focused
Collegial
Conservative

**Drivers**
Interpersonal Relationships
Leadership
Serendipity

**Barriers**
Low Priority;
Organizational Boundaries (e.g., faculty-operations);
Lack of Student Activism

**Rationales**
Enlightened Self-Interest, including ethical obligation and strategic positioning

**Usage of “Sustainability”**
Sporadic: Many leaders dislike and distrust the term, but others are attempting to integrate it;
Social Issues Excluded from Environmental Debates

**Outcomes**
Several Tangible Outcomes and Institutional Commitments, but Few Operational Initiatives and Far-reaching Activities;
Not an Institutional Sustainability-Leader, but Better than an Environmental Leader
separating most buildings, which range in size greatly. The campus is surrounded on all sides by urban or suburban areas. XU’s operating budget is over $200,000,000 while its endowment is over $100,000,000. Institution X employs over 2,000 individuals (over 800 full-time faculty) and is the largest employer in its county. Almost 90% of XU’s students are “white, non-hispanic”, approximately 90% of XU’s students are from in-state, and 2% are international. Many XU students are first generation college students, and most students, faculty and staff live near the campus during the academic year.

Survey Data (Quantitative Comparison)

According to the theoretical framework presented in Chapter II and the survey data presented in Chapter IV, colleges or universities which are liberal/progressive, ethical, collaborative and collegial, and image-focused tend to have the most robust sustainability programs. Survey data from Talloires Declaration signatories particularly emphasize the importance of collaborative decision making structures and focus on image. Leading institutions also tend to have transformational leaders who initiate environmental efforts from the top, and follow a sustainability-leadership rationale derived from enlightened self-interest and leadership commitment. The seven surveys that Institution X returned provide a quantitative comparison to the other institutions in the sampling frame (Table 5.1).

According to survey responses, XU is statistically (p<.01) more conservative, progressive and ethical than the sample average. XU scores particularly high comparatively (p<.01) in having both bureaucratic/hierarchical organizational structures and, paradoxically, collaborative decision making processes. XU has a strong positive internal image comparatively (p<.01) as well as significantly (p<.01) stronger positive

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xviii All comparisons in this subsection are based on one-sample t-tests comparing Institution X’s mean score with the sample (i.e., the 56 responding U.S. Talloires Declaration signatories) mean.
Table 5.1: Comparison of Institution X to All Survey Respondents

<table>
<thead>
<tr>
<th>Survey Question/Construct^ix</th>
<th>Institution X Mean (N=7)</th>
<th>Survey Mean (and Standard Deviation)xx</th>
<th>T-Value of Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal</td>
<td>2.33</td>
<td>3.47 (.86)</td>
<td>-10.03**</td>
</tr>
<tr>
<td>Progressive</td>
<td>4.00</td>
<td>3.56 (.52)</td>
<td>5.84**</td>
</tr>
<tr>
<td>Conservative</td>
<td>3.67</td>
<td>2.85 (1.03)</td>
<td>5.94**</td>
</tr>
<tr>
<td>Ethical/Moral</td>
<td>4.14</td>
<td>3.66 (.52)</td>
<td>6.84**</td>
</tr>
<tr>
<td>Bureaucratic/Hierarchical</td>
<td>4.50</td>
<td>3.49 (.79)</td>
<td>9.57**</td>
</tr>
<tr>
<td>Collaborative</td>
<td>4.14</td>
<td>3.52 (.53)</td>
<td>8.77**</td>
</tr>
<tr>
<td>Positive Internal Image</td>
<td>4.43</td>
<td>3.63 (.61)</td>
<td>9.77**</td>
</tr>
<tr>
<td>Positive External Image</td>
<td>4.29</td>
<td>3.88 (.48)</td>
<td>6.33**</td>
</tr>
<tr>
<td>Transformational Leaders</td>
<td>4.18</td>
<td>3.83 (.45)</td>
<td>5.86**</td>
</tr>
<tr>
<td>Enlightened Self-Interest Rationale</td>
<td>4.26</td>
<td>3.53 (.57)</td>
<td>9.53**</td>
</tr>
<tr>
<td>Leadership Commitment Rationale</td>
<td>4.00</td>
<td>3.24 (.72)</td>
<td>7.89**</td>
</tr>
<tr>
<td>Stakeholder Pressure Rationale</td>
<td>3.52</td>
<td>3.14 (.45)</td>
<td>6.82**</td>
</tr>
<tr>
<td>Short-term Benefits Rationale</td>
<td>3.50</td>
<td>3.61 (.63)</td>
<td>-1.31</td>
</tr>
<tr>
<td>Sustainability Efforts “Come from the Top”</td>
<td>4.43</td>
<td>2.94 (.74)</td>
<td>13.14**</td>
</tr>
<tr>
<td>Sustainability Efforts “Come from the Bottom”</td>
<td>4.00</td>
<td>3.72 (.72)</td>
<td>2.90**</td>
</tr>
<tr>
<td>Considered a Sustainability-Leader Internally</td>
<td>4.29</td>
<td>2.77 (.87)</td>
<td>13.05**</td>
</tr>
<tr>
<td>Considered a Sustainability-Leader Externally</td>
<td>3.86</td>
<td>2.98 (.97)</td>
<td>6.80**</td>
</tr>
<tr>
<td>Sustainability in Operations</td>
<td>3.47</td>
<td>3.26 (.58)</td>
<td>2.69**</td>
</tr>
<tr>
<td>Sustainability in Curriculum</td>
<td>3.93</td>
<td>3.55 (.62)</td>
<td>4.57**</td>
</tr>
<tr>
<td>Sustainability in Research</td>
<td>4.11</td>
<td>3.36 (.91)</td>
<td>6.21**</td>
</tr>
<tr>
<td>Sustainability in Service</td>
<td>4.14</td>
<td>3.70 (.69)</td>
<td>4.73**</td>
</tr>
<tr>
<td>Sustainability in Actions/Policies</td>
<td>3.98</td>
<td>2.76 (.71)</td>
<td>12.75**</td>
</tr>
<tr>
<td>Sustainability-Leadership Scale/Score (SLS)</td>
<td>3.93</td>
<td>3.32 (.58)</td>
<td>7.77**</td>
</tr>
</tbody>
</table>

** Statistically significant at the p<.01 level.

^ix See Chapters III and IV for a full discussion of the constructs.

xx The institutional mean and standard deviation for all 56 colleges or universities which responded to the survey (see Chapter IV).
external image and transformational leaders. XU is far less liberal (p<.01) than average. Therefore, Institution X appears to be an institution with political conditions that are not particularly conducive to institutional sustainability-leadership, according to the theoretical framework presented in Chapter II. The high scores on being politically progressive are inconsistent with the high scores on being liberal and low scores on being conservative. This conservative orientation, with a progressive streak, will be explained during the qualitative discussion of the case study, but is significant because it contradicts the hypothesized correlation between liberal institutional politics and environmental-leadership. Moreover, the bureaucratic/hierarchical nature of decision making structures at XU contradicts the hypothesized negative correlation between bureaucracy and environmental progress, but is mitigated in part by the strong presence of a collaborative/collegial environment, as explained further in the following sections.

XU stands out (p<.01) as an institution where “campus sustainability efforts come from the top” using enlightened self-interest and leadership commitment as a rationale, while XU also has statistically more (p<.01) efforts coming from the bottom, and use of stakeholder pressure as a sustainability-leadership rationale. There is no statistically significant relationship between XU and the sample average in terms of the use of short-term benefits as a sustainability-leadership rationale. These findings indicate that environmental issues enjoy strong support from the top and bottom of the organizational hierarchy, which is a very strong predictor of environmentally beneficial outcomes according to the theoretical framework. Moreover, environmental advocates at XU are adhering to a strategy of presenting sustainability as a long-term, ethical institutional strategy. Therefore, environmental issues are well positioned for success according to predictions about drivers and rationales/motivations in the theoretical framework.

XU is extremely strong comparatively (p<.01) in terms of considering itself a sustainability-leader internally and – to a lesser degree – externally. In terms of sustainability outcomes, XU is significantly (p<.01) stronger than the sample average in
all sustainability components (research, service, curriculum and operations), but excels particularly in actions/policies while lagging comparatively in operations. XU’s total sustainability-leadership scale/score (SLS) is far above the average (p<.01). Therefore, stakeholders at XU consider their institution a leader and model for sustainability.

Overall, XU excels in the majority of the hypothesized predictors of sustainability-leadership – except in terms of being a liberal institution and lacking bureaucracy – and has a particular proclivity toward image and reputation-based approaches with support from top leadership, and results of high-level policies and actions (Table 5.1). The major significance of these findings is that XU provides a test of the relative strength of the organizational conditions hypothesized to predict institutional environmental success. Specifically, Institution X demonstrates how a conservative institution with a hierarchical structure can be successful in promoting environmental issues when other organizational conditions and strategies are favorable. The implication is that while the conducive organizational conditions outlined in the model are important to promoting success, they differ in their predictive power and the absence of some of the conditions does not prevent environmental success. The remainder of this case study explores the relationship between self-described environmental sustainability-leadership on a survey and results obtained through interviews, document analysis and observations.

**History of Environmental Initiatives**

Campus-wide environmental initiatives began their formal phase approximately 10 years ago at Institution X, with the creation of a committee designed to “raise environmental consciousness”. A high-level administrator\(^{xxi}\) (who remains one of the driving forces behind campus environmental initiatives) – drawing upon the enthusiasm

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\(^{xxi}\) The title of this administrator cannot be revealed due to confidentiality restrictions.
of a small, loosely affiliated group of faculty with environmental interests – commissioned this committee. The committee generated a report with recommendations on curriculum “greening”, which led to faculty environmental training, funding for external grant writing, the creation of five environmental minors and the sponsoring of forums. These activities raised the visibility of environmental issues but did not permeate deeply into the culture of the institution, nor reach far beyond the committed core of faculty that led implementation efforts. One interviewee described these efforts as “muddling along” since no standing body existed to oversee environmental initiatives.

In 2000, members of the original faculty committee and other interested faculty approached the same supportive administrator to reinvigorate an environmental committee, in part because XU’s President had signed the Talloires Declaration in the intervening period and in part because the administrator had announced his/her upcoming retirement. The administrator agreed, and this effort expanded to include a steering committee and 10 sub-committees, which together made up a task force of almost 100 individuals, including mainly faculty, but also staff, administrators and students.

Beginning with a kick-off reception and ending with a closing ceremony, this task force produced a report (during the 2000-2001 academic year) with nearly 200 action items on XU becoming a sustainable campus and implementing the Talloires Declaration. The leaders of the task force prioritized these action items – some of which have potentially far-reaching implications, but described by many as “reasonable” and “sensible” – into a top 10 list, including items such as auditing, increasing environmental literacy, initiating community outreach, and operational measures such as energy efficiency increases as well as vehicle fleet and recycling improvements. The supportive administrator immediately adopted some of these recommendations, such as making summer funding available to advance the action items and granting course-release time to two faculty members to serve as green-initiatives and green-funding coordinators. Other action items
were held until a more permanent environmental coordinating body could be formed, which was a major recommendation of the Talloires Declaration committee.

At the beginning of the 2001-2002 academic year, the Environmental Steering Committee (ESC) – which reports directly to the supportive administrator – formed, after careful selection of members to include mainly faculty involved in previous efforts, but also administrators, staff, community members and students. The ESC includes at least one faculty member from all of XU’s colleges as well as five staff (including the green-initiatives and green-funding coordinators), one representative each from business affairs, development and student affairs, at least one community member, and at least one student. The ESC meets monthly, and its first charge is implementing the top 10 action items from the Talloires Declaration committee report as well as developing and monitoring new initiatives. According to its mission statement, the ESC serves as the “single point-of-access for information regarding activities addressing sustainability campus-wide.”

There has been great attention to process throughout XU’s greening initiatives and the ESC formation. For example, speakers at public forums are carefully coordinated in terms of content and context. Each person asked to serve on the ESC received a formal invitation from the administrator. Each ESC meeting is organized around three themes: “Celebrate” (i.e., report on positive events); “Facilitate” (i.e., make connections and move the process forward); and “Anticipate” (i.e., create a long-term vision and be aware of future possibilities). The formal reports and events emphasize institutionalization, providing incentives and inspiring activities that benefit the earth and the local community. Participation and enthusiasm are monitored through feedback forms.

In contrast to the survey data presented in the previous section, XU’s environmental sustainability-leadership position is emerging and not yet clearly established, as many initiatives are in the initial stages and environmental issues are not
widely recognized by administrators, faculty, staff or students as a core competency of the institution. Moreover, initiatives are heavily concentrated in Academic Affairs and often do not include Operations, students, the President’s office, governing board or the local community. The current process and goal are to expand from the base of committed faculty and the supportive administrator to create an institutionalized, broad coalition to move forward on many environmental fronts. The stage in the campus environmentalism process is important from an analytical perspective because it provides a snapshot of an institution attempting to position itself as an institutional sustainability-leader. From a theoretical perspective, the position as an emerging sustainability-leader is important because of the emphasis on process (which is not reflected in the original theoretical framework). XU’s “greening” process reveals that, beyond the hypothesized elements for environmental success, an institution must have leaders with a clear environmental vision and a plan for achieving this vision. Thus, moving toward institutional sustainability is more than a matter of acquiring support and resources, but also requires a guided strategic planning process. The process at XU emphasizes inclusion of diverse stakeholders, celebrating successes, providing incentives and using a committee structure to prioritize and advance initiatives.

**Organizational Conditions**

One of the main objectives of this case study is to generate new hypotheses about and assess the relative strengths and weaknesses of the organizational conditions hypothesized to correlate with campus sustainability efforts: positive image and reputation, collegial/collaborative decision making structures, liberal/progressive political orientation, ethical orientation and transformational leaders. Stakeholders at XU – ranging from top administrators to students – exhibit a remarkably strong orientation toward maintaining and improving a strong internal and external image. Most
interviewees believe that XU has a positive image currently (although visibility at the national level is limited), but needs to improve in the future. Since XU is – in the words of one interviewee – a “second-tier institution”, strategic positioning is a high institutional priority, and has a personal effect on all stakeholders. This desire for a higher-profile, more positive image underlies nearly all environmental activities and strategies, as will be explained in the following sections. Therefore, XU demonstrates that image-seeking can be a strong predictor of environmental effort at the institutional level, and might be particularly important in institutions seeking a national reputation.

Although survey data indicate a propensity toward a bureaucratic, hierarchical decision making structure at XU, the on-site evidence points to a more collaborative approach. Many interviewees’ describe XU as a place where faculty are “close” to their colleagues and students. Students and faculty from outside the Midwest indicate pleasant surprise at the level of collegiality and friendliness at XU. Decision making processes are relatively open and collaborative, although interviewees (particularly faculty) also expressed complaints about the level of bureaucracy and attempts to control the institution from the top. Interviewees often cite these generally collegial conditions as a necessary background and framework for environmental activities. The implication is that an environment where key stakeholders interact frequently and collegially can prevail over the typical frustrations with bureaucracy and hierarchical relationships, and lead to a conducive atmosphere for environmental advancement.

One area in which Institution X does not fit the model is in terms of political orientation. XU is conservative and even “anti-liberal”, as indicated by interviewees. The community surrounding XU is very conservative, as is the overarching State Legislature and the majority of the student body. This conservatism is often implicated as a major barrier to environmental activity, particularly by liberal faculty and students who are from elsewhere in the country. However, as discussed in more detail in subsequent sections, some environmental supporters try to turn the conservatism and
subsequent lack of environmental effort outside the campus into a strategic advantage (i.e., fulfilling a previously ignored niche).

In terms of ethics and morality, interviewees and the documents analyzed do not reveal strong opinions about the ethical orientation of the institution as a whole. However, as discussed in the “Rationale” subsection, environmental initiatives are often promoted as the “right thing to do”. Therefore, the case study of XU reveals that ethical stance does not appear important as a background organizational condition for environmental success (or, at a minimum, is difficult to measure), but can emerge as a strategy for environmental advancement.

According to the data presented in the previous subsection, Institution X has transformational leaders (Figure 5.1). The interviewees agree that their leaders have a long-term vision and are inspirational, which helps drive environmental initiatives. The supportive high-level administrator is particularly visionary on environmental issues, while other administrators are typically not opposed to or particularly interested in sustainability. The culture of XU promotes the development of transformational leaders, as there appears to have been a succession of transformational leaders. Therefore, XU reveals that charisma and long-term vision of leaders, as they mesh with the institutional culture, generally are important to advancing environmental issues, especially when combined with a top environmental advocate.

The question that this section seeks to answer is: What factors create a rich atmosphere for environmental progress at XU? The answer is that many interviewees believe that the culture and leadership at Institution X are simply “right” for environmental issues to be advanced. Although most stakeholders could not pinpoint the exact conditions that provide this subjective feeling, the relatively tight-knit community and focus on improving image emerge as leading factors, as does the presence of strong leaders who are willing to take reasonable risks. Environmental advocates implicate the conservative political climate in the local community, state government and student body
as a major barrier to progress, as demonstrated through perspectives from interviewees and survey respondents. This political conservatism is often displayed through appointments to the governing board of individuals who are politically opposed to environmentalism.

Driving Forces

The survey presented in Chapter IV reveals that many campuses have organizational conditions similar to those at XU. Therefore, the key question is: Why is XU in the unusual position of beginning to enact these conditions and move toward an environmental-leadership position (according to interviewees, survey respondents, nonprofit leaders and my comparative assessments)? The answer appears to be a combination of interpersonal relationships, leadership and serendipity (Figure 5.1). The interpersonal relationships part of this equation refers mainly to the core group of faculty behind most environmental initiatives and attempts at institutionalizing the efforts. Their contacts and personalities meld to form a tight working group, and are instrumental in attracting additional people and resources. The majority of these faculty are not in XU’s natural resources program, which is small and dominated by a scientific approach. Environmental supporters tend to be in emerging, applied and even unexpected areas of research and practice, such as information technology, architecture, history and business. This result was largely unexpected and unpredicted by the theoretical framework. The implication is that while the formation of a core group appears to be as important as predicted, environmental activists and supporters can come from a wide variety of disciplines. Moreover, it is possible (although not tested directly through this study) that the strength of a core group of environmental supporters is directly related to the diversity of its membership.
Many core faculty and supporters come from politically liberal areas far from XU’s campus, and import strong environmental values into Institution X. Many of these individuals did not envision living and working in the conservative Midwest, but came to XU due to the tight academic job market. Some of these “displaced individuals” describe the disparity between their original homes with Institution X and the surrounding community as a motivation to pursue campus environmental issues. The “chemistry” (as one interviewee described it) between these individuals and others at Institution X injects vitality and enthusiasm into campus-wide environmental issues and continually draws more support. This notion of contrasting values between individuals and their institutions, communities and local/state government as a driving force for environmental action was unanticipated in the theoretical framework, and may be more broadly applicable. The diffusion of ideas from environmentally progressive areas into environmentally conservative regions via “displaced” faculty and students was not tested directly through this study, but may be a driving force for environmental action at campuses in conservative regions. This proposition supports the original model by demonstrating the importance of community and governmental forces in driving campus environmental initiatives. However, in this case, the community and government general opposition to environmental initiatives, as opposed to their support of environmentalism, helps drive efforts, although can also serve as a barrier, as discussed in subsequent subsections.

Leadership on environmental issues comes mainly from interested faculty in terms of outreach and implementation. However, by all accounts, the most important individual drawn in by core faculty is the supportive administrator. This individual provides institutional legitimacy for environmental efforts by commissioning and serving on committees as well as reporting on activities to stakeholders at all levels in the organizational hierarchy. For example, this administrator reports on efforts to XU’s governing board, which has been supportive of environmental efforts (or, at a minimum,
not resistant to environmental efforts). This leader assesses the political feasibility of proposed environmental activities and ensures that requests are, in his/her words, “reasonable”. Moreover, this individual provides funding and works with campus leaders who “do not have environmental issues on their radar screen”. This leader has been at XU for over 35 years, and wants environmental issues to be the key piece of his/her legacy.

This leader is retiring from his/her administrative role at the end of the 2001-2002 academic year, although will remain at XU for another two years as a liaison on environmental issues. In fact, the anticipated departure of this leader is one of the main reasons that campus environmental efforts were reincarnated in 2000. As one interviewee put it and others echo (including the leader): “Without (his/her) support, these efforts wouldn’t go far.” Another common sentiment is: “(He/She) is in it for all the right reasons, and (he/she) controls the purse strings.” When asked about the environmental committee process, one student reported: “I didn’t feel confident until (he/she) starting taking action on the committee recommendations at the end.” One interviewee claims that “in the very deepest soul of (the administrator, he/she) is green.” One interviewee concludes, “If (the administrator) wasn’t pitching this, it would just be a bunch of us grumbling around trying to do something small. (His/Her) leadership brought this to a much more visible level.” These claims provide strong anecdotal evidence for the assertion in the literature and supported through the survey data in the previous chapter that support of at least one key institutional leader is vital to the success of campus environmental initiatives. Overall, leadership on sustainability initiatives at XU comes from the top of the organization as well as the faculty level, although, as discussed in the “barriers” subsection, enthusiasm from students and staff is often lacking.

Several interviewees used the term “serendipity” – being at the right place at the right time – when asked about the main driving force for environmental issues at XU.
The basic premise (as repeated in many interviews) is that the people and processes have “come together” and turned out favorably for environmental action. This serendipitous outcome is often equated with the presence of an interdisciplinary, environmentally-focused research and teaching institute at Institution X. The institute’s leaders coordinate the ESC and related activities. Thus, a central force is pulling together the necessary elements in a focused, strategic manner to capitalize on serendipitous events on campus as well as the larger acceptance of the importance of environmental issues in society. Many interviewees describe this process as a natural evolution, aided by strategic positioning. This final driver was not predicted by the theoretical framework, but positively affects the strength, psyche and outcome of environmental initiatives at XU and possibly on other campuses.

**Rationale**

According to interviewees and key documents, the main rationale behind Institution X’s movement toward a sustainability-leadership position is a combination of two factors: the belief that ensuring resources for future generations is an ethical obligation and the potential strategic positioning benefits (Figure 5.1). These factors form the basis for the enlightened self-interest concept (outlined in Chapters II and III), hypothesized to be the strongest rationale for sustainability efforts. Stakeholder pressure and leadership commitment are also part of the sustainability-leadership rationale at XU, but these factors – hypothesized in the theoretical framework to be less effective – are limited to the specific and limited cases discussed in the previous subsection. Short-term rationales such as cost savings and – to a lesser degree – regulatory compliance are applicable, but are not major considerations except for certain operational initiatives, according to interviewees. The theoretical framework predicts that these short-term rationales are not effective in inspiring action. Therefore, XU appears to be following the
motivational path predicted to be the most robust in promoting environmental actions and is moving toward the expected positive results.

Many interviewees speak of their personal commitment to advancing environmental issues as “the right thing to do”. Environmental Steering Committee (ESC) events reinforce this notion with keynote addresses emphasizing the moral imperative behind environmental action and incorporating inspirational readings from environmentalists such as Wendell Barry, Aldo Leopold and Rachel Carson. Most campus environmental efforts and commitments are voluntary and intrinsically motivated, and thus require personal commitments. For example, one interviewee said that he/she “sleeps better at night” knowing that he/she is working for a good cause. Some interviewees cite poor environmental conditions in the community surrounding Institution X as their inspiration to improve the ecology of the campus. Others cite an ethical obligation to ensure that graduates are environmentally responsible citizens since the main product of XU is “educated individuals”. One interviewee said that her “soul is green” and that she would never give up working on these issues, even though they can be frustrating, because “this would be like quitting being a mother…I can’t just suddenly stop. This is something that I do every day and I want my name on it.” Many interviewees explained that there is no “hammer” driving XU to be more environmentally responsible, only a committed core of individuals trying to convince everyone that it is the right thing to do.

Given the widespread recognition of environmental problems, many faculty and students believe that a moral rationale is more likely to reach more people – particularly students – than any other approach. Thus, involved individuals are pursuing sustainability in part because of a perceived ethical obligation and the intrinsic satisfaction that goes along with “doing the right thing”. As one interviewee explained it, “We are not going green because of fear of what will happen if we don’t, we are doing this out of duty.” One interviewee summarizes the attitude as “genuine deeply felt
concern”. Overall, environmental initiatives are drawing on the deep commitment of some individuals to make environmental responsibility – as one interviewee put it – “part of the very fabric of the institution”. This moral obligation and the intrinsic satisfaction that is attached to pursuing environmental issues proves to be the strongest component of an environmental-leadership rationale at XU.

The second strongest environmental-leadership rationale at XU is strategic positioning in terms of public relations, reputation, image and establishing a niche. Since Institution X does not have a strong national presence and is overshadowed by other campuses in the region, the governing board, faculty, administrators and even students see environmental efforts as an opportunity for distinction. Environmental-leadership is a largely unfilled niche in the region, and XU has programs approaching environmental issues from unique perspectives that could benefit from broader recognition and resources. Making environmental issues a core competency is desirable and feasible – particularly given the increased global recognition of ecological problems - and is the way that most interviewees promote their environmental efforts to deans, administrators, the governing board and others higher in the organizational hierarchy.

A major concern at XU is that, after many years of steady increases, enrollment is leveling off. Thus, stakeholders view environmental-leadership as a way to bring in more students and high-quality faculty. This strategic positioning rationale – described by one interviewee as making XU “special” - is widespread among active environmental faculty and students, and is well-received by the administration and board as well as state legislators. One interviewee summarized this rationale as a “healthy mix of pride and competitiveness”, which captures both the individual intrinsic and institutional extrinsic motivations that comprise the “enlightened self-interest” sustainability-leadership rationale outlined in Chapters II, III and IV. As predicted by the initial propositions, this rationale is likely to lead to significant advancements at XU, according to interviewees and survey respondents. On a broader level (and to expand the original propositions),
this approach supports the assertion that individuals seek to express moral orientation through actions within their institutions. Environmental advocates can use this characteristic to draw in supporters at all levels. At high levels within the institutional hierarchy, environmental advocates are likely to be effective by promoting environmental advancement as a key component of organizational advancement.

**Barriers**

The observational evidence, document analysis and interviews reveal a wide range of barriers to environmental initiatives at Institution X, including almost all the constructs from the theoretical framework and survey. As predicted by the theoretical framework, the most commonly cited institutional barrier is that environmental issues are not a high priority (Figure 5.1). One interviewee claims that these issues are “not a crisis” and another reports that sustainability is not an “exciting issue”. With the exception of the previously discussed supportive administrator, the administration and governing board displays – in the words of one interviewee – “benign neglect” for environmental issues, meaning that they are not opposed but that these issues are not a high priority. “We have many people with lots of enthusiasm but so little top-down support…SOME administrators are supportive, but not enough,” wrote one survey respondent. In other words, Institution X reveals what the case study literature and survey data show: Environmental issues are not competing effectively with other issues for the limited time of institutional decision makers.

Without a high priority being placed on environmental issues by campus leaders, state legislators, the local community and students, it is hard to overcome, as one interviewee put it, “the inherent sluggishness of a university” as well as the potential capital costs involved in operational greening. One high level administrator believes: “Our desire to do the right thing often comes up against budget constraints and other
realities.” Thus, maintaining the energy and competing for the limited time of committee members and others is a struggle. One interviewee describes this situation as simply a lack of an institutional “environmental ethic”. One student claims: “The truth is the students, professors, and staff, save some, are apathetic in a way I have never seen before and have no interest in the opportunity (XU) has to be a leader in academic and institutional environmental efforts.” In any case, the lack of priority placed on environmental issues by the vast majority of administrators and other campus leaders – with the notable exception of the one committed administrator – drives the expected “trickle down” effect, meaning that low priority equates to a lack of fiscal and human resources available for environmental initiatives at all institutional levels.

Organizational boundaries form an important secondary barrier for Institution X (Figure 5.1). For example, departmental and disciplinary boundaries form barriers to sustainability research and teaching, as the promotion and tenure process often overlooks interdisciplinary work, despite seed funding for sustainability provided by the supportive administrator. However, several interviewees report that the collegial nature of XU allows for wide latitude in the promotion and tenure process, which make these decisions less of a barrier at Institution X than at other campuses. This collegiality does not eliminate – in the words of several interviewees – “turf battles” and “internal competition” over departmental support and credit for environmental research. An additional organizational boundary problem – working across functional (e.g., teaching, operations, service) boundaries – is very acute at XU. The Division of Academic Affairs typically initiates environmental initiatives, and while the goal of the Environmental Steering Committee (ESC) is to expand environmental thinking into the consciousness and practices of students and operations staff, this crossing of functional boundaries has not yet been successful. The rift between faculty and operations staff was apparent during the ESC meeting as well as interviews. The basic problem is that Operations functions independently of the academic mission of XU, and has no desire – in the words
of one environmental leader - to be “put in the spotlight” on environmental issues. As one interviewee claims, “Facilities doesn’t want academics to know what we’re doing”, which leads to rejection of basic measures such as participating in the Environmental Protection Agency’s Green Lights Program.

One interviewee describes Operations as a separate “fiefdom” where budgets are the highest priority and doing the right thing is far less valued. A common sentiment from Operations employees as well as some faculty is that academics do not understand the complexities of physical operations, and thus have little expertise or authority in “greening” facilities. Conversely, many faculty claim that Operations personnel do not understand environmental and social impacts. One interviewee stated that Operations staff “don’t want to try new things”. The animosity between Academic Affairs and Operations is palpable, and has led to misinformation and mistrust on basic efforts such as recycling. These struggles are more acute when discussing major projects. For example, administrators in Operations assert that academics would need to sacrifice a major or department to offset the costs of upgrading the heating plant, an argument that does not sit well with faculty or Academic Affairs. Although many interviewees predict and hope for a thawing of relationships between Operations and Academic Affairs through involvement in the ESC, currently there is little receptivity from Operations staff to the academic-based efforts. This is particularly problematic since at least five of the Talloires Declaration committee’s “Top 10 List” of environmental priorities directly relate to operations. According to comments on surveys, this situation is not unique to XU, and represents a major barrier to campus sustainability unanticipated by the theoretical framework.

The students at XU are not activists, according to survey responses, interviews and observational evidence (Figure 5.1). In fact, student apathy is commonly cited as a major barrier to environmental efforts, as there is no push “from the bottom”. There are students interested in environmental issues who have formed several ecology-based
clubs. However, these clubs have not been involved in campus issues, except for a few initiatives such as the organization of Earth Day events.

Several student environmental activists are frustrated with the slow pace of change, resulting in disengagement and criticism of the process and progress. One student claimed during an interview: “I myself will not be impressed until I see (Institution X) stop talking and start implementing some of their ideas. The meetings and committees were extensive, but until action debouches from them we are no better than a school that makes no efforts at all.” Beyond the small group of environmentally active students, it is unclear what the level of receptiveness to sustainability is among the student body. Some interviewees claim that students are “somewhat sensitive”, as shown by pleas for increased recycling and vegetarian food in dining halls. In other words, there may be latent environmental interest among students that could be unlocked by faculty and student activists. Others claim that most XU students are uninterested in environmental issues because they are first-generation college students looking to obtain a degree that will help them get a better job. Some interviewees believe that this generation of students lacks an environmental ethic because they spend large amounts of time indoors and mainly come from very conservative families. One student proclaims: “A lot of people just don’t care.” Another exasperated individual claims that there is “malaise in the student body for damn near everything”. The disappointing enrollment in the environmental minors is often offered as evidence of this malaise. In any case, the ESC is hoping that their activities will “trickle down” to students. Currently, student efforts are not driving initiatives, which – as the theoretical framework implies - impedes their visibility and effectiveness. This situation contradicts the typical profile of an environmental-leader displayed through the surveys, and points to the relative power of faculty to drive environmental initiatives even without strong student support initially. The long-term viability of this approach remains questionable.
Sustainability and Social Issues

As reflected in the language of this case study, Institution X uses the terms “greening”, “environmental”, and – to a lesser degree – environmental “responsibility”, “stewardship” and “citizenship” as descriptors of environmental efforts. The term and concept “sustainability” bounces in and out of the language of campus environmentalism – sometimes in the phrase “environment and sustainability” – but has remained largely peripheral (Figure 5.1). Documents (including transcripts from environmental committee opening and closing receptions) and on-campus observations reveal that “sustainability” is not the dominant term, but is appearing more as time progresses. For example, in the most recent environmental report, the term “sustainability” appears only 7 times in eighteen pages, in the context of education and outreach as well as in the official sub-title of the Environmental Steering Committee (ESC): “a campus-wide sustainability clearinghouse”. This limited usage of sustainability reflects rifts in theory and practice over the term by environmental leaders at XU. As one interviewee describes it, environmental efforts “dance around” sustainability.

The main reason sustainability does not appear often in the discourse about environmental issues is that many core environmental supporters do not believe it is a valuable concept. These individuals describe sustainability in remarkably harsh terms: “too vague”, “too used”, “not substantive”, “ill-defined”, “devalued”, “useless”, “a badge with no action”, “too easily manipulated”, too “motherhood and apple pie” and even “nasty”. One interviewee comments that he/she “wanted substance not possible with sustainability.” Many interviewees agree that sustainability is problematic because – as one ESC committee member stated – “everyone is all for it, but no one knows what it is.” Generally, the natural scientists argue that sustainability is too imprecise, while the social scientists worry about corruption of the term by special interests. For example, one ESC member believes that land developers use sustainability – or, more precisely, “sustainable
development” – to sound environmental while destroying the land. Another interviewee explains that his/her supervisor renamed a proposed committee from “sustainability” to “environmental and recycling” so that people would understand what the committee does. Moreover, some ESC members are concerned that the use of “sustainability” could have negative political consequences because some departments that the ESC is trying to draw in do not accept or understand the concept. Thus, several environmental leaders are steering campus efforts and documentation away from using the term. They believe that the concept of sustainability’s ambiguity, complexity and potential for misuse outweighs any benefits, particularly since the term “green” has institutional history and general comprehension.

Conversely, some ESC members believe that “sustainability” is a useful concept, and are bringing it slowly into the efforts and language, partly to reflect the emerging environmental language. As one interviewee describes it: “Sustainability is really what we’re all about.” Another proclaims that sustainability should be used once people are already committed, but not as a recruiting and outreach tool since it is not well understood. In part due to these individuals, sustainability appears in specific applications, such as in the title of two of the new minors. Generally, however, there is a bias against the use of sustainability and – as one participant describes it – “widespread mistrust of the term”. Therefore, XU’s experience runs contrary to the notion put forward in the theoretical framework that the concept of sustainability can be a motivational force for organizational change. In fact, the “greening” process at Institution X reveals the possibility that the use of the term “sustainability” can be controversial and actually undermine environmental efforts when critical stakeholders are skeptical about the concept’s value.

When “sustainability” is used at XU, it is typically preceded by “environmental” (or “environmentally” in the case of “sustainable”), as in the institution’s five-year plan. Part of the explanation for this limitation on the traditional three parts of sustainability –
social, economic and environmental – is that several environmental leaders believe “sustainability” is (in the words of one leader) “for people concerned with social issues, not environmental issues.” As portrayed by all interviewees, documents, observations and survey results, XU’s environmental efforts almost completely exclude social issues (Figure 5.1). The reason behind excluding social issues varies from participant to participant, but often focuses on the perception that it is “too hard”, that there is “no need to include it (social issues) yet”, and simply that they are “not very into it”. Moreover, some participants express reluctance to expand into social issues for fear of infringing on a local community that – as one interviewee describes it – is “in the dark ages of social responsibility.” In addition, departments involved in social issues are not typically involved in environmental efforts, and may view inclusion of social issues as an infringement on their turf. Therefore, there is little support for expanding the ESC’s current efforts into social issues (except as they directly overlap with their environmental goals) because leaders and participants believe that the efforts are not “mature enough” to adequately address social issues.

While one participant describes the ESC as “dipping its toe into” social issues, these issues have not been “tackled” yet but may be once the ESC becomes “established”, in the words of one interviewee. There is little recognition of the link between environmental and social issues portrayed in the literature review and theoretical framework. This lacking connection could be explained by XU’s reliance on terms that relate only to environmental issues (i.e., “greening”) as opposed to the broader term “sustainability” when portraying environmental initiatives. Alternatively, dealing with social issues might occur only after environmental initiatives are firmly established at an institution, as an additional responsibility of environmental advocates. These unexpected new propositions are not fully explored in this study, but represent a significant expansion of the original proposition.
Outcomes

Despite the positive answers from survey respondents, it is difficult for many participants to articulate the accomplishments of Institution X’s environmental initiatives (Figure 5.1). There are some widely-cited successes, such as establishing five environmental minors, funding of grant writing, initiating faculty training seminars, and appointing a green-initiatives coordinator and green-funding specialist. The environmental minors are particularly impressive, as they are interdisciplinary and revolve around themes such as “technology and the environment”. Students in all five minors are introduced to the three components of sustainability (they must take ecology, environmental economics and environmental ethics) as well as a “closing course” entitled “Creating a Sustainable Future” (in addition to courses specific to the theme of the minor). Many interviewees express dismay that enrollment in these minors is relatively low. The inclusion in XU’s five-year strategic plan of promoting “a learning climate that values … environmental sustainability” is also a significant accomplishment. Progress toward this goal is measured by how many of the Talloires Declaration report’s recommendations are implemented. Many participants point to the creation of the ESC as a “big deal” that ensures serious consideration of environmental concerns. As one interviewee described it, the ESC “pumps up the volume”. Others point to the growing momentum for environmental issues encouraged by the ESC’s myriad public outreach efforts, including distribution of “green tips”, environmental forums and a comprehensive website. Absent from this list of accomplishments are operational initiatives, including the presence of a solid recycling program. Moreover, campus environmental audits have not been conducted, although they were listed on the “Top 10 list” of XU’s Talloires Declaration committee.

Most interviewees believe that XU is a leader on environmental issues – relative to other colleges and universities – because of the broad institutional commitment as well
as the recognition and visibility of their activities. Environmental issues are becoming a policy and funding priority, largely because of the supportive high-level administrator. Moreover, XU’s efforts – particularly the formation and activities of the ESC - are beginning to foster a sense of community and common mission among environmental participants and advocates, which is generating energy and enthusiasm (if not a wealth of concrete actions and supporters yet). Environmental efforts are coalescing and picking up momentum and supporters, as shown by the increasing visibility and effectiveness of the ESC. While Operations, Student Affairs and students are not strong supporters of environmental initiatives, ESC members are beginning to feel as if their actions will eventually permeate the day-to-day lives of students, faculty and staff. The careful consideration and institutionalization of environmental activities is designed to ensure that momentum continues to build. As one core member put it, “we no longer feel like lone rangers.”

The initiatives and progress at XU reveal that the self-reports of institutional environmental-leadership on the surveys are exaggerated, but only slightly. XU is establishing itself as an environmental-leader through innovative curriculum developments, minor outreach successes and – perhaps more importantly – the institutionalization of environmental efforts through formal committees, goals and policies. This development alone places Institution X in an elite class of institutions moving toward sustainability despite the lack of action and enthusiasm from operations staff and – to a lesser degree – students. However, XU will maintain its environmental-leadership only if the goals currently in place begin to be achieved and additional supporters and resources are rapidly drawn in. With the supportive administrator’s departure from his/her powerful position at the end of the 2001-2002 academic year and the uncertainty over the commitment of his/her successor, partnerships with Operations and students (and the local community) need to form rapidly, as exclusion of these key stakeholders leaves the efforts vulnerable to labeling as purely “academic”. Studying
XU after the departure of the supportive administrator would further reveal the influence of leadership on environmental progress at colleges and universities. Currently, XU’s progress reveals that institutional policies, goals and committee can initiate the long-term, collaborative efforts that could lead to a more sustainable campus in the future.

Interviewee responses to a question about their vision for XU’s environmental future bring significant challenges to the forefront. Almost all interviewees want “something tangible”, such as solar panels, a new “green building”, native plantings, alternative fuel vehicles, more bike paths or even basic recycling program improvements. Many stress the need for a more natural campus environment, one that preserves green space and reduces vehicular traffic. Most emphasize the need to increase involvement of students, staff, and faculty. Interviewees also stress the need for more interdisciplinary, collaborative research and teachings. These visions reflect the continued desire to advance from “muddling along” with a few key faculty and administrative supporters to establishing a cross-boundary strategic and permanent niche for XU as a leader in environmental stewardship. As one interviewee put it, the goal is to produce a “symphony” out of discordant elements pushing for environmental-leadership. This “symphony” would begin to approach the notion of sustainability-leadership outlined in the theoretical framework in terms of coordination and stakeholder support by inducing a large number of environmental “champions” and supporters.

Summary

Institution X excels in encouraging research and curriculum greening as well as incorporating environmental issues into campus-wide planning and policies. XU lags in operational greening as well as linking environmental and social issues to strive toward “sustainability” in a meaningful sense. However, XU is establishing cultural changes and an institutional base that could lead to systemic, comprehensive sustainability programs.
that address underlying causes of environmental and social problems. Thus, XU partially fits the description of a “sustainability-leader” outlined in the theoretical framework in Chapter II. Of greater theoretical importance than the outcomes at Institution X is the process of becoming an emerging sustainability-leader. The model predicts that colleges and universities that are ethical, progressive, collaborative, reputation- and image-conscious, and have transformational leaders are more likely to emerge as sustainability-leaders. XU fits the model well in terms of reputation- and image-consciousness because stakeholders are very concerned and aware of Institution X’s exterior and interior face. XU fits the model well in terms of collaborative approach and transformational leadership because many stakeholders cite collegiality and general “good feel” of the campus as well as visionary leadership as baseline conditions for environmental success. However, there is little evidence of ethical orientation, and the interviews revealed a strong bias against progressiveness and liberalness. These contradictions of the theoretical framework are partially mitigated by the fact that many of the environmental leaders are progressive and liberal, and cite conservatism as a major weakness in environmental efforts. Thus, Institution X has the major organizational conditions hypothesized to form the base for institutional sustainability-leadership (Figure 5.1). XU clarifies the theoretical framework by highlighting the importance of image-seeking behavior, presence of transformational leaders (and a transformational leadership culture) and the inter-personal relationships that arise from a collegial atmosphere. Moreover, this case study of XU reveals that conservative politics and hierarchical/bureaucratic decision making are barriers to environmental progress, but can be overcome by a substantial number of individuals with environmentally-progressive ideas and the ability to work through organizational barriers.

A diverse group of committed faculty is enacting the positive organizational conditions at XU to propel the institution into an emerging leadership position. Contrary to the predictions of the model, XU is not an institution in which concern for ecological
and social issues has penetrated stakeholders at lower levels (i.e., students) and the organizational ethics, image and culture. Institution X’s potential transformation involves the intentional and strategic yet fortuitous mixing of a group of people at the right time, as opposed to the more straightforward path implied by the model. However, as predicted by the model, leadership commitment to environmental issues is key. At XU, there is one top administrator showing strong commitment and leading efforts, but there are many faculty environmental leaders and other administrators with some degree of environmental interest (e.g., the President). Perhaps more importantly, there is no active opposition to environmental interests by administrators, the governing board or other institutional leaders. Moreover, the ethical interests of individuals and the long-term strategic interests of institutional leaders (i.e., enlightened self-interest) dominate over short-term stakeholder and compliance pressures as rationales for environmental initiatives. Environmental change agents have encountered the barriers hypothesized in Chapter II to be the most problematic; they have not been successful in establishing environmental issues as a priority, in attracting a large number of students, or in working across organizational boundaries (particularly in increasing collegiality between academics and operational staff and administrators). The majority of stakeholders at XU believe that sustainability is a controversial term and concept (which is best left in the classroom), and that local environmental efforts are not ready to incorporate social issues.

Overall, environmental advocates at XU are attempting to institutionalize environmental initiatives that reach out to students, faculty and staff. While the results largely remain to be seen, Institution X offers important lessons about the process of organizational change for sustainability that leads to clarifications, revisions and new propositions in the theoretical framework.
Institution Y

The case study of “Institution Y” (abbreviated by YU) is structured in a manner similar to the Institution X case study (see Chapter III for methodology details), and follows the theoretical framework outlined in Chapter II closely. The first subsection provides an institutional profile while the next two subsections analyze YU’s survey responses and describe the institution’s environmental history. The next five subsections assess organizational conditions, driving forces for environmental action, rationales, barriers, use of sustainability and incorporation of social issues, and environmental outcomes (Figure 5.2). The final subsection assesses the findings with respect to clarifications, revisions and refutations of the theoretical framework. Overall, Institution Y is beginning to coordinate and advance environmental efforts by capitalizing on recent social, political and personnel changes, as well as the 1993 signing of the Talloires Declaration. However, based on stakeholder perceptions and actions taken, YU is not an environmental-leader and will have to overcome significant political, interpersonal and financial barriers to move into a leadership position. The case study at YU revises the evolving theoretical framework by emphasizing the importance of leadership support, political orientation, personal commitments, cooperation, competitive strategic positioning, a spark or catalyst, and the controversial nature of sustainability in creating environmental organizational change.

Institutional Profile

In many ways, Institution Y is a typical Midwestern public institution, and has a profile strikingly similar to Institution X.xxii Institution Y is moderate-sized and although

xxii The demographic information provided is limited due to confidentiality assurances provided to YU.
Figure 5.2: Organizational Factors and Environmental Outcomes at Institution Y

**Conditions**
Conservative
Lack of Image/Reputation
Lack of Moral Orientation
Transformational Leaders

**Drivers**
Core Group of Students & Faculty
Environmental Center

**Barriers**
Funding
Resistance to Change
Low Priority of Env. Issues
Interpersonal/Political Conflicts

**Rationales**
Strategic Benefits;
Debate Over Use of Ethical Appeals/Cost-Effectiveness

**Usage of “Sustainability”**
Sporadic: Most Stakeholders Dislike and Distrust the Term but Others are Attempting To Integrate It;
No Long-Term Sustainability Vision;
Social Issues Excluded from Environmental Debates

**Outcomes**
Not an Environmental Leader
Some Pockets of Relatively Strong Activities but No Coordination
Optimistic about Potential for Future Environmental Leadership
it is located in a rural area, it is not far from a moderate-size city and within approximately 200 miles of several major urban areas. YU is considered a “Tier 3” institution by the *U.S. News & World Report* (www.usnews.com), and is classified as a “Intensive Doctoral/Research” institution by the Carnegie Foundation for the Advancement of Teaching (www.carnegiefoundation.com). Institution Y offers a full range of academic programs (over 200 undergraduate degrees, over 50 masters degrees and over 15 doctoral degrees), although the institution’s roots are as a teacher-training college. YU’s operating budget is nearly $200,000,000, and Institution Y employs over 750 full-time faculty. The campus is sprawling, with large parking lots on two borders, student living areas on one border, and a small town on the fourth side. There are buildings of all sizes, often with large lawns between them, and the campus has many active building-renovation projects. Many students and faculty commute daily or weekly from surrounding areas. The student population is relatively homogeneous, with a visible lack of minorities, and a population described by one interviewee as “very blond, very blue” and another as “somewhat parochial”. Approximately 92% of XU’s students are “white, non-hispanic”, and many students are first-generation college students. Approximately 94% of YU’s students are from in-state while 1% are international.

**Survey Data (Quantitative Comparison)**

Five individuals at Institution Y returned surveys, although three respondents jointly filled out one survey. According to the theoretical framework presented in Chapter II, institutions which report a lack of ethics/morality, strong reputation and image, and transformational leaders, and which are conservative and hierarchical will
tend to be environmental-laggards. YU ranks the lowest of the 56 responding institutions in terms of having an ethical/moral culture (Table 5.2). However, respondents believe that YU has leaders who display more transformational leadership than the average responding institution (p<.01). YU ranks the lowest in terms of being progressive, is well below average in terms of being liberal (p<.01), and well above average in terms of being conservative (p<.01). Institution Y is slightly above average (not statistically significant) in terms of collaborative decision making and bureaucratic/hierarchical organizational structure. YU respondents report a less favorable internal image (p<.01), but a positive external image that is not significantly different from that of the average responding institution. Thus, YU displays the hypothesized profile of a sustainability laggard in terms of political orientation and ethics as well as (to a lesser extent) organizational image, but displays the opposite tendency in terms of transformational leadership. The survey results for organizational decision making and structural features are ambiguous in terms of the theoretical framework. Therefore, the case study of YU explores the relative power of organizational conditions hypothesized to detract from environmental progress, and the relative power of the presence of transformational leaders to reverse this trend.

In terms of rationales, YU displays the predicted pattern of a laggard with the lowest presence of enlightened self-interest and stakeholder pressure, third lowest leadership commitment rationale, and above average short-term (i.e., cost-effectiveness and regulatory compliance) rationale (p<.01) (Table 5.2). Therefore, the reasons for pursuing environmental initiatives are opposite of the predicted path for success. In terms of environmental outcomes, YU scores the lowest of all institutions on operations, 3rd lowest on policies/actions, below average on research and service (p<.01), and

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xxiii All comparison in this subsection are based on one-sample t-tests comparing Institution Y’s mean score with the sample mean.
### Table 5.2: Comparison of Institution Y to All Survey Respondents

<table>
<thead>
<tr>
<th>Survey Question/Constructxxiv</th>
<th>Institution Y Mean (N=5)</th>
<th>Survey Mean (and Standard Deviation)xxv</th>
<th>T-Value of Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethical/Moral</td>
<td>2.20</td>
<td>3.66 (.52)</td>
<td>-21.06**</td>
</tr>
<tr>
<td>Transformational Leaders</td>
<td>4.40</td>
<td>3.83 (.45)</td>
<td>9.47**</td>
</tr>
<tr>
<td>Liberal</td>
<td>2.20</td>
<td>3.47 (.86)</td>
<td>-11.17**</td>
</tr>
<tr>
<td>Progressive</td>
<td>2.00</td>
<td>3.56 (.52)</td>
<td>-22.50**</td>
</tr>
<tr>
<td>Conservative</td>
<td>4.20</td>
<td>2.85 (1.03)</td>
<td>9.78**</td>
</tr>
<tr>
<td>Bureaucratic/Hierarchical</td>
<td>3.60</td>
<td>3.49 (.79)</td>
<td>1.03</td>
</tr>
<tr>
<td>Collaborative</td>
<td>3.60</td>
<td>3.52 (.53)</td>
<td>1.14</td>
</tr>
<tr>
<td>Positive Internal Image</td>
<td>3.00</td>
<td>3.63 (.61)</td>
<td>-7.66**</td>
</tr>
<tr>
<td>Positive External Image</td>
<td>3.80</td>
<td>3.88 (.48)</td>
<td>-1.24</td>
</tr>
<tr>
<td>Enlightened Self-Interest Rationale</td>
<td>1.77</td>
<td>3.53 (.57)</td>
<td>-23.22**</td>
</tr>
<tr>
<td>Leadership Commitment Rationale</td>
<td>2.20</td>
<td>3.24 (.72)</td>
<td>-10.70**</td>
</tr>
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<td>Stakeholder Pressure Rationale</td>
<td>2.14</td>
<td>3.14 (.45)</td>
<td>-16.58**</td>
</tr>
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<td>Short-term Benefits Rationale</td>
<td>4.30</td>
<td>3.61 (.63)</td>
<td>8.25**</td>
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<td>Sustainability in Operations</td>
<td>1.56</td>
<td>3.26 (.58)</td>
<td>-23.74**</td>
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<td>Sustainability in Actions/Policies</td>
<td>1.37</td>
<td>2.76 (.71)</td>
<td>-14.60**</td>
</tr>
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<td>Sustainability in Research</td>
<td>2.35</td>
<td>3.36 (.91)</td>
<td>-8.21**</td>
</tr>
<tr>
<td>Sustainability in Service</td>
<td>3.44</td>
<td>3.70 (.69)</td>
<td>-2.84**</td>
</tr>
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<td>Sustainability in Curriculum</td>
<td>3.60</td>
<td>3.55 (.62)</td>
<td>0.60</td>
</tr>
<tr>
<td>Sustainability-Leadership Scale/Score (SLS)</td>
<td>2.46</td>
<td>3.32 (.58)</td>
<td>-11.10**</td>
</tr>
<tr>
<td>Ecological Consequences</td>
<td>1.40</td>
<td>3.25 (.73)</td>
<td>-19.13**</td>
</tr>
<tr>
<td>Integrated into Decision Making</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Considered a Sustainability-Leader Internally</td>
<td>1.00</td>
<td>2.77 (.87)</td>
<td>-15.20**</td>
</tr>
<tr>
<td>Considered a Sustainability-Leader Externally</td>
<td>1.00</td>
<td>2.98 (.97)</td>
<td>-15.20**</td>
</tr>
<tr>
<td>Sustainability Efforts “Come from the Top”</td>
<td>2.20</td>
<td>2.94 (.74)</td>
<td>-7.55**</td>
</tr>
<tr>
<td>Sustainability Efforts “Come from the Bottom”</td>
<td>3.60</td>
<td>3.72 (.72)</td>
<td>-1.23</td>
</tr>
</tbody>
</table>

** Statistically significant at the p<.01 level.

average on curriculum. Institution Y scores the 5th lowest on the sustainability-leadership score/scale (SLS) (p<.01). YU scores the lowest on factoring ecological consequences in

xxiv See Chapters III and IV for a full discussion of the constructs.

xxv The institutional mean and standard deviation for all 56 colleges or universities which responded to the survey (see Chapter IV).
decision making and perception of the campus as a sustainability-leader internally and externally (p<.01). Finally, YU scores below the average responding institution in campus sustainability efforts “coming from the top” (p<.01), but statistically average on campus sustainability efforts “coming from the bottom”. Overall, YU’s survey responses indicate a lack of environmental activity, although there is an indication of some environmental pressure from lower levels of the organizational hierarchy.

Survey respondents portray YU as a conservative institution with transformational leaders who are not seriously considering environmental sustainability issues except in the context of regulatory compliance and cost savings. Institution Y does not have a strong environmental sustainability program or image, and does not have champions of environmental initiatives at higher levels of the organizational hierarchy. Thus, YU meets the hypothesized conditions for lack of environmental-leadership in terms of political orientation and leadership rationale, but differs in terms of presence of transformational leaders. These findings are significant because they represent a case study which tests how an institution that is not predicted to be an environmental-leader can make limited progress and work around major barriers. The implication is that while the “negative” organizational conditions outlined in the propositions are hindrances to success, they are not immutable and differ in their relative power. The remainder of this case study explores the relationship between self-described lack of environmental progress on a survey and actual results determined through interviews, document analysis and observations.

**History of Environmental Initiatives**

According to interviewees and the documents analyzed, Institution Y’s environmental strength is in its curricula. YU has an Environment Center – created over 30 years ago – which administers environmental studies and science majors, and serves
as a focal point for environmental activities. The number of students enrolled in environmental studies or science fluctuates over time, but currently has fallen to approximately 200 students. There are also small programs (less than 30 students) not affiliated with the Center in Environmental Health, Environmental Technology, and Environmental Education. Introductory environmental courses fulfill a core requirement for all undergraduates at YU and thus have enrollments of over 200 students per semester. The Environmental Center conducts a number of service activities and plans to start a residential environmental living-learning community. Furthermore, the Center engages in a small-scale research program, focusing on wildlife ecology and stream restoration. However, the Environmental Center is not part of an institutionalized body to oversee campus-wide environmental education, research and outreach. Therefore, YU is a case where environmental initiatives have been largely contained within the institution’s teaching role, and are now beginning to expand.

The most visible operational environmental program at YU is the recycling program. Initiated in 1986 to collect aluminum, the program is described as a “classic bottom-up” initiative, run by students using outside grant money. In 1993, a full-time recycling coordinator was hired, and the program has slowly expanded to collect mixed office paper, newspapers, cardboard, aluminum cans, glass bottles, plastic bottles, wooden pallets and scrap metal in separate streams. Recycling bins and signage are prevalent on campus, although are just beginning to appear in some crucial places such as the floors of student residence halls. External grant money covers the capital costs for the program – including the purchase of trucks and bins – although institutional funding and increased custodial support are currently under consideration. Overall, although some interviewees proclaim that it is “not a great program” and all agree that “recycling has never been a priority to upper-level administration”, recycling is stable, visible and becoming institutionalized. Generally, the presence of recycling represents the first sign of operational environmental activity at most campuses.
In terms of physical operations, all interviewees, survey respondents, documents and observations point to the fact that Institution Y is – in the words of one interviewee – “not a green campus”. The campus is dominated by parking lots, roads (with few bike lanes), and manicured lawns which require heavy pesticide usage. A 1997 proposal for “greening the campus” reports: “The University presently has no natural green space. It is a spacious campus with manicured lawns, statuesque trees and broad fields for intramural play, but it is completely lacking in natural areas.” The modest activities called for in the report – such as converting a degraded wetland into a study site and expanding natural-area holdings – were never funded by the administration, although some recommendations were implemented by the Environmental Center. Faculty-initiated operations recommendations – which are rare – meet stiff resistance, according to interviewees. Generally, environmental operational improvements have been initiated only to comply with regulations or to save money. The switch from coal to natural gas for the campus power plant, and environmental health and safety programs – such as a “chemical orphan program” which finds “homes” for unwanted chemicals – both fall into this category. Overall, while there appears to be some receptivity from several operations managers at YU to environmental issues, there have been few environmentally motivated operations initiatives. This situation ranks Institution Y near the bottom of Talloires Declaration signatories (according to survey responses).

At the institutional, administrative and governing board level, there has been little involvement in environmental issues. However, the past President of YU signed the Talloires Declaration in 1993. While conflicting accounts of the process and rationale behind this signature exist, the most credible story is that the Provost, with the assistance of the former Director of the Environmental Center, urged the past President to sign. There was no tangible effect of this signature, nor even widespread knowledge of this action until quite recently. In April 2001, two faculty members decided that the political and social climate was right to gather 15 of their colleagues to write a letter to the current
President to request action on the Talloires Declaration. A committee formed in response to this letter during November 2001. The reason for this rediscovery of signing the Talloires Declaration and the potential effects on the campus are explored later in this section. Overall, the committee formation represents the first significant sign of institutional commitment to environmental issues since the creation of the Environmental Center in the 1970’s and the hiring of a recycling coordinator in 1993. While the results of this new commitment and other emerging efforts remain to be seen, YU is far from being an environmental or sustainability-leader. As one interviewee describes it, “Every once in a while issues come up regarding the environment, but they come and go”. Another interviewee claims: “These things occur occasionally.”

From a theoretical perspective, Institution Y’s position at the beginning stages of environmental management is important because of the opportunity to portray a snapshot of how environmental-change processes can be initiated. YU’s initial “greening” process reveals that environmental advocates feel a strong need for support and official sanctioning “from the top” prior to establishing a long-term plan and vision. Change agents believe that they might gain this support because they trust and are generally supportive of their leaders, although environmental issues are not an institutional priority at the present time. There is a strong belief that an initial outlay of resources for an environmental committee could catalyze environmental interest and stakeholders.

**Organizational Conditions**

In terms of the predictors of campus sustainability-leadership, as discussed in the survey data subsection, YU is a conservative campus. “This is a conservative farm town, which is reflected in the Board of Trustees and the administration,” reports one interviewee. However, many faculty and students come from more liberal urban areas. Thus, while the dominant political orientation is conservative and even “anti-
intellectual”, there is a progressive, liberal element to the campus, to which the presence of a Women’s Center and the views of the student paper attest. However, the campus is “not activist at all” on social issues, according to interviewees. Therefore, similar to XU, Institution Y represents an institution with a dominant conservative paradigm, but also a progressive undercurrent imported from surrounding areas.

As displayed in the survey results, Institution Y’s image and reputation are not clearly identifiable. In terms of academics, a student described YU as “mediocre at best”, and several interviewees indicate that Institution Y has a “better than deserved” reputation. Others believe that Institution Y simply does not have an external image and reputation. Thus, while YU might be held in “fairly high regard” by the outside world (as one faculty member stated) or might simply be ignored, internal stakeholders are not convinced that a positive reputation is deserved. Institution Y competes fiercely for in-state students, and there is a “general interest in creating an image”, according to one interviewee. The President is focused on image and reputation building, although environmental issues have not factored into strategic positioning. Therefore, while YU does not lack focus on image (as the theoretical framework predicts for environmental-laggards), there is concern about reputation, as will be discussed in the following subsections. However, YU has not yet followed XU by linking environmental issues to image enhancement, and thus provides evidence that general image-seeking behavior will not lead to environmental improvements in the absence of the linkage.

The decision making structure, approach and culture at YU are also not readily apparent. The surveys and interviewees concur that Institution Y operates in a “top-down” manner on policymaking, and that collaborative decision making is not emphasized in high-level decisions. However, stakeholders disagree about the level of collegiality and collaboration at lower levels. Some interviewees claim that YU faculty and students stay largely within their academic departments and do not engage in cross-disciplinary or cross-departmental interactions. Others claim that YU is very collegial,
that interdisciplinary work is encouraged, and that faculty, staff, students and administrators tend to share common experiences and concerns. Interviewees either questioned the ethics and morality of top decision makers, or did not have an opinion, despite the recent emphasis on values from the President. Overall, Institution Y appears to function largely as a bureaucratic, hierarchical campus although, as one interviewee put it, “the bottom has some room to maneuver.” Thus, the collaborative and ethical approach to decision making hypothesized to be essential to sustainability-leadership and found at XU does not appear to be strong at YU. This provides evidence for the assertion that if stakeholders do not find the institution collegial, environmental progress is difficult.

According to interviewees, leadership at YU appears to be adequate and perhaps even transformational. Stakeholders have faith in their leaders – particularly the President – in terms of taking on reasonable risks and providing a vision and action plan for the future. One interviewee states, “Generally, the administration is long-term visionary.” Thus, YU appears to have a culture that promotes a succession of transformational leaders. However, there is skepticism about administrative efficacy and influence on the campus environment. Moreover, advocates believe that environmental issues are not “on the radar screen” of administrators, as will be discussed in the following subsections. Overall, YU’s leadership does not appear to be inspiring environmental and social action (as the theoretical model predicts for transformational leaders), but may not be inhibiting activities. As one survey respondent writes: “We have good leaders. They just do not have an environmental agenda.” Therefore, YU raises the possibility that the presence of transformational leaders is advantageous to environmental improvement (as predicted and shown in the surveys and at XU), but is only relevant when environmental issues appear on the agenda of these well-respected decision makers.
Driving Forces

While the previous subsection indicates that the model would not predict strong sustainability-leadership from Institution Y, environmental initiatives do occur within these somewhat constrained organizational conditions. This subsection explores the groups of people who drive environmental activities. The consensus view of survey respondents and interviewees is that “a concerned few” or a “core group of involved and very interested individuals” are the main environmental organizers and activists. An interviewee claims that this group consists of “students and faculty who really care about the environment and environmental education.” A survey respondent claims: “A small number of faculty, staff and students are committed strongly to sustainability – BUT are not heard by the university community.” However, these individuals are “committed, but powerless”, and charismatic leaders and strong personalities with significant leverage are noticeably absent. Generally, environmental advocacy comes from three sources: the Environmental Center, faculty, and students.

The official hub of the campus environmental community is the Environmental Center, which administers two environmental majors with a five-person staff, including a Director. The Center is loosely affiliated with the student environmental activist group, houses the recycling coordinator, and manages small-scale campus greening projects such as a native flower planter box. However, the Center does not tend to actively impact the administration or other decision makers on campus sustainability. This failure to take an active role might be explained in part by the Center’s relative lack of influence. The Center is located physically at the edge of campus. The Center is not a department, which means that there are no tenured or tenure-track faculty – only instructors (i.e., individuals who teach courses and may be full-time, but are not tenure-track faculty), administrators and affiliated faculty (who are evaluated by other departments for promotion and tenure). The lack of tenure-track faculty creates a lack of “allegiance” (as
one interviewee put it) that degrades the Center’s influence. Moreover, the Center is not connected with other environmentally-oriented majors or departments, such as Environmental Health and Environmental Technology. Thus, power is diffused over stakeholders with conflicting agendas. In addition, the Center does not enjoy a high level of respect from faculty and students, and has a reputation for offering “easy” (in the words of one interviewee) courses and degrees. This lack of respect translates into major struggles for minor campus changes, such as the Center’s bid to take control of administering a 20-acre woodlot that was formerly a dumping ground. Nevertheless, the Center is the main driver of several visible environmental initiatives, although it has not been involved in campus-wide planning. As one interviewee put it, “The Environmental Center does support action, but is not effective at persuading administrators.” This situation raises the proposition that having an environmental “hub” may not be enough to garner widespread environmental support if the central body lacks the resources and respect to be a major force on campus.

Faculty who are not affiliated with the Environmental Center are driving several environmental efforts, such as initiating the committee to implement the Talloires Declaration. This committed but small and fractured cadre of faculty tends to be in fields not traditionally linked to environmental issues (e.g., philosophy, history and technology) as opposed to the natural sciences. As one survey respondent put it, “Most environmentally beneficial change is the product of professors.” However, there is much disagreement about the level of interest in environmental issues on the part of most faculty at YU. While one interviewee claims “I’m convinced it’s a major concern across all the faculty”, others disagree and claim that most faculty “don’t fully understand” and “don’t think it’s a major concern.” Other stakeholders believe that there is “some receptivity” among faculty, but that most are “neutral” and “don’t fully understand” environmental issues. The majority opinion on faculty support for environmental issues is summed up by one interviewee in the following way: “If given proper incentives,
motivations and encouragement, (faculty) will do it, but not on their own initiative.” Since most faculty have not been asked to engage in environmental efforts (beyond participating in recycling), it is unclear whether or what types of incentives are needed to draw in more environmental supporters. It is clear that only a small fraction of faculty are expressing environmental interest, and that these individuals have not been successful in acquiring additional resources and supporters.

Students are a weak driver of environmental initiatives, as compared to the Environmental Center and faculty, in part because of the lack of a history and receptiveness to social activism at YU. However, there is a small environmental activism movement based in a student group and linked with the Environmental Center. The student environmental group tends to focus on community and global issues – such as Staples’ use of old-growth forests in paper products – rather than on campus issues. However, it is active on certain issues, such as reducing Styrofoam usage in the dining halls and sponsoring Earth Day speakers and events. Generally, as one student put it, “Even Environmental Studies students aren’t necessarily prepared. Very few take the time to really get involved at the campus level.” There is no consensus about the environmental stance and receptiveness of the student body as a whole. One interviewee claims that “students in general are interested in the environment…They are aware of it.” Student environmental activists believe they have broad support, as demonstrated by a 1993 survey of students on willingness to participate in and pay for recycling, and the enrollment of over 300 students enroll each semester in introductory Environmental Studies courses. Other faculty and students disagree about the level of student environmental interest. “The average student takes very little interest. They just don’t realize the impact that every individual has on the environment,” claims one interviewee.

In any case, Institution Y demonstrates that environmental initiatives may struggle without student support and engagement, which contradicts the findings for Institution X.
Overall, there is a scattered grassroots movement to gather stakeholders at YU in support of environmental issues as a pressure group, and there are no clear environmental leaders in the administration, governing board or local/state government. Thus, the stakeholder pressure and leadership commitment drivers portrayed in the theoretical framework are fairly weak at Institution Y. Therefore, YU’s lack of progress supports the assertion that commitment of at least one institutional leader is key to advancing environmental issues, and that diverse stakeholders must work together for environmental improvement.

Rationales

The vast majority of communication promoting environmental programs directly refers to the strategic benefits to YU of becoming an environmental-leader, despite the survey results discussed in previous subsections. For example, the letter sent to YU’s President asking him/her to operationalize the Talloires Declaration includes the following statement: “We have the potential to distinguish ourselves from other … universities through our environmental-leadership and academic programs.” When a leading faculty member recently presented the Talloires Declaration and its potential implementation to YU’s Board of Trustees, he/she received “blank stares” until the potential as a “marketing tool” and “asset” was mentioned. One faculty member claims: “Unless (environmental programs are) pitched as a selling point, this campus will never be a hotbed of environmental activism.” Another faculty member states: “If they (the administration) can be convinced that this will bring about a positive image for YU, they can be easily brought on board.” The “Greening-the-Campus” proposal claims: “The University has an obligation to support projects which have a high potential to increase student recruitment and retention. This is such a project.” While some change agents stress the need to increase the sense of community as well as involvement with the local
community through environmental programs, the dominant theme in promoting campus
environmental programs is that these initiatives have great potential as a marketing tool. The divergence between this finding based on interviews and document analysis from the survey response likely reflects that fact that the institutional strategic positioning rationale is emerging as change agents become more experienced in their strategies. In other words, advocates have unsuccessfully tested other strategies, and are beginning to recognize the importance of strategic positioning, as the model, survey and case study of Institution X suggest.

As conceived in the theoretical framework presented in Chapter II, the “enlightened self-interest” environmental-leadership rationale includes ethical considerations as well as strategic positioning. At Institution Y, this linkage is not clear. Some faculty and students claim that environmental programs are presented as “the idea that if we don’t do something in the world, we’re in trouble.” Faculty in the Environmental Center and elsewhere are “passionately committed” to these issues (according to a survey respondent), and are trying to spread this passion as an ethical imperative. These individuals relate environmental and sustainability programs to ethical concepts like dignity, pride, and personal satisfaction, and believe this is the path to convincing the administration and others that environmental issues are important. However, other stakeholders disagree. While most environmental advocates believe that ethical considerations have merit, many also believe that there are much stronger arguments, such as strategic positioning or monetary gains. As one interviewee put it: “Saying ‘it’s the right thing to do’ gets you in the door sometimes, but other ways can be far more effective.” These individuals are not convinced that students, staff, faculty or administrators have the baseline environmental ethics and values required for effective use of ethical rationales for environmental programs. Therefore, change agents are divided over the use and utility of the ethical component of the enlightened self-interest rationale. The reason that this conflict exists at Institution Y and not at Institution X
appears to be the level of confidence in underlying environmental values among stakeholders. At Institution Y, advocates who were interviewed asserted that they are not sure if there is an underlying environmental ethic in stakeholders that can be “unlocked” through opportunities for involvement. Creating an environmental ethic is a far more difficult task than enacting an existing ethic. Therefore, identifying and testing the underlying values of stakeholders are critical to designing environmental change strategies.

Nearly all interviewees and survey respondents stress that financial issues are a major concern for Institution Y, and factor greatly into environmental decision making. However, environmental change agents are unclear about whether arguing that environmental programs can be cost-effective is a useful strategy. On the one hand, the following quote from an interviewee represents a common sentiment: “The key to all this…is to convince people that it is profitable to move toward sustainability.” This viewpoint highlights the fiscal benefits of energy efficiency, recycling, native landscaping, and attracting new students. According to interviewees, advocates of this approach believe that environmental issues are cost-effective in the short-term and strategic in the long-term, and this combination is a powerful incentive for decision makers such as the president and governing board to take action. On the other hand, many stakeholders believe that environmental programs should not be promoted based on finances. These individuals believe that long-term benefits and ties with the current strategic planning process should be stressed, and short-term costs should be recognized but not focused on. In other words, environmental programs will cost Institution Y more in the short-term, but should receive institutional funding and support based on their potential for future benefits. This difference of strategy regarding cost effectiveness has led to a mixed presentation of financial considerations to the administration, governing board and other decision makers. More generally, the diverging views highlight the
uncertain nature of advocacy strategies based on cost considerations (as predicted in the theoretical framework and demonstrated by the Talloires Declaration survey).

**Barriers**

Environmental initiatives at Institution Y have encountered the full range of barriers discussed in Chapters II, III and IV. As expected at a campus with small and scattered initiatives, the resistance to increasing environmental efforts has been widespread and powerful. Since environmental initiatives come from disparate and often conflicting groups of individuals, these barriers often prevail in inhibiting environmental-leadership on YU’s campus. According to interviewees and on-site evidence, the strongest barriers to advancing environmental initiatives include lack of fiscal resources, organizational resistance to change, lack of leadership, and interpersonal/political conflicts.

The first response of nearly every interviewee about what is inhibiting environmental progress at YU came down to one factor: money. The financial situation at Institution Y is unstable at best, and major budget cuts are expected. Thus, there is little money available for environmental programs, particularly since ecological issues are not a high priority within the campus’ administration and governing board as well as the local and state government. These budgetary problems are particularly vexing to facilities managers and others concerned about green buildings because the initial higher costs of environmentally friendly design and renovation typically cannot be surmounted, even if benefits can be accrued in the near future. One survey respondent summarizes the situation as follows: “Of course, money and fiscal concerns are always paramount.” For example, an operations manager points out that heating, cooling and ventilation systems are installed or upgraded based solely on the lowest bid, regardless of the operational costs of the system. This process favors environmentally inefficient systems, which are
more expensive over the long run. This problem is indicative of the constraints that environmental programs are faced with in times of financial difficulty or at any point when short-term costs and capital outlays are the overriding concern and environmental support among the administration is not strong.

The second and less tangible (yet often cited) barrier is a perceived resistance to organizational change. Described by some interviewees as organizational “inertia” and others as “tradition”, many stakeholders perceive YU as an institution that conducts business in a way that is often antithetical to the environment. For example, the recycling program is facing resistance because the appearance of recycling collection containers differs from traditional waste receptacles. Similarly, there is resistance to the use of native flowers to replace imported annuals, as the grounds managers are receiving requests to remove these “weeds” from the planter box. This resistance also translates into the academic realm, as many administrators are reluctant to require environmental literacy or to ask professors to incorporate environmental issues into courses. In general, YU’s situation demonstrates that resistance to organizational change can be a very strong barrier to environmental progress, particularly in the absence of proper incentive structures.

As one interviewee put it and all others agree, environmental issues are generally “not on the radar screen” of YU’s administration and governing board. There is no clear environmental leader within the administration, although there are several supporters. Some interviewees and survey respondents believe that the current administration is hostile to the environment, claiming that “the administration is not truly wedded to the idea of being a campus that even pretends to be sustainable.” However, the consensus is that the administration and governing board are – in the words of one interviewee – “not opposed, but not prioritizing it”, and most stakeholders believe it is a case of “benign neglect” and that “they just don’t think of it”. One survey respondent wrote: “I believe that the administration is interested in ‘sustainability’. However, it is not clear at what
cost.” YU’s past President was far more conservative than the present President, which provides hope to some environmental supporters. One interviewee claims that the current administration is “just beginning to be aware of this” and is “struggling with how to respond.” A staff member agrees and claims that “The heart is there to see this happen when it doesn’t impede on other responsibilities.” Another interviewee believes the administration “agrees in principle but (is) apprehensive, wary of boxes that you can be put into.” In other words, the current leadership is concerned about being classified as liberals if they commit to major environmental initiatives.

Since environmental issues are not typically a priority, environmental concerns are not a major issue during decision making. For example, negotiations with Pepsi for an exclusive soft drink contract included concerns about recycled-content and recycleability of containers in the early stages, but these issues were jettisoned in favor of increased profits in the final contract. This decision backfired somewhat, as the administration was forced by faculty and student pressure to provide funds to the recycling program to offset the lost revenues from Pepsi’s plastic containers (as opposed to aluminum cans). This contract negotiation supports the proposition that when environmental issues are not among the top priorities of the administration and governing board, and when no institutional leader is an environmental advocate, then environmental issues are typically not injected into organizational change processes and outcomes.

The fourth and perhaps most problematic barrier for environmental initiatives is the interpersonal and political conflicts which lead to lack of coordination among environmental supporters. The best description of this fractured situation came from one interviewee who claims that there are many “nests of activities”, but no one is clear what each nest is doing and no one is coordinating the efforts. For example, a group meets regularly about water pollution and scarcity issues on campus and elsewhere, but there is little coordination between this group and the Environmental Center. The Faculty Senate has a greening-the-campus group and the administration has an energy task force, yet
most students and faculty with environmental interests are unaware of these groups’ activities. There is no single source for environmental information and ideas on campus, since the Environmental Center does not have the authority, respect or resources to coordinate sustainability issues.

The first level of interpersonal and political conflicts occurs between faculty in various disciplines who have divergent views on the Environmental Center and its role in campus activities. Faculty also perceive different roles for themselves and their home department, often attempting to establish their own node of competence outside of the Environmental Program. Moreover, interviews reveal a striking lack of respect among faculty interested in environmental issues (at the Environmental Center and elsewhere) on a personal and professional level. This political and interpersonal infighting makes collaboration on environmental issues extremely difficult by dissipating power across disciplines and departments.

In addition, faculty are often at odds with the student environmental activist group. The relationship was so bad that, according to several faculty, the group’s advisors threatened to take away funding. The main disagreement centered on the acceptable level of activism as well as other philosophical and practical differences. Although the main faculty and students involved in this dispute are no longer at YU and the information on the conflict is mainly scattered hearsay, several interviewees described the “problem of whether students and faculty are talking” as a major concern and barrier to environmental progress. However, relationships between environmental students and faculty appear to have thawed during the 2001-2002 academic year, and collaborative initiatives are beginning to emerge.

The third level of political and interpersonal conflicts is between faculty and operations staff and managers. This common barrier is particularly acute at YU because the relationship is repeatedly described as non-existent by faculty and staff. Faculty have not been involved in the operations of the campus (and vice versa), and it is unclear what
the reaction will be if environmental faculty or staff attempt to cross this chasm. However, faculty and operational staff tend to be friendly on a personal level, according to some interviewees. Therefore, extending this relationship to professional projects does not appear to be out of the realm of possibility.

The final barrier is the lack of coordination is between the administration and interested faculty and students. While there is little evidence of an adversarial relationship between the administration and faculty, or between the administration and students, there is also not a strong record of collaboration. As described previously, the campus is run in a “top-down” manner, and faculty and students (as well as staff) traditionally have limited input into strategic decisions. For example, the master plan – which is revised every 10 years – is the key document guiding campus land-use planning and building construction and renovation, yet input from faculty, staff, students and the local community has not been welcomed. This process is indicative of the situation at YU, where interpersonal conflicts, politics and lack of coordination stymie most attempts at environmental improvement. This situation highlights the importance of a collaborative, collegial relationship between potential change agents and allies, as was found at XU and through the Talloires Declaration survey to be critical to environmental improvement. In the absence of these strategic alliances, moving environmental issues onto the agenda of decision makers is extremely difficult.

**Sustainability and Social Issues**

As reflected in the language of this case study, the term “sustainability” is used only sporadically when describing or implementing Institution Y’s campus environmental efforts. The Environmental Center’s introductory courses use the concept of sustainability as an organizing theme. Other humanities and social science courses use the term sustainability, although it is far less common in the natural science courses. The
term sustainability has only recently begun to creep into the language of campus environmentalism, and is being met with some resistance. For example, the letter asking the President to create a Talloires Declaration implementation committee mentions “environmentally sustainable development” once (in a quote from the Declaration itself), typically opting for “environmental responsibility”, “environmental-leadership”, “environmental consciousness” and “environmental stewardship”. The “Greening-the-Campus” report focuses on becoming a “green campus” and an “environmental leader”, using the term “sustainable” three times in ten pages (“sustainability” is not used at all).

Part of the reason for this limited usage is that several faculty who are leading environmental efforts view sustainability in a negative manner. These individuals referred to “sustainability” (or sustainable development) during interviews as a “mean term” that is “too hard”, “unrealistic”, “not reasonable” and an “oxymoron”. In their view, “environmental stewardship” or “environmentally progressive” are preferable because these concepts are achievable. On the other hand, at least one interviewee strongly supports the use of sustainability and calls it a “stroke of genius” as a compromise between environmental values and economic growth. While environmentalists could argue that this is not the intended usage of sustainability, several individuals at YU are amenable to sustainability for this reason. In any case, sustainability has not infiltrated the majority of dialogues and documents on campus environmental initiatives. Moreover, there is no apparent interest in incorporating social issues into the emerging interest in environmental issues at YU. This situation reinforces the proposition raised by the case study of Institution X that “sustainability” is controversial and not widely accepted even by environmental advocates. Therefore, in contrast to the original proposition, the concept of sustainability may be of limited practical value when skepticism among environmental advocates persists and when social issues are not considered part of environmental problems.
Under the assumption that the concept of sustainability can help generate a long-term vision for campus environmental initiatives (as asserted in Chapter II), the lack of such a vision and inability to move beyond recycling at YU are unsurprising. Interviewees struggled to generate ideas about how the campus would look, feel or be different if the current environmental efforts are successful. Many interviewees conveyed vague ideas that could be equated with sustainability, such as taking a more holistic view of the campus, implementing the Talloires Declaration or making environmental issues a higher priority and selling point. Most interviewees want to increase alternative transportation options and reduce car usage as well as to provide natural habitats on campus. Some interviewees want to make environmental literacy a core requirement, and greatly strengthen the reach of the Environmental Center. Others took positions that reflect the growth mentality that many sustainability advocates do not support, such as constructing more environmentally friendly new buildings. Overall, there was little coherence to these visions and little evidence of a long-term guiding perspective that includes social issues. According to the original theoretical framework, the concept of sustainability has the potential to provide such a long-term, integrated vision. Therefore, the lack of such a vision and approach at YU could be related to the lack of an emphasis on sustainability.

**Outcomes and Opportunities**

All interviewees and survey respondents agree: YU is not an environmental-leader. The following interviewee comment summarizes the dominant sentiment about campus environmental progress: “There are some things that we do well, but I would not put us at the top.” The environmental activities that invoke the most pride at YU are the educational activities of the Environmental Center, several small campus greening projects (including the reclaimed woodlot and prairies as well as a native flower planter.
box) and the recycling program (although respondents had mixed responses about the program’s efficacy). Many interviewees claim that these activities amount to more progress than on some campuses (particularly in the region), but all agree that other campuses have established leadership positions. Therefore, the relevant question is: Is YU poised to make significant environmental progress in teaching, research, service and operations? This question unleashed an overwhelming and nearly unanimous flow of optimism among stakeholders at Institution Y. Comments include: “We are trying to get aggressive”; “We are trying to make ourselves environmental leaders”; “Some doors have opened”; “Our strength is our potential”; “Potential is the highest that it’s ever been”; and “There is a window of opportunity”.

The creation of the official committee to implement the Talloires Declaration – as designated by the President and Provost – is one reason for the abundance of environmental optimism. The political calculations that went into the writing of the previously mentioned letter to the President (to ask for the committee) provide insight into the current favorable organizational conditions. The main faculty member behind the committee’s formation was aware of the Presidential signature of the Talloires Declaration in 1993, but realized at the time that it was more “symbolic than substantive” and did not feel that there was the institutional or leadership commitment to sustainability to warrant pursuing implementation. As one administrator put it: “Since that time, not a great deal has happened that looks responsive to that statement.” Therefore, the faculty organizer waited for eight years until determining that the conditions were right (in Spring 2001).

These conditions included the fact that other campuses are beginning to aggressively pursue environmental issues as a strategic niche, and that YU is focusing on improving its image. Moreover, the opening of a factory dairy farm near campus created controversy and raised the profile and level of support for environmental issues in the local community and campus. In addition, the current President is far more interested in
environmental issues than his/her predecessor was, and the governing board is not opposed to environmental issues. Other administrators and operational managers at YU also have environmental interests, including influential individuals in faculty governance. Finally, this faculty member realized that he/she now has the time to follow through on a commitment to chair the Talloires Declaration implementation committee. He/she could have also added the fact that Institution Y is currently revising its campus master plan, that the Environmental Center is proposing an Environmental Living Learning Center, and that the core values of the institution are being evaluated by the President. In any case, this professor’s calculations highlight the importance of competitive image-seeking behavior (i.e., establishing a niche) as well as personal commitments, Presidential leadership, and the necessity of a catalyst to spark environmental action. All of these factors were predicted in the theoretical framework, found during the case study of Institution X, and articulated through the formation of YU’s Talloires Declaration committee.

The Talloires Declaration committee has a difficult task because environmental issues have “never been done as a coordinated effort”, according to one interviewee. The committee has gathered a representative, powerful and diverse group of faculty, operations managers and administrators, although students are conspicuously absent. Prioritizing action items and achieving early successes will be critical to achieving long-term goals. Moreover, the committee will have to quickly link with two committees initiated by the Faculty Senate to assess incorporating alternative transportation and green space in the campus master-planning process. The committee will also need to link with the Presidential Vision and Values initiative to achieve its first goal of adding “environmental sustainability” to the core values of the institution. Many interviewees are skeptical about the committee’s chances of achieving this goal, which could have great practical implication. In addition, some stakeholders are concerned about the lack of direction of this permanent committee. However, the consensus sentiment about the
formation of this committee is excitement. Interviewees overwhelming claim that they are “thrilled to see it” and that “the fact that anyone is interested at that high a level is great”. The committee formation process reinforces the importance of strategic planning and coordination.

As many interviewees point out, the recent emergence of environmental issues has run into little resistance from the administration and others. However, environmental advocates have not asked for resources yet. The Talloires Declaration Committee and faculty senate committees currently operate with volunteers who have few incentives for participation other than personal interest and commitment. This strategy is not likely to be sustainable over the long-term. Moreover, programs such as the environmental living-learning center and environmental training for faculty will require funding. On the operations side, improving the recycling program, creating and maintaining green space, purchasing more environmentally friendly products, increasing energy efficiency and many other ideas require an upfront investment of capital. In general, environmental issues have not competed effectively for the limited attention and funds of decision makers, and it is not clear whether the shift in organizational conditions and strategies employed by potential change agents will be enough for these issues to compete successfully in the future.

Summary

As defined by the campus environmental sustainability survey results and theoretical framework, Institution Y falls into the category of “no institutional environmental-leadership”. This case study reveals that this label is largely accurate, although there are small pockets of environmental activities as well as an emerging environmental movement. YU has a solid environmental education program and a stable recycling program. However, YU lags in operational greening, and has no long-term
plan for sustainability. Several faculty are beginning efforts to develop an institutional base to take advantage of organizational conditions that might be conducive for environmental progress. These faculty are attempting to cultivate several administrators as environmental supporters, such as the former director of the Environmental Center (currently an Associate Dean) and the President of the Faculty Senate (an environmental scientist). The results of this effort remain to be seen and barriers to progress are varied and high. These barriers are displayed in two current issues. First, there is not widespread support – even among the “environmentalists” – for the creation of an environmental living-learning center. Second, the Environmental Center was planning to restore a degraded pond by using native flora. Unbeknownst to the Center, however, the pond was converted into a Japanese garden, apparently to impress donors. This lack of coordination, communication and power among environmental advocates represents significant barriers to moving beyond recycling and basic environmental education into a sustainability program.

Of greater theoretical importance than the outcomes at Institution Y is the process of attempting to move from an environmental-laggard to an environmental-leader (Figure 5.2). The model outlined in Chapter II predicts that colleges and universities that are conservative, hierarchical, unconcerned about reputation and ethics, and lack transformational leaders are more likely to display no environmental-leadership. Institution Y fits this model well in terms of ethics, political orientation and decision making structures because interviewees and respondents consistently point out the lack of moral leadership, conservative politics and hierarchical structure of the campus. The results are more ambiguous for reputation because YU does not have a strong image but is striving to become well known and respected. The presence of transformational leaders at YU contradicts the theoretical framework, although the efficacy of these leaders is questionable, and they are not focused on environmental issues. Therefore, Institution Y clarifies the model by demonstrating that the presence of transformational
leaders and image-seeking behavior only leads to environmental success if the other organizational conditions are conducive and enacted by a group of coordinated stakeholders. Moreover, YU provides additional evidence for the importance of a liberal/progressive orientation because conservatism is cited as a major barrier to environmental change, and the environmental advocates are associated with a liberal undercurrent at the institution.

The driving forces behind the limited environmental efforts at YU include the Environmental Center and a concerned core of faculty and students. However, these stakeholders are not particularly influential, and the level of support from their peers, supervisors and institutional leaders is unclear. Until the recent Talloires Declaration committee, there was no power base and coordinator of environmental activities. Moreover, no administrators or governing board members are active environmental change agents. Therefore, Institution Y highlights the importance of leadership support in signaling the value of environmental issues through directing resources and incentive structures. A small core of faculty is only effective when strong interpersonal relationships and support from peers and students are present.

The model predicts that institutions exhibiting no environmental-leadership tend to use short-term pressures, as opposed to long-term enlightened self-interest, as environmental-leadership rationales. The results partially contradict this prediction, as the dominant strategy of environmental advocates is to appeal to the strategic positioning potential of establishing an environmental-leadership position. Appeals to costs savings and ethics exist, but are scattered and controversial. There is some pressure from student activists, but this pressure is relatively weak. There is no environmental-leadership rationale coming from the administration, although the President and others have not actively opposed environmental activities. Therefore, Institution Y raises the possibility that appeals to long-term strategic interests can be effective in the long-term, but
advocates must use this strategy continuously. Ethical appeals are only useful to unlock pre-existing environmental ethics, and cost appeals are a risky strategy.

The main barriers to environmental-leadership at YU range from the expected resistance to change and financial constraints to the more insidious interpersonal conflicts, political battles and lack of coordination. Environmental issues are not on the “radar screen” of most decision makers. However, change agents have cause for optimism because environmental advocates are beginning to capitalize on a broader ecological movement and favorable changes in staff and administration by forming a Talloires Declaration implementation committee and related efforts. Generally, Institution Y lacks a long-term strategic vision for becoming a sustainable campus but has pockets of success and a growing level of enthusiasm and coordination. As conditions become more favorable and strategies to promote environmental-leadership mature, Institution Y might progress from an environmental-laggard to an environmental-leader, although sustainability-leadership is a long way off, and organizational realities constrain the possibilities for success (Figure 5.2). This early stage of development offers a window into decision making that helps refine the theoretical framework to be more applicable to institutions that are beginning environmental efforts.

**Comparison & Conclusion**

Institution X and Institution Y are peer institutions. Both institutions are located in the Midwestern US in rural areas in relative proximity to small, moderate and large cities. Both institutions are approximately the same size with similar academic reputations. Both institutions’ core competencies lie in training teachers. Both institutions lack widespread national recognition and are struggling to attract students and improve their reputation. Both institutions are considered conservative in their political orientation, although the case studies reveal that each has an element of progressive, liberal thought. Both institutions have widely respected leaders who are considered
transformational by the majority of stakeholders. In general, XU and YU appear very similar in nearly every respect except in environmental-leadership.

Judging by the Sustainability-Leadership Scale/Score (SLS) determined by the surveys, one might conclude that XU and YU are on opposite extremes in terms of environmental-leadership. XU’s score is 3.93 (7th out of 56) while YU lags behind at 2.46 (51st out of 56) (mean=3.33; standard deviation=.58). However, the case studies demonstrate some of the limitations of survey data. For example, XU scored highly on sustainability-leadership based on the level of pronouncements and policies and some initiatives in Academic Affairs. However, actual changes to curricula, research, service, operations and Student Affairs to move toward sustainability are minimal. Conversely, Institution Y has little coordination from the top and is rife with political infighting, yet has managed to support pockets of environmental activities. The first conclusion to be drawn from this situation is that the survey data tend to highlight the extremes, with institutions with emerging programs exaggerating progress while institutions in earlier stages of environmental progress downplay progress. This tendency derives from the pride of change agents who have achieved some success and the dejection of advocates who face significant and seemingly insurmountable barriers. In any case, despite similar demographic and cultural conditions, XU is further along the path to making environmental issues a core competency of the institution. The questions remain: Why is Institution X more advanced in environmental consciousness than Institution Y? What does a comparison between the institutions reveal about strengths, weaknesses and new directions for the theoretical argument presented in Chapter II and refined through the survey data presented in Chapter IV?

In terms of organizational conditions, there is little difference between Institution X and Institution Y in most areas. The main disparity lies in the decidedly collegial atmosphere at XU as opposed to the ambiguity about organizational decision making and “feel” at YU. Therefore, the subjective feeling that the atmosphere is “right” for
environmental issues to become a priority and the knowledge that faculty and students enjoy a close relationship with each other and decision makers appear to be very beneficial to advancing environmental issues at XU. At Institution Y, the attitude that conditions are “right” might be beginning to emerge, but has not penetrated the thinking of all stakeholders. By comparing these institutions, the importance of collegial campus culture, collaborative decision making structures for environmental and other related issues, and interpersonal collaboration between potential change agents – as outlined in the original model and supported through the survey data – becomes strikingly clear. One of the major advantages that Institution X enjoys over Institution Y is a collegial environment where environmentalists work together toward collective goals. This collaboration and coordination are important in advancing any campus issue, but are particularly important for environmental issues because of the tendency for knowledge to be diffused over a variety of disciplines and stakeholder groups, and because environmental issues are not typically a high priority among societal and institutional leaders.

Institution X and Institution Y reveal that a conservative political orientation on a campus is a strong barrier to environmental progress, as predicted by the original proposition and supported by the survey data. However, Institution X reveals that conservatism is not an insurmountable barrier when stakeholders work together in a positive atmosphere. Moreover, both campuses reveal a new proposition that more progressive/liberal values can be “imported” from geographic areas far from campus, and become a major driver for environmental initiatives, particularly when these values conflict with the dominant attitude in the local community and government.

Institution X and Institution Y both have leaders that are considered “transformational” by the majority of stakeholders surveyed and interviewed. In fact, both institutions seem to have developed an institutionalized leadership culture which has produced a succession of these transformational leaders. Moreover, both institutions
display strong image-seeking behavior. The fact that XU is advancing rapidly on environmental issues while YU is lagging reveals that the presence of transformational leaders and image-seeking behavior alone is not enough to produce environmentally beneficial organizational change. These conditions are conducive to environmental progress – as the theoretical framework predicts and survey results support – but need to be enacted by change agents. In other words, environmental advocates must strongly link environmental issues to a leader’s desire to be a long-term thinker and to the institution’s desire to improve its reputation, perhaps through appealing more strongly to governing boards.

One could make the case that there are more faculty, staff and administrators knowledgeable and interested in environmental issues at YU as opposed to XU, since YU has an Environmental Center and several environmentally oriented faculty in leadership positions. However, these potentially conducive organizational conditions have not been effectively enacted at YU. At both Institution X and Institution Y, a committed core of mostly faculty (but also students) drives environmental efforts. However, the core at Institution X is far more effective, largely because they have powerful personalities that are working together with the strong and long-term support of one high-level administrator. Therefore, the case studies reveal a factor not adequately accounted for in the theoretical framework: the importance of interpersonal relationships and individuals exercising environmental leadership. The case study of Institution X demonstrates that strong interpersonal relationships can lead to positive environmental outcomes, while Institution Y reveals the negative effects of interpersonal conflicts. Both case studies reveal the need for a guided strategic process with at least an initial influx of resources and incentives.

Both institutions reveal a finding unanticipated in the original model and not identified in the survey: that environmental supporters (particularly among faculty) with strong personalities and charismatic appeal do not necessarily come from traditional
disciplines associated with environmental issues, such as ecology and natural resources management. In fact, change agents at both institutions viewed individuals in these traditional disciplines as barriers more often than as drivers. This perception might reflect a more general trend toward leadership from applied and unexpected disciplines in campus environmental advocacy. Additional research might provide evidence that this trend will aid the campus environmental movement by providing a more diversified base of supporters. This comparative case study provides initial evidence for this new hypothesis.

Both Institution X and Institution Y are using a rationale of “enlightened self-interest”, which is predicted by the theoretical framework and survey results to be the most effective approach to frame and advocate for environmental initiatives. Both institutions appeal repeatedly to the strategic positioning benefits of environmental action, particularly when negotiating with top decision makers. This strategy makes sense because administrators and governing boards are concerned about the strategic direction and external image of the institution. Environmental advocates at Institution X rely more heavily on the ethical components (i.e., “doing the right thing) of this rationale (particularly when communicating with lower-level stakeholders), while advocates at Institution Y are debating the effectiveness of ethical appeals. This situation reveals two new propositions. First, appeals to strategic positioning appear to be effective when promoting environmental issues to the administration and governing board, while ethical appeals might be more effective when promoting environmental issues to other stakeholders, such as students, faculty and the local community. Second, an organizational change strategy based on personal ethics is only effective if there are pre-existing personal inclinations towards environmentalism. Change agents are unable to create personal environmental ethics, but can be successful in enacting this interest in certain stakeholders through a strategic approach.
Both institutions face a wide range of barriers to environmental efforts. Particularly vexing to environmentalists at both institutions is the lack of priority assigned to environmental issues by key decision makers (such as administrators, the president and the governing board), the lack of ability to draw in more environmental supporters and the lack of support or interest from operations managers. Potential change agents have not found the solution to these problems at either institution. Therefore, this comparative case study supports the proposition that increasing the priority placed on environmental issues by decision makers is the major challenge for change agents. To combat this problem, analysis of both institutions reveals the necessity of a “catalyst” or “catalyzing situation” to unite supporters and gain the attention of leaders and the local community (this outcome was largely unanticipated by the theoretical framework and not found in the survey research). At Institution X, the imminent departure of a key supporter in the administration provided this catalyst, while the construction of a local factory dairy farm provided the spark at Institution Y. Since environmental issues tend to be insignificant in the everyday agenda of decision makers and most stakeholders, the catalyst emerges as a foundation of organizational environmental activity.

One of the most surprising outcomes of this comparative case study is that Institution X and Institution Y appear to be using the concept of sustainability in a similar manner. Neither institution orients efforts around sustainability, largely due to strong objections from environmental supporters. Contrary to the theoretical framework, Institution X’s leadership does not appear to be related to a long-term vision associated with a well-reasoned use of the concept of sustainability. Neither institution uses the concept of sustainability as a motivational or orienting force, although the word “sustainability” has increasingly crept into the language of campus environmentalism at each institution. Moreover, neither institution is seriously considering the social issues that are interrelated with environmental issues as part of its sustainability efforts, although Institution X indicates a desire to respond to social issues as efforts progress.
Therefore, this comparison reveals that – contrary to the theoretical framework and survey findings – orienting environmental management systems toward sustainability is controversial as an advocacy strategy (even among environmental supporters). However, a lack of focus on sustainability may lead to efforts that discount interrelated social issues, lack a long-term vision and plan, and fail to connect campus actions on environmental and related social issues to relevant global visions and activities.

Overall, Institution X is an environmental-leader demonstrating several tangible outcomes as well as institutional commitments. Institution Y is not currently demonstrating environmental-leadership, but has positive signs that leadership might emerge in the near future if environmental supporters begin to work together more effectively. The rediscovery of the signing of the Talloires Declaration is poised to help this process. Environmental advocates at Institution X need to reach out to more stakeholders, establish better relationships between environmentalists and operations managers, recruit institutional leaders who are committed to sustainability (in part to replace the committed, but departing administrator), and develop a long-term sustainability vision which moves beyond the Talloires Declaration in order to move into a stronger sustainability-leadership position.

In terms of theoretical development and broad implications, comparing Institution X and Institution Y reveals the importance of collaborative decision making and coordination among diverse stakeholders to enact potentially conducive organizational conditions. While change agents can and perhaps should come from diverse disciplines, advocacy strategies are most effective when the individual values and behaviors of environmental leaders meld together and draw in at least one influential institutional leader. Political considerations are an important organizational condition and barrier, but change agents can counteract inherent conservatism. Moving environmental issues onto the agenda of all campus stakeholders is difficult. Appeals to strategic positioning are effective when promoting environmental issues to top decision makers, while ethical
appeals are effective with lower-level stakeholders when there is a background level of environmental interest and ethics. Finally, the concept of sustainability is controversial as an advocacy strategy, but may have value in strategic planning as well as in establishing global connections and credibility for campus efforts. I further examine these refinements and new directions for the original theoretical framework in the following chapter on sustainability initiatives at the University of Michigan.
CHAPTER VI

UNIVERSITY OF MICHIGAN RESULTS

This chapter analyzes environmental and sustainability efforts at the University of Michigan (also referred to as U of M or Michigan). Chapter III describes the rationale for studying Michigan and the case study methodology (participant observation and document analysis). The first section of this chapter provides an institutional profile while the second outlines a brief history of environmental initiatives at Michigan. The next sections assess drivers, rationales, barriers, usage of the term and concept “sustainability” and inclusion of social issues, and outcomes related to environmental and interrelated social issues. The final section draws conclusions and outlines lessons learned. Figure 6.1 summarizes this chapter graphically by depicting the main aspects of the organizational factors and environmental outcomes model generated for Michigan. In general, the case study of Michigan reframes the evolving theoretical framework by emphasizing collaboration, coordination, image-seeking behavior, transformational leaders, liberal/progressive politics and external stakeholder support. The Michigan case study adds new propositions to the original model relating to a “moral leadership” environmental-leadership rationale, the importance of building from past successes, and the multiple meanings of and motivations behind the concept of sustainability.

xxvi Unless otherwise noted, all information in this chapter is based on the Ann Arbor campus of the University of Michigan.
Figure 6.1: University of Michigan’s Organizational Factors and Environmental Outcomes

**Conditions**
- Hierarchical
- Bureaucratic
- Progressive
- Image-focused

**Drivers**
- Inertia from Environmental History
- Students
- Faculty
- External Groups (e.g., Alumni/Community)
- Operations Environmental Professionals

**Barriers**
- Lack of Coordination
- Low Priority Among Leaders
- Stakeholder Politics/Friction
- Risk Aversion

**Rationales**
- Enlightened Self-Interest;
- Cost-Efficiency/Regulatory Compliance (Operations)

**Usage of “Sustainability”**
- Faculty/Students: Heavy Usage, Unclear Implications
- Administration: Abandoned in favor of “Stewardship”
- Housing Division: Heavy Usage, Difficult to Implement
- Social Issues Excluded from Environmental Debates

**Outcomes**
- Pockets of Leadership and Strong Programs
- No Leveraging or Institutionalization

- Not an Institutional Sustainability-Leader, but Better than an Environmental Leader
The main campus of the University of Michigan is located in Ann Arbor, Michigan, a small city (approximately 100,000 residents) in the Midwestern U.S. bordered by rural areas as well as suburbs of Detroit, a major urban center which is approximately 50 miles away. U of M is rated as a “Top 50” doctoral institution by *US News & World Report* (www.usnews.com), and is classified as an “Extensive Doctoral/Research University” by the Carnegie Foundation for the Advancement of Teaching (www.carnegiefoundation.com). Michigan enrolls 37,159 students (24,537 undergraduates and 12,651 graduate students) in 19 schools and colleges with over 600 degree-granting programs and 222 undergraduate majors. Approximately 6,100 graduate and undergraduate courses are offered each term. Approximately 26% of U of M’s students are considered minorities, with “Asian American” as the largest minority (11%). Approximately 11% of Michigan’s student are classified as “foreign”. Approximately 540 students (1.4%) are enrolled in Michigan’s School of Natural Resources & Environment. Michigan employs 4,430 faculty members and 20,305 staff members, including approximately 8,000 staff members at the University’s Hospital complex. Michigan has approximately 420,000 living alumni – more than 160,000 of whom live in the state of Michigan – which is the largest alumni body of any college or university in the country.

Michigan is a major research institution, with research expenditures of $591,702,518 for fiscal year 2001. This is the highest expenditure among U.S. public universities and the second highest expenditure of all U.S. institutions of higher education. Michigan’s general fund for fiscal year 2002 was $1,043,000,000, which pays

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*xxvii* Unless otherwise noted, all information in this section comes from University of Michigan News and Information Services (http://www.umich.edu/~newsinfo/mformhom.html), and is based on the 2001-2002 academic year.
for teaching, research, library services, scholarships, physical operations, etc. Slightly over 50% of this fund comes from tuition and fees while just over 33% comes from state appropriations. The total fund for Michigan was $3,645,000,000 in fiscal year 2002, which includes expenditures for the Hospital complex and other operations in Ann Arbor. U of M’s campus encompasses 3,177 acres, which includes 550 University buildings totaling 23,157,417 gross square feet. Michigan uses approximately 381,000,000 kWh of electricity, 500,000 gallons of fuel onsite, and 1,400,000,000 gallons of water per year. U of M’s campus contains more than 7,000 trees, 100,000 square feet of flowerbeds, 5,079,181 square feet of lawn, and 1,240,541 square feet of shrub beds. Overall, Michigan is one of the largest institutions of higher education in the U.S., with major educational, social and environmental impacts and influence across the state and country.

**Brief History of Environmental Initiatives**

It is beyond the scope of this study to profile the entire long and diverse history of environmental issues at Michigan. Therefore, this section focuses on major initiatives, and begins to identify how these initiatives arose, progressed, and shed light on the evolving theoretical framework. Overall, Michigan was an early mover on environmental issues and has several strong environmental education, research, service and operations programs, although these initiatives have begun to lag in recent years and often lack high-level support and coordination.

Michigan’s leadership in environmental education – defined as education pertaining to the natural environment and environmental problems – began early, as the Department of Forestry “evolved into the School of Forestry and Conservation, the first of its kind in the country” in 1927 (according to www.snre.umich.edu). This School eventually became the current School of Natural Resources & Environment (SNRE), which offers interdisciplinary environmental studies degrees at the undergraduate and graduate levels. The approximately 600 students and 40 faculty in SNRE form the core
of the strong environmental education programs at U of M. However, environmental education is spread out across the university’s 19 colleges and schools. For example, the College of Literature, Science and the Arts offers an Environmental Studies minor; the College of Engineering offers an Environmental Engineering degree; the School of Public Health offers an Environmental Health degree; and the Law School offers an Environmental Law concentration. Moreover, SNRE offers joint programs at the graduate level with the Business School, School of Public Health, College of Architecture & Urban Planning, and other colleges and departments.

According to a recent environmental education survey (Bernard and Reppe 2001), Michigan has at least 287 courses that address environmental issues, although there is no campus-wide environmental course requirement. However, support for SNRE and related environmental educational initiatives has waxed and waned over time. For example, during 1982-83 SNRE was reviewed by the administration for possible elimination. The outcome was that SNRE’s budget was downsized by 25%, leading to scaling back of faculty, staff and students. Currently, the undergraduate environmental science major (with tracks in ecology and policy) is in the process of moving from SNRE to a joint arrangement between SNRE and the College of Literature, Science & the Arts (LS&A), due to a lack of fiscal resources in SNRE, the opportunities for enhanced collaboration between the colleges, and the need for expanded environmental education in LS&A. Overall, Michigan excels in providing opportunities for environmental education by offering many diverse programs, particularly at the graduate level. However, due to Michigan’s large size, disciplinary orientation and lack of environmental literacy requirements (i.e., most students are not required to take environmentally-related courses), the vast majority of students graduate without acquiring basic environmental literacy.

Given the University of Michigan’s large research expenditures, it is not surprising that, according to a 1992 survey (Hurst 1992), environmental research takes
place in over 60 academic departments, centers and institutes. Michigan’s environmental research began with SNRE’s pioneering work in forestry and ecology, and continues in diverse fields. Michigan has active research programs in fields such as ecology, environmental geology, paleoecology, limnology, Great Lakes ecosystems, natural history, nature writing and urban planning. Michigan is a leader in environmental management research, with the Erb Institute for Environmental Management and the Corporate Environmental Management Program at the center of these efforts. Michigan is also a leader in life-cycle assessment, with the Center for Sustainable Systems spearheading these efforts. Michigan has research centers focusing on environmental justice, ecosystem management and environmental engineering. Overall, while Michigan excels in terms of volume of environmental research, much of this work is disciplinary, and the university is struggling with how to integrate and apply research approaches to interdisciplinary education, community outreach, and campus applications. According to a dissertation studying environmental research collaboration at Michigan in the early 1990’s (Hurst 1992, p. 7), “past attempts to coordinate these efforts or bring them under one ‘administrative roof’ have either failed or been of only short-term value.” This situation still holds true.

Operations managers at Michigan claim that there are over 185 “environmental steward projects” underway (Kuharevicz 2001). Michigan has an aggressive energy-conservation program, with many facilities participating in the Environmental Protection Agency’s Green Lights and Energy Star programs (Maddix 2001). The campus power plant – which provides approximately 50% of campus energy – runs on natural gas and practices co-generation (i.e., excess steam for heating is used to generate electricity), which makes it a very efficient user of fossil fuels. After years of non-compliance, Michigan recently agreed to exceed Ann Arbor’s 3% renewable-energy requirement, and currently purchases over 5% of its energy from biomass. Michigan’s over 100 buses run on diesel fuel, despite pressure for natural gas, electric or fuel cell vehicles; however,
Michigan is currently mixing 20% biodiesel with 80% standard diesel for these vehicles. Over 300 of Michigan’s smaller vehicles (out of a total fleet of approximately 500) are capable of using ethanol, and Michigan’s fleet includes six electric Ford Rangers. However, Michigan does not have an environmental or energy policy and the Administration has rejected proposals to sign a version of the Kyoto Protocol on climate change.

In terms of pollution prevention, Michigan has initiatives relating to microteaching (e.g., reducing chemical usage in laboratories), lead reduction, and alternatives to salt for deicing. Michigan is conducting a green-building pilot project with the renovation of the Samuel T. Dana Building, which houses SNRE. U of M has a strong recycling program (which earned the institution the National Campus Recycler of the Year Award in 2001) (George 2002; Misthal 2002) that collects mixed paper and containers, as well as many special items (such as batteries, printer cartridges, etc.), and currently boasts an almost 30% recycling rate. The recycling program runs “Move-In” and “Move-Out” programs, which divert packaging waste, clothing, toiletries, furniture and other items from winding up in a landfill. Moreover, a pre-consumer food waste composting program has diverted 70,000 pounds of food waste, including an innovative pilot program using vermicomposting (worm composting) to compost a small portion of this waste (Maddix 2001).

As discussed later in the chapter, operational environmental efforts have been heavily promoted recently through university public-relations media, including the weekly staff newspaper (University Record), quarterly Alumni newsletter (The Michigan Today), an article in USA Today (Marklein 2002), an extensive and well-publicized website (http://www.umich.edu/~urel/stewardship), booklets on energy efficiency and related topics, and even in the Presidential welcome to new students, staff and faculty in Fall 2001 and summary of the academic year in Winter 2002. Generally, environmental operational initiatives at Michigan are varied and substantial, although lacking in certain
areas including building design and materials purchasing. Support and interest in environmental issues have waned in recent years, according to a recent article in the *University Record* (Maddix 2001): “Although earth-friendly issues are not in the forefront as much as they once were, the University remains committed to continually finding ways to reduce, reuse and recycle.” As the Provost’s Advisory Council on the Environment’s Report (2000) states: “We like to see the University of Michigan as a leader. But members of our committee report that other universities (Brown was cited as an example), are ahead of us in ‘being green’.”

University Housing coordinates its own, largely autonomous, sustainability program for its 17,000 residents. This program arose as a way to expand the recycling program and now includes a dedicated staff member with part-time responsibilities as a “sustainability coordinator” as well as several student part-time employees. Housing initiatives include increased purchasing of organic, local and vegetarian foods in dining halls, procuring more environmentally-friendly cleaning chemicals and renovation supplies (such as carpeting), and designing a green procurement policy. Housing also runs resident awareness programs such as the Winter 2002 Ecolympics, which encouraged students to conserve energy and water, reduce waste and recycle. Housing is in the midst of conducting sustainability workshops for all staff as well as developing a student “Green Guide” to sustainable living and producing a 16-page newsletter on Housing’s environmental initiatives. A small but active core of staff and students leads these efforts, and although they have yet to fully permeate the culture of University Housing, they are beginning to gather momentum.

There is a strong tradition of holding major environmental events and forming environmental groups at U of M. For example, Michigan sponsored one of the first major Earth Day celebrations in 1970. During 1998, Michigan held a campus-wide environmental theme semester, which featured speakers, artists, special classes and other events. During 1999, SNRE and the Business School co-sponsored a lecture series that
brought in 16 prominent speakers to address sustainability from multiple perspectives, including Paul Hawken, David Orr, William McDonough, Herman Daly and Donella Meadows. Moreover, U of M has many groups, committees and personnel focused on environmental issues. For example, there are at least five students groups primarily concerned with environmental issues, including the Sustainable U of M group (which drafted a student-based plan for university sustainability), Environmental Action (ENACT), and the Public Interest Research Group of Michigan (PIRGIM). SNRE has student and faculty groups involved in ecological issues. University Housing has a Sustainability Oversight Committee. Faculty have several environmentally-related groups, with the SNRE faculty as the most powerful organization, and also a cross-campus Faculty Environmental Steering Committee that helps direct collaborative, interdisciplinary environmental research, teaching and activism. Operations staff have many environmental groups, including teams devoted to energy conservation and finding alternatives to salt usage. The former Provost convened the Provost’s Advisory Council on the Environment – consisting of Deans or their representatives – which met during the 1999-2000 academic year to draft an initial campus environmental plan (which has not been implemented).

Overall, Michigan has been and continues to be an active campus environmentally, although power and initiatives are decentralized and diffused. Michigan’s current environmental position is interesting from an analytical perspective because it provides a venue to study a large research university with a historic environmental-leadership position that is struggling to catalyze and coordinate diverse efforts. From a theoretical perspective, studying Michigan’s environmental initiatives is revealing because of the opportunity to assess coordination of diverse stakeholders, leadership support, incentive structures, activism and institutional image.
Organizational Conditions

To provide context for environmental decision making at the University of Michigan, this section assesses organizational conditions hypothesized (in Chapter II) to be important to sustainability-leadership: transformational leadership, image and reputation, organizational structure, political orientation and ethical orientation. In terms of transformational leadership, U of M administrators take progressive and visionary stands on a select set of social and educational issues. For example, U of M is currently the leading institution in defending the use of affirmative action in admission policies. Moreover, U of M is moving forward quickly on technological and bioscience research through a large “Life Sciences Initiative”. However, the large size of the institution and its long history of decentralization lead to multiple competing interests that constrain the power of leaders to set the organizational direction and reach all stakeholders. Environmental issues have not generally been included as one of the issues on which administrators are progressive or visionary. However, the relative position of environmental issues and general leadership style could be dramatically altered in the near future since a new President and Provost will be hired for the 2002-2003 academic year. Therefore, Michigan supports the potential for the presence of transformational leaders to be advantageous in advancing environmental issues (as predicted in the proposition and demonstrated through the survey results), but also confirms that environmental issues must rise to the agenda of these decision makers for this potential to be enacted (as shown through the comparative case study).

The combination of high regard for academics, research and athletics at U of M promotes remarkable “school spirit” and high regard for the institution internally and externally. Perhaps this high regard is best demonstrated by the fact that Michigan sells more clothing with the school name or symbol than any other U.S. institution of higher education, according to the Michigan News & Information Services (www.umich.edu/
Michigan’s stakeholders are aware of and interested in maintaining the impressive image and reputation of the institution. Therefore, as will be discussed in more detail, Michigan supports the proposition that image-seeking behavior can be environmentally beneficial, as asserted in the theoretical framework and supported by the survey results. In the case of U of M (as opposed to the comparative case study institutions), image-seeking behavior is related to maintaining a strong image as opposed to building a reputation.

In terms of organizational structure, Michigan is highly decentralized, and hierarchical structures prevail within institutional, college and departmental administrations. Institutional strategic decision making typically occurs at high levels, and the student and faculty governments have minimal impact on policymakers. Therefore, U of M most closely resembles a classic bureaucratic educational institution, as described in Chapter II. The multiple governance structures described in Chapter II have a strong presence at Michigan, which means that different stakeholder groups compete for power. The institution is too large and decentralized to promote strong collegiality, as disciplines and colleges tend to command more allegiance than institutional identity. However, decision making structures within colleges, departments and divisions can be collaborative and the cultures can be collegial, as cultures and processes vary greatly within the larger institutional structure. Overall, the fact that Michigan exhibits mainly bureaucratic decision making structures and yet has several strong environmental initiatives partially contrasts the original model and the findings in the survey and comparative case study that collaborative decision making is key to environmental progress. However, since Michigan lags in terms of providing a collaborative and coordinated approach to environmental issues, it is likely that the bureaucratic/hierarchical tendencies of the institution are impeding this approach.

In terms of political orientation, the University of Michigan and the surrounding town of Ann Arbor are well known for being liberal. The campus and town are highly
“intellectual” and “activist”; speakers, activities and protests are common. Although there are pockets of conservatism within academic departments and the student body, the orientation of the campus and community is decidedly progressive. Therefore, Michigan represents the first qualitative test of the assertion in the model and findings in the survey that liberal/progressive institutions are better positioned to become environmental-leaders. Later in this chapter, examples of how this progressive orientation has positively affected environmental issues on campus are presented.

In terms of ethical orientation, U of M is too large and diverse to accurately assess institutional ethics and values in this study. Given the large size and diversity of the institution, there may not be a prevailing institutional ethical stance. In any case, different stakeholders have vastly difference perceptions of whether the institution is ethical, and these views could not be reconciled with this study.

Relating this brief profile back to the model and framework presented in Chapter II and revised in Chapters III and IV, U of M fits the expected profile of a sustainability-leader in terms of its generally excellent reputation and image, and progressive political orientation (Figure 6.1). U of M fits the profile of an environmental-laggard in terms of decision making structures, as bureaucracy, politics and hierarchical structures are stronger than the collegial, collaborative undercurrent. The results are ambiguous in terms of transformational leadership because leaders often take visionary approaches to social and educational issues, but are constrained by the large institutional size and conflicting stakeholder priorities. The results are also ambiguous in terms of ethical stance, as the institution is too diverse and decentralized to gather accurate indicators of ethical and moral propensity. Therefore, the evolving framework predicts that Michigan would have some strong environmental initiatives, although would not be a sustainability-leader (as defined in Chapter II). This scenario turns out to be accurate, as portrayed in decision making processes described in the remainder of this chapter.

**Driving Forces**
Due to Michigan’s large size and complex organizational structures, multiple stakeholders advocate for environmental initiatives. Since Michigan was an early mover on environmental issues and has an organizational culture that favors leadership in all areas, environmental initiatives are often conceived as a way to maintain and enhance a leadership position. This inertia drives the desire for academic and community service leadership as well as an operational desire to meet or exceed regulations.

Michigan has a strong history of student activism, although environmental groups ebb and flow in terms of membership and influence over time. Currently, environmental groups are so numerous that the student government created an Environmental Issues Commission to serve as an umbrella organization. Most student activism focuses on operational issues as well as policies and practices (such as university investment practices). ENvironmental ACTion (ENACT) – the largest undergraduate environmental group – focuses on raising awareness of global environmental issues at the campus level. The Sustainable University of Michigan Team – a group of mostly graduate students (including myself) formed in 1998 – drafted a sustainability plan and agenda for the campus (Rosenbaum 2001). This plan contains 43 action items including: a U of M version of the Kyoto Protocol on Climate Change; an environmental mission statement; a sustainability coordinating body; sustainability training for faculty and staff; environmental literacy requirements; and increased attention to sustainability in land-use planning (Sustainable University of Michigan Team 1999). The Sustainable U of M Team pressures administrators and staff to implement these action items. Responses from the administration to the Sustainable U of M proposal and other student pressures have been mixed, as competing social issues and other pressures tend to garner greater attention. However, student environmental activist groups continually raise issues and force responses from decision makers.

Since SNRE is a small college by Michigan’s standards, and taking courses outside one’s college is often difficult, environmental literacy is not widespread among U
of M’s student body. However, the progressiveness and idealism of the student body tend to make up for this lack of formal education, and environmental issues receive broad support from student-oriented institutions. For example, the student paper wrote three editorials during 2000-2001 that called for great attention to sustainability issues from the administration (Michigan Daily Editorial Staff 2000; Michigan Daily Editorial Staff 2001a; Michigan Daily Editorial Staff 2001b). One editorial reads: “The University has waited far too long to assume a leadership position in national sustainability efforts”, and asks for the signing of the Kyoto Protocol and the appointment of a sustainability coordinator.

Similarly, the Michigan Student Assembly – the student governing body – passed a resolution in December 2001 (see Table 6.1 for the full text) giving strong support for the full Sustainable U of M Proposal and action items such as the appointment of a sustainability coordinator. The main graduate student government – Rackham Student Government – passed a similar resolution in March 2001. Student support is also evident in the over 1,000 student letters to administrators and faculty generated from the Sustainable U of M Team’s website. As the Provost’s Advisory Committee on the Environment’s Report (2000) states: “Sustainability is a subject that holds a deep attraction to many of our students across the University.” Therefore, Michigan presents a case where students are one of the most visible drivers of environmental activities, which differs greatly from Institution X and Institution Y, and has lead to a mixed response from the administration. Part of this response has been the public relations campaign described in the next section, but the more tangible effects of student activism remain to be seen. Generally, student activism designed to bring environmental issues onto the agenda of top decision makers engenders a reaction from institutional leaders. The nature of this reaction varies greatly depending on the issue and the institutional leadership. Historically, student pleas for a recycling program had great influence, but current pleas for energy efficiency and renewable energy commitments have gone largely unheeded.
Table 6.1: Resolution Passed by the Michigan Student Assembly (December 2001)

<table>
<thead>
<tr>
<th>Striving for a Sustainable U of M</th>
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<tbody>
<tr>
<td>Whereas, as a powerful and prestigious learning organization, The U of M holds a special obligation to be a leader in sustainability practice and education. Since our collective environment is one of the most pressing issues of the 21st Century, society in general, and employers in particular are increasingly demanding graduates familiar with environmental and related social issues, as indicated by a recent Wall Street Journal survey. U of M needs to maintain its intellectual and operational leadership by embracing sustainability through the integration of teaching, research, service and operational functions.</td>
</tr>
<tr>
<td>Whereas, while current campus efforts have begun to move The U of M in this direction, a sustainable management program will codify and expand upon existing environmental initiatives. The U of M would reap great long-term benefits from the establishment of a campus-wide sustainability vision and program, while contributing to a global effort in reversing the current unsustainable trends in all spheres of society.</td>
</tr>
<tr>
<td>Therefore be it resolved that as the elected representatives of the students of The University of Michigan, the Michigan Student Assembly strongly supports the establishment and implementation of comprehensive environmental sustainability goals and initiatives in teaching, research, service, operations and financial administration.</td>
</tr>
<tr>
<td>Therefore be it further resolved that MSA strongly encourages the U of M administration to adopt the following general principles of sustainability:</td>
</tr>
<tr>
<td>- Minimization and eventual reduction of environmental impacts from campus physical and business operations</td>
</tr>
<tr>
<td>- Requirement that undergraduates possess a basic ecological literacy</td>
</tr>
<tr>
<td>- Encouragement of sustainability-related research and service</td>
</tr>
<tr>
<td>Therefore be it further resolved that MSA supports student led environmental sustainability efforts, including the Sustainable U of M Proposal and the following action items:</td>
</tr>
<tr>
<td>1. Hiring of a full-time sustainability coordinator and formation of campus-wide sustainability oversight committee with student representation</td>
</tr>
<tr>
<td>2. Adoption of a sustainability mission statement</td>
</tr>
<tr>
<td>3. Adoption of a U of M version of Kyoto Protocol on climate change</td>
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<tr>
<td>4. Inclusion of environmental sustainability as a top priority in land-use planning and building renovation/construction</td>
</tr>
<tr>
<td>5. Adoption of a sustainable campus transportation plan</td>
</tr>
<tr>
<td>6. Inclusion of environmental and social standards into investment criteria</td>
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<tr>
<td>7. Initiation of sustainability training program for faculty and staff</td>
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<tr>
<td>8. Adoption of an environmentally responsible purchasing policy</td>
</tr>
<tr>
<td>9. Integration of environmental literacy into curricula and research</td>
</tr>
<tr>
<td>10. Consideration of environmental background and stance in the presidential search</td>
</tr>
<tr>
<td>Therefore be it finally resolved that the MSA executive officers send a copy of this resolution to the University of Michigan Regents.</td>
</tr>
</tbody>
</table>
The over 200 Michigan faculty with environmental interests have not organized into a coherent force to create organizational change for sustainability. The approximately 40 SNRE faculty are a small subset of Michigan’s total faculty, and the interdisciplinary Faculty Environmental Steering Committee is developing proposals to coordinate and empower environmental education and research, but has had little success. According to committee members, this lack of success is related to the fact that there is no top administrator for whom environmental issues are a top priority. However, faculty have emerged as a potentially powerful force urging the university to sign the Kyoto Protocol (Green 2001; The Agenda 2001). Over 100 faculty signed a letter to former President Bollinger urging this action, although the results remain to be seen. In general, however, the limited attention given to campus ecology from faculty who are often national and international leaders on environmental issues leads to an undeveloped, although potentially powerful, driver of sustainability-leadership. The missing ingredients are coordination, an administrative advocate and the related funding that such an individual could provide, and capitalizing on applying research and teaching to the local environment.

The U of M administration does not have strong environmental supporters in key decision making roles, such as the Board of Regents. However, there are also no strong environmental opponents. The administration is currently in transition. President Bollinger’s administration (ending in December 2001) did not place a high priority on environmental issues. However, toward the end of his tenure, Bollinger’s administration showed increased interest in the environment, which may have been driven in part by the fact that the University Regents have expressed more interest in sustainability recently, as stated at the December 2001 Regents meeting. Therefore, the Regents appear to be influencing operational initiatives and public relations relating to environmental

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This figure comes from surveys and web searches by the Faculty Environmental Steering Committee.
initiatives, as demonstrated by the fact that the Regents now receive an annual “Environmental Stewardship” report from the Director of Occupational Safety & Environmental Health. The most recent high-level effort – the Provost’s Advisory Council on the Environment’s Report (2000) – identified “several practical items” to “support and enhance work on environmental research and education”, but these recommendations have not been implemented.

While environmental issues are not typically recognized in institutional policies and priorities and few initiatives come from the higher levels of the organizational hierarchy, U of M does have many staff members with environmental responsibilities. For example, Michigan has a full-time Recycling Coordinator with a small staff, as well as a small department devoted to energy efficiency. The Department of Occupational Safety & Environmental Health serves as the environmental (operations) clearinghouse, and coordinates regulatory compliance, cost saving and public relations initiatives. Generally, Michigan demonstrates the relationship between lack of at least one key leader devoted to environmental issues, and a lack of strong institutional environmental support and policies at the highest levels. However, individuals within the administration (typically at lower levels) often serve as drivers for specific environmental actions, such as a composting pilot program started by the recycling coordinator.

The University of Michigan has many potential external drivers of environmental initiatives. A small subset of the largest alumni population of any school in the nation (420,000 living alumni) is becoming more involved in campus ecology. The Environmental Law & Policy Center organized the Michigan Alumni for Global Warming Action to promote the signing of the Kyoto Protocol, and received media attention for gathering over 100 alumni signatures on a petition (Table 6.2) (Fish 2001; From the Associated Press 2001; Learner 2001). However, alumni efforts have not achieved results yet. The Ann Arbor community and local nonprofits – such as the Ann Arbor Ecology Center and Midwest Office of the National Wildlife Federation –
Table 6.2: Michigan Alumni for Global Warming Action Letter to Former President
Lee Bollinger

<table>
<thead>
<tr>
<th>January 29, 2001</th>
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<tbody>
<tr>
<td>Dear President Bollinger:</td>
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<tr>
<td>The University of Michigan has a proud history of national leadership on environmental issues, including holding the first Earth Day event in 1970. Global warming is the most fundamental long-term environmental threat and challenge of our times. The University of Michigan can and should be a leader in demonstrating positive solutions to global warming problems. All of the undersigned are University of Michigan alumni who value environmental stewardship and value the leadership role that our University can play in helping to promote global warming solutions.</td>
</tr>
<tr>
<td>We are writing to request that you commit the University of Michigan to reduce its greenhouse gas emissions to seven percent below its estimated 1990 levels by the year 2012. Greenhouse gases, including carbon dioxide and methane, are the pollutants that cause global warming. This goal follows the terms of the Kyoto Protocol on Climate Change (December 1997).</td>
</tr>
<tr>
<td>By doing so, the University of Michigan would join with other university, city and business leaders that are reducing their greenhouse gas emissions. In April 1999, Tufts University President John DiBiagio publicly committed to reducing Tufts' carbon dioxide emissions by seven percent below 1990 levels by 2012. Northwestern University, the University of Iowa, the University of Colorado and the University of Kentucky are considering similar initiatives. BP, DuPont, IBM, Johnson and Johnson, Polaroid Corporation, Royal Dutch/Shell, Suncor and other major corporations have likewise made emission reduction commitments. Closer to home, the City of Ann Arbor is an active member of the Cities for Climate Protection program, has completed a global warming emissions inventory, and is developing a greenhouse gas emissions reduction action plan for its municipal government and the Ann Arbor community. The University of Michigan should join this group of environmental leaders.</td>
</tr>
<tr>
<td>The University of Michigan has already realized significant emission reductions by using natural gas in its cogeneration power plant, adopting alternative fuels for some of its fleet vehicles, and retrofitting buildings with efficient lighting and HVAC systems. Your public commitment will highlight the significance of these initiatives and expand the University’s actions to make the necessary environmental improvements to mitigate global warming. Your leadership will set the standard for other university presidents and demonstrate that greenhouse gas emission reductions are possible and responsible.</td>
</tr>
<tr>
<td>Committing to reduce greenhouse gas emissions will also provide significant educational opportunities for University of Michigan students. These educational opportunities are abundant – from atmospheric science to the economics of energy efficiency to public health improvements – and they will help prepare University of Michigan students to lead the way in our changing world. Students who are knowledgeable about the environmental and financial opportunities to minimize pollution will be important participants in the 21st century workforce.</td>
</tr>
<tr>
<td>We ask that your Administration develop a comprehensive program to inventory, reduce and monitor the University's greenhouse gas emissions. As alumni working to protect and improve the environment, we would be pleased to work with you to help design and implement your public commitment to reduce greenhouse gas emissions on campus. One of our alumni representatives, Howard Learner (U of Michigan, 1976), will contact you in the next two weeks to request a time for a group of the undersigned alumni to meet with you to discuss this opportunity. Thank you for your consideration, and we look forward to learning about your plans to reduce greenhouse gas emissions at the University of Michigan.</td>
</tr>
<tr>
<td>Sincerely,</td>
</tr>
<tr>
<td>(126 signatures, listed by Michigan graduate year and current title)</td>
</tr>
</tbody>
</table>

257
occasionally become involved in campus environmental issues. For example, the Ecology Center advocated (unsuccessfully) for the purchase of alternative-fuel buses as well as greater community input into land-use planning. The University also has a representative on the steering committee of the Sustainable Washtenaw County initiative. This representative makes sure that the University’s opinion is heard on countywide environmental, social and economic issues (such as land-use planning), and keeps the University – particularly the administration and Regents – informed about Sustainable Washtenaw’s activities. U of M will have another opportunity to become involved and influenced by community sustainability initiatives because a Southeastern Michigan Sustainable Business Roundtable is forming.

Another major external driving force for the University of Michigan is the state and – to a lesser degree – national government. With the current budget shortfalls in the state, U of M and other public institutions have been battling to maintain their appropriations. While environmental issues have not factored heavily into the evaluation of the University to date, it is possible that future state administrations with a more pro-environmental position than the Engler Administration will consider sustainability performance when making resource allocation decisions. In general, however, U of M is extremely influential in the community and state, and has not been particularly responsive to external stakeholder pressures. Nevertheless, alumni, the local community, nonprofit organizations and the government represent potential drivers for environmental actions not found in the other case study institutions, but anticipated by the original model.

Overall, the drivers of environmental efforts at Michigan are diverse and scattered (Figure 6.1), yet often powerful. As the Provost’s Advisory Committee on the Environment reports (2000) wrote, sustainability “is important, campus-wide, and a matter of passion to many donors as well as students and faculty.” The organizational tendency to be an environmental-leader creates opportunities for students, faculty, staff,
and external environmental advocates. Students are enthusiastic but often lack the sustained energy and knowledge necessary to create organizational changes. Faculty are over-committed and not rewarded for campus environmental activities, and thus tend to focus their considerable power on research and educational issues. Although the administration does not have clear environmental leaders, it has many dedicated environmental staff members. Alumni, community members and environmental-advocacy groups are potentially powerful, but are just beginning to activate organizational conditions conducive to sustainability-leadership.

**Rationale**

The letter from the Michigan Alumni for Global Warming Action to former President Bollinger (Fish 2001) (Table 6.2) begins with the following statement: “The University of Michigan has a proud history of national leadership on environmental issues.” The letter appeals to President Bollinger with statements such as: “Your leadership will set the standard for other university presidents and demonstrate that greenhouse gas emission reductions are possible and responsible.” The letter and subsequent communications also stress the educational benefits of combating global warming. Similarly, as part of its “Rationale for a Sustainability Agenda”, the Sustainable U of M Proposal reads: “As a powerful and prestigious learning organization, UM holds a special obligation to be a leader in sustainable practice and education. Since our collective environment will be the most pressing issue of the 21st Century, UM needs to maintain its intellectual and operational leadership by embracing sustainability.” Thus, students and alumni are using the enlightened self-interest rationale outlined in previous chapters by appealing to the strategic positioning interests of decision makers (Figure 6.1).

This strategic positioning appeal is typically articulated in terms of maintaining leadership among peer institutions and respected corporations, which builds on the
organizational inertia driving force outlined in the previous section. For example, student groups often point to the presence of a full-time sustainability coordinator at Michigan State University as a reason why Michigan needs a coordinator. Since Michigan attempts to be a leader in most activities, this strategy is steeped in institutional culture. The phrase “Leaders and Best” from Michigan’s fight song “Hail to the Victors” often appears as a goal for a wide variety of initiatives and is the unofficial motto of the University. Moreover, advocates often mix ethical rationales for action with leadership appeals, creating a plea for “moral leadership” out of a sense of responsibility to the reputation and prestige of the institution (i.e., enlightened self-interest). Advocates believe this approach is the best way to garner attention and resources from decision makers, although the level of action generated from these appeals is not yet clear. The “moral leadership” approach – which combines some of the approaches discussed in previous chapters – appears to be specific to campuses wishing to maintain their status as well respected, leading institutions on a wide variety of issues.

Faculty, alumni and administrators often take a slightly different approach to advocating campus sustainability, relying more on attracting students and applying environmental research to education and practice. This perspective – also based on the enlightened self-interest rationale – is reflected in an article in the Detroit Free Press by Howard Learner (2001), UM alumnus and the executive director of the Environmental Law and Policy Center. The article – entitled “U-M should heed its own advice on global warming” – implores the university to “get out of the lecture hall”, appealing to the university’s “long-standing commitment to environmental education” and the fact that Michigan researchers “literally wrote the book” on the consequences of global warming for the Great Lakes region. Faculty echo these appeals for “doing the right thing”, sometimes using the irony that students take classes about sustainability in classrooms that were designed and are operated in the traditional manner (i.e., consuming large amounts of resources) to promote environmental sensitivity in operations, education and
research. For example, a staff member stated the following about a current renovation of the building that houses SNRE (Ehrenberg 2001): “As we considered the renovation we thought we should ‘walk the talk’ – the building should be a place where principles of environmental responsibility are not only taught, but upheld and demonstrated to the community.”

Faculty tend to stress that environmentally-minded students are more likely to attend a university with a commitment to sustainability. The Provost’s Advisory Council on the Environment (2000) believes that strategic advantages gained from moving toward sustainability come from the fact that environmental degradation is “well documented” and “alarming”, “research funds are flowing in these areas”, and Michigan has “the potential to be a recognized powerhouse”. Overall, environmental advocates in the faculty, administrators and alumni use acting ethically, avoiding hypocrisy, becoming a leader, and attracting students as key components of their environmental-leadership rationale. As the Advisory Council report (2000) states: “The rationale for university leadership insisting on practices compatible with sustainability is so simple that it lends itself to cliché: practice what you preach; teach by example; take the high road.” This approach sheds new light on the enlightened self-interest rationale by highlighting how ethics and practical applications can appeal to faculty (as well as administrators and alumni). However, this approach has not yet worked in a cohesive manner.

University Operations is in the midst of an environmental public relations campaign, which includes articles in the University Record, Michigan Today, posters, a new website (http://www.umich.edu/~urel/stewardship), and other outreach efforts. This campaign uses a rationale of minimizing “our impact on the environment and natural resources” while meeting the organizational needs to justify environmental initiatives (Kuharevicz 2001). In a December 2001 presentation to the University Regents, University Operations administrators stressed that many of their environmental efforts arise out of concern for cost savings and regulatory compliance, but also include a sense
of “responsibility” (Figure 6.1). For example, stormwater retention basins have been installed to meet local water-quality standards, and are often mentioned in University Operations publicity. Recycling and energy conservation initiatives save vast sums of money, and continue to expand. A “green renovation” project is described by the Vice President of Facilities and Operations as providing “lessons learned that will allow future projects to include additional cost-effective green features” (Ehrenberg 2001). As reported in the University Record (Maddix 2001), Terry Alexander, the Director of Occupational Safety & Environmental Health, believes: “There’s quite an interaction between what makes good business sense and what’s good environmentally.” While this rationale is based on short-term benefits, these efforts are the centerpiece for operational greening and are portrayed by administrators as “cutting-edge sustainability practices”. This situation demonstrates that cost savings and regulatory compliance can drive certain operational greening efforts. This finding partially contradicts the original propositions, survey findings and comparative case studies by showing potentially beneficial attributes of this short-term approach. However, the fact that current operational initiatives at Michigan are scattered and not oriented toward long-term sustainability (i.e., focus on eco-efficiency) demonstrates that a cost and regulatory focus may not be an effective in promoting systemic organizational changes.

**Barriers**

Barriers to environmental progress at Michigan include a lack of coordination, low priority given to ecological concerns, poor relationships among key stakeholders, and aversion to risk (Figure 6.1). The Provost’s Advisory Council on the Environment (2000) reports that Michigan’s environmental capabilities are “atomized”, which is frustrating to internal and external stakeholders. Faculty, staff and students interested and involved in campus ecology span the university’s nineteen colleges and hundreds of departments and divisions, yet there is no coordinating entity to bring these individuals
together. This problem is illustrated by an example from a meeting between student environmental activists and officials in Michigan’s purchasing department. When students asked about specific practices and items, the officials responded that they are customer-driven, and thus departments need to request environmentally friendly items before they will be stocked. When asked about environmental procurement policies, the officials responded that policies must come from higher levels in the administration before the purchasing department would adopt them. Given the lack of coordination within the administration, and subsequent lack of education about green procurement policies at the department level, environmentally responsible procurement has no advocates or policies. Therefore, despite the presence of a small “Buy Green” website, procurement practices have changed little in response to environmental concerns.

This lack of coordination is by no means limited to operations issues. A recent report on environmental education (Bernard and Reppe 2001) concludes:

> We find it worth noting that most of the students, faculty and administrators expressed disappointment with a lack of connection and community among the varied environmental programs with the University of Michigan. There is certainly not a shortage of Environmental Education available. However, there seems to be a lack of cohesion...

This high degree of decentralization and lack of coordination from the top are particularly problematic (yet predictable) given the enormous size of the institution. The University of Michigan is similar to a conglomeration of companies. For example, the Utilities Department is the power provider, the hospital is the medical provider, and the Housing Division provides shelter and food for students. Each department or division has its own budget (often largely autonomous from the rest of the University), and moves largely at its own pace. Communication across departments or functional areas is often minimal. As described in article from the *Chronicle of Higher Education* about sustainability in higher education (Perrin 2001, p. B9), “Michigan is more like the Electoral College – 50 separate entities. The School of Natural Resources casts its six votes for sustainability,
the English department casts its 12 for humanistic studies, the recycling coordinator casts her 1, the electric-vehicle program casts its 2, and so on.” This makes environmental decision making extremely diffuse, even as compared to other institutions of higher education. This diffusion does not necessarily reflect a lack of fiscal resources. As one administrator reports, “There is money available to do smart things. Always has been. However, if you have to change the decision making process, now that will take some time, maybe more time than a student’s horizon.” Without a coordinating entity to focus environmental attention and maintain institutional perspective, many efforts languish. Therefore, Michigan demonstrates that lack of coordination and policies – which lead to a lack of feedback to decision makers and incentives for all stakeholders – can be particularly powerful environmental barriers in large institutions.

As reported by the Provost’s Advisory Council on the Environment (2000), “The contrast between the University’s enormous and admirable commitment to build strength in the life sciences while not leveraging existing strengths in the environmental area seems to some quite stark and probably unwise.” The low priority of environmental issues among campus decision makers leads to a lack of incentives for faculty and others to become involved in efforts. For example, the Faculty Environmental Steering Committee has not received official endorsement from the administration or the Regents. The recent environmental education report (Bernard and Reppe 2001) concludes: “Due to the lack of incentives, it has been difficult and almost discouraging in the past for faculty members to initiate and implement new programs (in environmental issues).” The low status of environmental issues is also evident in the lack of activity generated from official committees such as the Provost’s Advisory Council on the Environment. The Council’s report never received a response from the Provost, President or Board of Regents. Thus, it appears that when environmental issues inevitably compete against other academic or operational priorities, the results are typically unfavorable for environmental change agents in the absence of the support of at least one key leader.
This difficult in make sustainability issues a campus priority is compounded by the fact that environmental and interrelated social issues are currently not a priority within Michigan’s state government. Therefore, this is no governmental pressure for Michigan to become a sustainability-leader.

Another important barrier to advancing environmental issues is the relationship between students and administrators. For example, the Sustainable U of M Team has had a rocky relationship with operations administrators and former President Bollinger. After an initial period of cordial and frequent relations throughout 1999 and 2000, the relationship deteriorated after the student group generated over 1,000 letters to administrators about environmental concerns and after a contentious Regents meeting (December 2000) at which the student group felt that former President Bollinger and operations administrators stifled their opinions. Since this time, communication between the student group and administration has been virtually non-existent despite attempts by the Sustainable U of M Team. One frustrated Sustainable U of M Team member sums up the situation as follows: “They (the operations administration) would rather fight us than work with us.” However, during a December 2001 presentation to the Regents, operations administrators stressed community engagement and “energizing students, faculty and staff”. Robert Kasdin, former Executive Vice President and Chief Financial Officer, stated (Maddix 2001): “At this point, the biggest challenge we face is changing behavior.” Alexander agreed and stated: “Being a good steward is all of our responsibility. It takes everybody being involved.” Overall, the strained relationship between students and the administration (and staff) is evident on many environmental initiatives, and decreases chances for progress. While there are good relations between students and some operational staff, the strained nature of the relationship more generally is particularly problematic at Michigan since student activists are one of the primary drivers of environmental progress.
A related barrier is that students and faculty have not generally worked together on campus environmental issues, although the potential for collaboration exists and relationships are not generally strained. Student and faculty environmental efforts are typically uncoordinated, and there is no mechanism to bring these stakeholders together. Moreover, faculty and operations staff and administrators generally do not interact on environmental issues. While there is potential for collaboration on environmental research and education, there is little evidence that this potential is being tapped, with the exception of a few isolated cases. One of the exceptions is a course that was taught for the first time in Winter 2001, “Sustainability & University Life”. In this course, students are paired with a staff member to conduct an environmentally-related campus project. More generally, it is unclear whether animosity exists between faculty and staff, or whether these relationships have not developed due to other factors, such as lack of coordination and importance of other priorities. It is clear that lack of coordination between faculty and other key stakeholder groups is a major barrier.

The Provost’s Advisory Council on the Environment’s Report (2000) states, “With regard to changing University practices toward the sustainable, we note that this is a complex matter that touches every part of the university.” High initial costs inherent in projects such as green-building renovations often hold back specific projects, in large part due to an accounting system in which capital costs and operational costs are separated. Operations initiatives with a payback period of greater than five years are rejected as a matter of policy (as explained to the Sustainable U of M Team), and life-cycle assessment is not widely used in decision making. Moreover, operations managers display an aversion to change and risk that leads to inattention to green-building design and renovation, among other issues. For example, a study conducted by the University of Michigan’s Center for Sustainable Systems found that, with minimal increased costs, Michigan could have constructed a new building (Wiley Hall) to meet the “silver” level
of the Leadership in Energy & Environmental Design (LEED) criteria. The building currently falls below the bronze level because environmental considerations were not factored heavily into the design process. While there is a pilot green renovation occurring in the SNRE building at the request of environmental faculty, staff and students, there has been no discernible attempt to standardize these procedures. In addition, operations administrators portray environmental actions (beyond standard pollution prevention and energy conservation) to environmental activists and decision makers (such as the Regents) in the classic “either/or” manner, highlighting trade-offs between environmental activities and risk or finances. Therefore, without environmental advocates involved in every project, there is no strong rationale to change the “business as usual” approach to university operations.

The specific barriers to incorporating sustainability more fully into the research, teaching and service functions of the university are not unique to Michigan, but tend to be amplified at a large institution. The main resistance to a broad, interdisciplinary topic such as sustainability comes from the political (i.e., “turf”) interests of departments, colleges and faculty. For example, the creation of a cross-campus environmental research and teaching institute has been stymied due to turf battles by Deans and others who do not want to create an institution without clear departmental boundaries. The previously mentioned barriers – lack of coordination, low priority of environmental issues and lack of interaction between stakeholders – compound these political difficulties.

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These criteria include energy and water efficiency, building siting, materials usage, educational potential and other related factors.
Sustainability & Social Issues

While the term “sustainability” is in widespread usage at the University of Michigan, perspectives on the term vary significantly among functional areas and departments (Figure 6.1). “Sustainability” is widely accepted in the language of Michigan’s environmental academic and research initiatives. For example, the Provost’s Advisory Council on the Environment (2000) calls for “rich and provocative research on sustainability” and “innovative curriculum development concerning sustainability”. A recent survey (Bernard and Reppe 2001) found 97 courses that address “the correlation between human activity and environmental sustainability”, 15 that address “policy strategies that support a sustainable lifestyle”, and 12 that address “practices that support a sustainable lifestyle.” Therefore, students taking environmental courses are often exposed to the concept of sustainability. This academic acceptance of sustainability is fueled in part by the agreed upon virtues of interdisciplinary teaching and research, which is supported by the concept of sustainability. This situation at Michigan adds to the growing body of evidence that sustainability is in common usage when teaching environmental issues in higher education. However, sustainability in the teaching and research context typically includes only ecological sustainability, as few courses and research projects address social and ecological sustainability simultaneously (Bernard and Reppe 2000). With the new joint administering of the Program in the Environment, potential for collaboration between the social sciences, humanities and natural sciences will increase, which could lead to increased attention to the social side of sustainability. Moreover, it remains to be seen whether the sustainability will move outside of the classroom, and be used as a guiding environmental, social and economic management principle at Michigan.

The term “sustainability” became part of the vocabulary of most operations managers and administrators at Michigan approximately five years ago. Adopted in part
because environmental activists were calling for a sustainable campus, sustainability became a way to organize and promote environmentally oriented actions and a “catch-all” phrase for environmental activities. However, activists began questioning whether operational initiatives were truly moving toward sustainability, which includes fair distribution of resources (i.e., equity), or simply making marginal environmental improvements. After environmentalists’ notions of sustainability became clear to operations administrators, the term began to be avoided or devalued by calling sustainability “unrealistic”, “too broad” or “impossible.” An article entitled “U-M programs pursue goal of environmental sustainability” in the University Record (Kuharevicz 2001) reads: “While true sustainability – defined by Alexander (Director of Occupational Safety & Environmental Health) as zero burden on the environment – would be tough for a sprawling entity such as the University to achieve, there are ways to minimize U-M operations’ impact on the Earth and its resources.” The article continues with the following quote from Alexander: “Our ultimate goal is to make the University as environmentally neutral as possible while meeting academic, research and operational needs, to the point where we minimize our impacts on the environment and natural resources.” The article emphasizes the term “stewardship”, as does the first version of a university operations’ website on “environmental stewardship initiatives”, which began with the following statement:

The University of Michigan is committed to environmental stewardship and sustainability. For the last several years many University departments spanning the campus operations have been proactively implementing stewardship and pollution prevention programs.

The website continued with links to programs on environmental improvement or pollution prevention, without reference to or orientation toward sustainability.

The shift away from the term “sustainability” by operations managers was vividly portrayed during a December 2001 Regents meeting. When a Regent questioned an administrator about the term “sustainability” before a presentation on “environmental
stewardship”, the administrator responded that sustainable development came from
developing countries (and thus is not relevant) and operations departments are interested
in getting work done, as opposed to “rhetoric”. The administrator claimed that
sustainability inspires too much “passion” and “confusion”, and that operations personnel
avoid the term deliberately because the term is “so laden with politics, it has become
meaningless.” Additional evidence of this movement away from “sustainability” comes
from the fact a recent article about “environmental stewardship” in the *University Record*
does not mention the term “sustainability” (Maddix 2001). This article includes a logo –
which “will become familiar as the University continually emphasizes environmental
stewardship” – with the words “Making a Greener Maize and Blue”. This centerpiece of
the current environmental outreach campaign completes the trend toward avoiding
“sustainability”.

Once “sustainability” was understood to imply significant organizational changes,
the term was largely abandoned and devalued in favor of the more benign “stewardship”
and “greening”. Moreover, on the occasions when operations administrators use the term
“sustainability”, it is preceded by “environmental”, as social equity issues are not
integrated with environmental concerns. This situation at Michigan differs from the
situation at the case study institutions because advocates at U of M agree that
sustainability should be the guiding principle for campus environmental issues whereas
advocates at Institutions X and Y disagreed about the value of sustainability. U of M
environmental advocates made the case for the sweeping operational changes implied by
the concept of sustainability (as outlined in the theoretical framework in Chapter II).
Since sustainability was abandoned by the operational administration once the
implications of such an orientation were understood, it appears that sustainability can be a
motivational tool for advocates and a potential long-term orienting strategy, but may also
be too far-reaching for administrators without a clear environmental and social agenda to
grasp.
Michigan’s Housing Division has a unique approach to and perspective on sustainability. Before 1999, the term “sustainability” was not typically part of the vocabulary of Housing employees. In 1999, the Director of Housing Facilities came up with the idea that sustainability could be an organizing theme and driver for Housing’s environmental initiatives, and sponsored a report on how to accomplish this goal using the framework developed by the The Natural Step (Shriberg 1999; Shriberg 2000). Drawing on the recommendations from this report, Housing made “sustainability” a major goal of the organization, created a sustainability oversight committee, and adopted a Sustainability Mission and Goals Statement (Table 6.3). Housing has explicitly attempted to use the concept and practice of sustainability as an orienting and motivating force to move beyond incremental environmental improvement. Sustainability is referred to as a concept that “ups the ante” from recycling and requires Housing to try to “sustain resources over time”, as described by Housing’s Recycling Coordinator and Co-Chair of Housing’s Sustainability Oversight Committee. In fact, the motto of the Housing sustainability efforts, as stated in the title of a Housing Newsletter about environmental initiatives (University Housing 2002), is “Environmental Sustainability: Beyond Recycling”. The results remain to be seen, since the educational challenge of incorporating sustainability into management systems and stakeholder consciousness has been more difficult than expected. Administrators, staff and students have not rallied around the concept of sustainability as readily as the organizers hoped. Moreover, Housing’s orientation toward sustainability has not included consideration of the interrelated social equity side of the concept, which conforms to the trend at Michigan and elsewhere.

**Outcomes**

The University of Michigan has many environmental strengths. The volume and quality of environmental research at Michigan are high. Michigan enrolls hundreds of
We, members of the Housing community at the University of Michigan, recognize that we can affect environmental degradation and/or restoration. We recognize that future generations have a right to at least the same advantages enjoyed by current generations. As stewards of the Earth, we believe we have the responsibility to move toward a sustainable society. By sustainability we mean living, working, and behaving in ways that restore the integrity and biodiversity of the local, regional, and planetary ecosystems and social systems upon which life depends. We therefore strive to:

- Encourage sustainable and restorative practices through education and engagement with our stakeholders, including staff, residents, suppliers, contractors, and the University community.
- Assess and reduce the long-term environmental impacts of our decisions.
- Reduce our use of water, energy, and materials by incorporation of technologies and practices consistent with a sustainable and restorative organization.
- Reduce pollution and use of toxins with the long-term goal of zero discharge and use.
- Openly communicate and monitor our progress toward sustainability.
- Provide staff with the necessary training and resources to meet these sustainability goals.

students annually in courses covering environmental issues from almost every aspect imaginable. Many Michigan faculty, staff, students and alumni are strong environmental advocates. Michigan’s facilities are managed well within the limits of regulatory compliance and operations managers maintain solid programs in energy conservation, recycling, and pollution prevention. Michigan exceeds the definition of an institutional “environmental-leader” outlined in the theoretical framework in Chapter II because efforts are more than “piecemeal” and “short-term”, and Michigan is a leader on many ecological issues. However, there is strong circumstantial evidence that Michigan is not considered a sustainability-leader among peer institutions, in the environmental community and by the definition outlined in the theoretical framework.

In the emerging literature on sustainability in higher education profiled in Chapter II, there are no case studies specifically on Michigan (beyond my work), and the institution is rarely mentioned. At conferences with scholars and practitioners of environmental management in higher education, there is little representation from Michigan. When nonprofit organizations dealing with environmental issues in higher
education are queried about institutional environmental-leaders, Michigan is not typically on the list. Perhaps even more telling, the vast majority of stakeholders – even individuals heavily involved in environmental issues – are unaware of environmental initiatives in departments and divisions other than their own, a situation that the Faculty Environmental Steering Committee is trying to change. As the Provost’s Advisory Council on the Environment (2000) reports: “The environment is an area of potential competitive advantage for the University of Michigan, but we are not capitalizing on it.” However, Michigan’s operational environmental initiatives have received some attention in the popular press, largely due to a public relations campaign. For example, Perrin’s article in the Chronicle of Higher Education (2001) rates U of M as one of the Top 10 environmental campuses and the previously mentioned article in USA Today (Marklein 2002) claims “every day is Earth Day at the University of Michigan”.

One reason why Michigan is not generally recognized for its environmental efforts could be that the institution has not publicized its institutional leadership in sustainability research, teaching, service and operations. Under this assumption, Michigan is a sustainability-leader because of the individual actions of faculty, staff and students. The problem with this assumption is that, as set forward in the model in Chapter II, part of being an institutional sustainability-leader is having a comprehensive, systemic effort with the ultimate goal of consideration of sustainability in all facets of decision making. Michigan does not meet these criteria because it fails to leverage and build on the strengths and enthusiasm of its stakeholders, and thus environmental (and interrelated social) issues are not a major, campus-wide influence on decision making and reputation. Therefore, while Michigan has the potential to be a leader and has some strong initiatives, the institution lacks the integration and commitment necessary to move in a coherent manner beyond piecemeal greening efforts toward sustainability (Figure 6.1). In many ways, Michigan represents the reverse of the case study of Institution X because Michigan has many “grassroots” efforts with a lack of commitment and
coordination from the top, and a lack of institutional structures (such as a sustainability oversight committee) to ensure success.

Student advocacy groups have called for a Sustainability Coordinator at the Associate Provost’s level, claiming this strategy has worked at other institutions. The Faculty Environmental Steering Committee has called for an Environmental Institute to bring together disparate efforts on campus. The Provost’s Advisory Committee on the Environment has called for the creation of a campus-wide, inter-departmental advisory committee to leverage existing strengths. Students, faculty, staff and alumni are working together to ask the University to sign a version of the Kyoto Protocol on Climate Change. Former President Bollinger expressed to student activists that he would consider creating an environmental or sustainability mission and policy statement and publicly release it to the university community (Alexander 2001). However, no action has been taken on these coordinating and visioning measures. The reasons that pleas from students, faculty, administrators, staff and alumni for high-level coordination and leveraging have not been heeded vary, but largely come down to a matter of priorities. Many decision makers at Michigan – particularly those controlling political and fiscal resources – do not view environmental issues as a primary concern. Without leadership from the top and with scattered allegiances at lower levels, there is no driving force to coalesce the pockets of sustainability activity and disciplinary knowledge into a cohesive whole.

However, there are some potentially encouraging signs. First, Michigan will have a new President, Provost and Chief Financial Officer for the 2002-2003 academic year. This new leadership could have a positive effect on environmental efforts (students are advocating for environmental considerations in the choice of a new president). Of course, the new leaders could also reduce resource allocations to environmental efforts. In the interim (January-August 2002), the acting President is B. Joseph White, former Dean of the Business School and former Chair of the Provost’s Advisory Committee on the Environment. Already, environmental advocacy groups are enjoying access to and
receiving positive signs from Interim President White. Second, the new joint Program in the Environment should draw more students, faculty and staff to environmental issues, which could energize environmental teaching, research and operations. Third, students are beginning to organize and advocate more strongly for environmental issues. The drafting of a student-based campus plan for sustainability helped coalesce environmental groups into a major force on campus. Fourth, operations managers are beginning to develop a quantitative understanding of campus environmental impacts, due to an SNRE master’s project and other initiatives to develop campus sustainability indicators. These data might help overcome barriers to moving beyond pollution prevention into integrated sustainability management. Fifth, faculty are “more open to and positive about interdisciplinary collaboration on campus environmental issues than ever before”, according to one faculty member who is heavily involved in campus environmental efforts. Therefore, there might be a window of opportunity for Michigan to become a sustainability-leader, if the leadership of the institution inspires and provides incentive for greater coordination and a more concentrated effort.

Overall, while Michigan has some strong environmental initiatives and programs, sustainable thinking has not deeply penetrated the decision making of the organization. Despite recent efforts, there is little prospect for coordination and leveraging of environmental efforts in the near term, although there are several potentially encouraging signs for the future.

Conclusions

The model predicts that sustainability-leadership is most likely to come from progressive, reputation- and image-conscious, collaborative, ethical institutions with transformational leaders. Michigan and Ann Arbor are progressive and liberal, and the institution displays a strong orientation toward being a reputation and image leader on all possible fronts. However, Michigan’s decision making structures are largely bureaucratic
and hierarchical, and Michigan’s leaders are transformational only on a small set of issues which does not include the environment and sustainability. It is difficult to assess Michigan’s ethical orientation. Therefore, Michigan displays a profile consistent with the predicted attributes of an institution with some aspects of sustainability-leadership, but lacking collaborative decision making structures and strong environmental leadership.

Since collaborative, collegial culture and commitment from transformational leaders were shown to be strong predictors of sustainability-leadership by the survey (see Chapter III), the fact that Michigan has strong environmental initiatives is somewhat surprising, and points to the importance of reputation, politics and institutional environmental history as well as the fact that Michigan has not achieved sustainability-leadership.

More specifically, the Michigan case study reinforces the importance of transformational leaders and progressiveness of stakeholders in providing perhaps necessary, but not sufficient conditions for environmental advancement. Leaders and other stakeholders who are transformational and progressive are more likely to be open to environmental issues, but need significant pressure and a solid rationale to pursue environmental advancement. Image-seeking behavior – even among large institutions with established reputations – is a particularly strong “hook” for change agents, as the Michigan case study demonstrates. Bureaucracy is a strong barrier to environmental progress, particularly given the level of collaboration and coordination necessary for significant environmental improvement, as demonstrated by Michigan, the comparative case study and the survey.

Dedicated faculty and students as well as external pressure groups (including alumni, nonprofit organizations and the local community) and operations staff drive Michigan’s environmental initiatives. These stakeholders often rely on the assumption that Michigan should be a leader in everything. Absent from this disparate and uncoordinated group is top leadership (which the model predicts to be an important driver) and an identifiable core of environmental advocates. Beyond the expected factors
such as the importance of stakeholder collaboration and leadership support, the Michigan case study suggests several unanticipated drivers for environmental actions. First, Michigan demonstrates that external stakeholders – such as alumni, community members, nonprofits and governmental organizations – may significantly influence campus environmental activities. The success of these interventions is not clear yet. Second, Michigan shows that operational greening can be linked to academic efforts through the desire of faculty and others to “practice what they preach”. Third, Michigan demonstrates the importance of building off past successes as a driver for environmental initiatives. Institutional tendencies toward maintaining the “status quo” can become advantageous to environmental advancement once leadership on environmental issues is established.

Rationales for environmental actions vary among stakeholders, but often revolve around the ethical, reputational and other long-term considerations encapsulated in the “enlightened self-interest” construct (see Chapter III). Stakeholders gravitate toward this rationale as a strong way to motivate efforts, which is a wise (and rare for large public institutions) decision according to the survey results presented in Chapter IV. Therefore, it is surprising that administrators, the President and the Board of Regents are not responding to the strategic benefits of environmental programs, although the large number of competing interests at Michigan may account for this conundrum. For example, commitments to areas such as the life sciences derive from the greater availability of fiscal resources and prestige as well as the ability to not directly address issues of equity associated with these efforts. Sustainability advocates at Michigan use the enlightened self-interest rationale in a different way than at the other case study institutions, calling for “moral leadership”, which specifically identifies Michigan’s place as a local and national leader as well as potential reputation benefits as rationales for environmental action. Rationales for operational efforts are typically based in cost-
effectiveness and regulatory compliance, which could explain the small-scale and uncoordinated efforts, according to the model, survey results and comparative case study.

The strongest barriers to leveraging Michigan’s environmental competencies are a lack of coordination, the presence of friction among stakeholders, the low priority assigned to ecological concerns by top decision makers (including the former President and the Board of Regents) and an aversion to risk. The relationship between lack of leadership commitment and low priority of environmental initiatives found by the survey and comparative case study is clear at Michigan. Moreover, there is a lack of governmental pressure and state leadership on environmental issues, which makes it more difficult for Michigan’s effort to be placed in a larger context and establish broader legitimacy and leverage. Surprisingly, funding does not appear to be the major barrier at Michigan; rather it is institutional will, leadership and politics. The large size and vast resources of U of M might explain the strength of this finding.

While environmental curriculum and research advocates as well as Housing employees generally rally around the concept of “sustainability” (although the results are ambiguous to date), operations administrators intentionally avoid and devalue this term and concept. Moreover, many stakeholders have not considered environmental issues in concert with interrelated social issues, including environmental justice and issues of resource distribution equity. While sustainability may be well established in academic initiatives, and advocates may find the concept appealing and motivating, the implications of orienting toward sustainability can be intimidating to administrators. The systemic, far-reaching implications of sustainability are a strength if accepted as an organizational change strategy, but can be a barrier to gaining initial support and momentum.

This case study of the University of Michigan provides an important perspective that alters the evolving theoretical framework. Michigan clarifies the role of large institutions in being sustainability-leaders. Michigan demonstrates that historical
leadership and pockets of strong environmental activity and support do not guarantee institutional sustainability-leadership. Michigan emphasizes the importance of transformational leaders, image-seeking behavior and progressiveness of stakeholders. Michigan shows that coordination between stakeholders and top-level support are essential to developing the reputational capital and synergies necessary to become a sustainability-leader. This result appears to be particularly robust at large institutions with decentralized, bureaucratic decision making structures. Moreover, the absence of a campus-wide long-term vision and coordinated plan for sustainability hinders all efforts – as resources are not readily available and direction is often unclear – but does not prevent strong, independent environmental programs from developing. Finally, Michigan confirms that the concept of sustainability can have different meanings and value to different stakeholders within the same institution. The next and final chapter combines these lessons from the University of Michigan with the comparative case study and survey results to outline a revised model.
CHAPTER VII

CONCLUSION/DISCUSSION

Since academics (including students) have played a major role in defining and responding to the growing ecological (and interrelated social) crisis recognized throughout the U.S. and world, one would think that institutions of higher education would be leading the way toward a sustainable solution. However, as described in Chapter II, there is great reluctance and a dearth of leadership among colleges and universities in committing to and demonstrating ecological, social and economic sustainability. This previous chapters of this dissertation analyzed organizational factors that correlate with institutions taking leading or lagging roles in teaching, advocating and modeling sustainability. This study also outlined a framework and strategies to create organizational change for sustainability in U.S. colleges and universities.

This final chapter has two interrelated goals: to outline a model of processes and outcomes in higher education which future scholars can use to analyze campus sustainability and to provide guidance to potential change agents. To this end, this chapter summarizes the findings of this research by revisiting the five original research questions and outlining conclusions (which can be used as hypotheses in future studies and which build on each other) in light of the evidence from this study. This chapter explores the relative strength of these findings to form the final iteration of the original framework proposed at the end of Chapter II (Figure 7.1). Following this assessment of
Figure 7.1: Revised Model of Organizational Factors Leading to Sustainable Campuses

SUSTAINABLE CAMPUS
Comprehensive, Systemic, Programs Oriented around Sustainability

RATIONALE/MOTIVATION
Strategic Positioning (Campus Leaders)
Ethics/Morality (Other Stakeholders)
Cost/Regulations (Certain Situations)

DRIVERS
Coordinated Efforts from Diverse Stakeholders
Support of Leaders
A “Spark” or “Catalyst”

ORGANIZATIONAL CONDITIONS
Image-Seeking Behavior; Progressive/Liberal Politics;
Collaborative Decision Making Structures; Collegial Atmosphere;
Transformational Leadership? Ethics/Morality?

Barrier
Low Priority of Environmental Issues

Barrier
Lack of Coordination
the theoretical framework, this chapter outlines the implications of this study for theoretical development and practice, limitations of the analysis, and directions for future research.

The results presented in this chapter should be interpreted with caution because this study sampled a maximum of 13 individuals at each of the 59 U.S. (4-year) colleges and universities which had signed the Talloires Declaration on Sustainability as of May 2001. There are over 3,500 colleges and universities in the U.S. As explained later in this chapter, this nonrandom sample can lead to sampling and nonresponse bias. Moreover, the generalizability of the comparative case study and assessment of the University of Michigan are constrained by the unique attributes of these three campuses as well as the limitations of on-campus visits, participant-observation and document analysis. Finally, my perspective is – as outlined in Chapter I – as a scholar and an advocate, and my assumption is that colleges and universities should be leading society toward sustainability. This “insider” and “activist” perspective provides opportunities for detailed and contextual analysis, but may bias results towards particular points of view. In general, this final chapter focuses on scholarly conclusions relating to building a theoretical and empirical model of sustainability in higher education, but also provides implications for activism.

Which Organizational Conditions are Most Conducive to Producing Strong Campus Sustainability Efforts?

The theoretical framework outlined in Chapter II asserts that unique organizational conditions – which are not specific to environmental issues – at each college or university affect the chances for success of campus sustainability initiatives. The findings strongly support this assertion for image-seeking behavior, collaborative decision making structures and political orientation. The survey and case studies demonstrate the primary importance of perception of image and reputation as a key
“hook” for change agents. Institutions striving to improve their external and internal image are likely to be open to sustainability initiatives, if advocates can link an institution’s desire to become nationally or internationally recognized (or maintain a strong image) with environmental and sustainability-related issues. For example, both Institution X and Institution Y are striving to improve their national reputations, a condition which environmental change agents are attempting to link to environmental and interrelated social issues.

The survey demonstrates the crucial importance of collaboration between key stakeholders through the direct relationship between collaboration and sustainable outcomes. The case studies reveal that this relationship is more complex than the original framework suggests. The first part of collaboration, as defined by this study, is the approach to decision making (Figure 7.1). When more individuals are involved in decision making through collaborative structures (as opposed to “top-down” processes), environmental issues and sustainability are more likely to become a major campus concern, as demonstrated by the environmental committees at Institution X. Since environmental and interrelated social issues span multiple divisions, departments and stakeholders, they are only likely to become a priority when cross-functional and interdisciplinary decision making is prevalent, as the University of Michigan demonstrates by its lack of collaborative structures and lack of institutional attention to sustainability. The second part of collaboration relates to the atmosphere of the institution. An unexpected finding of this research is that a collegial environment – where stakeholders relate to each other in a consistent and friendly manner – is also very important in providing a conductive atmosphere for the ascendancy of campus sustainability initiatives. In part due to the complex and controversial nature of environmental and interrelated social issues discussed in the beginning of Chapter II, the ability of individuals to interact on a regular and collegial basis (i.e., the intangible “feel” of the campus) is a key factor for campus sustainability success. The survey
demonstrates this quantitatively while Institution X demonstrates this facet in a positive manner and Institution Y demonstrates this facet in a negative manner. Therefore, both formal and informal decision making structures that encourage stakeholder involvement and avoid (or work around) top-down, bureaucratic approaches foster campus sustainability efforts. Institutions lacking this collaborative environment are more likely to have fractured, disjointed environmental initiatives.

The survey and case studies demonstrate that environmentalism and a focus on sustainability correlate with perceptions of progressive and liberal political thought on campus. The strength of this relationship is striking at the institutional and individual levels. At the institutional level, progressive and liberal orientation is a strong predictor of the ascendancy of ecological and interrelated social issues as a campus priority. Institutions which are predominantly conservative or “anti-liberal” in their political orientation – often demonstrated through appointments to the governing board and administration – are less likely to seriously pursue sustainability. This relationship is clearly demonstrated by the survey data. At the individual level, it is the politically liberal people – even within conservative institutions – who tend to promote campus sustainability, as demonstrated by Institutions X and Y. However, the approach that these change agents take to promoting sustainability varies greatly depending on the broader political orientation of the campus, as demonstrated by the politically liberal University of Michigan. Generally, I did not anticipate the strength of political orientation as a condition for campus sustainability, and this initial finding warrants further research.

The perceived presence of transformational leadership on campus is not as strongly linked to campus sustainability success as predicted. While the survey found a correlation between the presence of transformational leadership and sustainable outcomes, this linkage disappeared in the presence of other organizational conditions. The case studies demonstrate that leaders who are perceived to be transformational often
provide a “supportive” ear in the administration for change agents, such as the new President at Institution Y. However, environmental and interrelated social issues must rise to the attention of these decision makers, which is not assured simply because the leaders are perceived to be transformational, as demonstrated by Institutions X and Y. Moreover, transformational leaders can lead in many directions, not all of which are environmentally or socially beneficial, as the University of Michigan demonstrates through the lack of priority assigned to sustainability as opposed to issues such as biotechnology. Finally, because issues relating to sustainability are long-term, campuses must foster a culture that institutionalizes transformational leadership – as opposed to having one or two leaders at a single point in time – in order to have a conducive atmosphere for campus sustainability efforts. In general, while the survey found that perceptions of transformational leadership were strong factors predicting sustainable outcomes, the case studies reveal that leadership influence is more complicated.

The original model predicts that institutions perceived to be ethical/moral are more likely to be involved in campus sustainability efforts. The survey found a weak positive correlation between institutional ethics/morality and sustainable outcomes, while the case studies reveal no relations. Therefore, either institutional ethics and morality is not strongly related to sustainability, or the concept is too vague to connect to sustainability-leadership without a more focused study.

The original framework predicts that demographic conditions do not have a major effect on campus sustainability initiatives. The survey data support this assertion by finding that progress on sustainability is possible at all types of four-year U.S. institutions which signed the Talloires Declaration, although conditions for success are slightly more favorable at small, private colleges. However, the rationale for sustainability-leadership varies by institution type, with small, liberal arts colleges favoring ethical, long-term approaches while larger, public universities favor short-term cost and regulatory rationales. The case studies are too small in number to provide additional insight into this
phomenon. Moreover, these results should be interpreted with caution because the institutional sample is biased toward larger, public institutions, as described in Chapter III and reiterated later in this chapter.

In general, this study supports the proposition that (non-environmental) organizational conditions at a college or university affect the approach and outcomes of sustainability efforts. More specifically, the following conclusion represents the relative and cumulative influence of the organizational conditions analyzed in this dissertation (Figure 7.1):

**Conclusion 1:** Image-seeking behavior, collaborative decision making structures, collegial atmosphere and progressive/liberal political orientation are strong positive (non-environmental) conditions for success in campus sustainability efforts. However, these conditions are beneficial to campus sustainability only when strongly linked to environmental and social issues by change agents. Institutional demographics do not have a major impact on outcomes, but can influence advocacy approaches.

**Which Stakeholder Groups are Most Effective in Driving Campus Sustainability Efforts?**

A consistent finding in the survey and case studies – as predicted in the original model – is that top leadership commitment (including the governing board, President and administrators) is a key driver for campus sustainability (Figure 7.1). The survey suggests that presidential and administrative commitment leads to success. However, the case studies reveal that top leadership support is necessary only to a limited degree. Leadership commitment is important in signaling the importance of environmental and interrelated social issues (through resource allocations and other incentives), providing a strategic vision and enhancing coordination, as clearly demonstrated by Institution X. If at least one top leader is directly involved in campus sustainability efforts, change agents
gain leverage, access to decision makers and possibly an inspirational force. However, as the Michigan case study demonstrates, environmental issues can emerge as an institutional concern without the involvement of any individual high in the organizational hierarchy (albeit with difficulty), if grassroots support is strong and lower level stakeholders are skilled at strategic planning.

The original model stresses that a committed core of individuals at all levels within the institutional hierarchy is required to drive campus sustainability efforts. The survey demonstrates that environmental efforts are typically driven by individuals low in the organizational hierarchy (e.g., students and faculty). In fact, this study consistently found that commitment to campus sustainability varies inversely with the level of power within the institutional hierarchy (i.e., students are the most concerned, and governing boards are the least concerned). “Outside” stakeholders – such as nonprofit organizations, alumni, the government and community – are drivers of campus sustainability at specific campuses, but are not important forces at other institutions. Generally, sustainability advocacy is most effective when the involved individuals are diverse in terms of background and interests, and work well together (i.e., Institution X). The original framework did not predict the surprising strength of the finding that interpersonal relationships among potential change agents and possible allies are a major driver of campus sustainability efforts. Clearly, the presence of an environmental “hub” is most beneficial to campus sustainability when the individuals involved in sustainability are charismatic, diverse and adept at working with many types of other stakeholders.

The original framework omits a driving force that is very important in campus sustainability efforts: the presence of a “spark” or “catalyst”. The case studies and – to a
limited degree – the survey data demonstrate the necessity of a spark or catalyst. Since environmental and interrelated social issues do not typically compete for the time and attention of top decision makers and others, potential change agents require something that brings sustainability to the forefront, such as the threat of a factory dairy farm near YU’s campus or a petition drive at the University of Michigan. This action can be either planned by sustainability advocates or happen as a result of external forces. While building off past successes, “practicing what is preached” in environmental classes, and a subjective feeling that conditions are “right” are all important potential drivers of campus sustainability, the ascendancy of sustainability requires a “boost” that brings together diverse interests.

The following conclusion represents the findings on the drivers for campus sustainability (Figure 7.1):

**Conclusion 2:** A diverse core of stakeholders – with the support of top leaders – can drive campus sustainability by acting in a coordinated manner and taking advantage of conducive organizational conditions as well as providing or capitalizing on a “spark” or “catalyst”.

**What are the Strongest Rationales/Motivations for Campus Sustainability Efforts?**

The survey and case study data largely support the predicted efficacy of rationales for campus sustainability efforts (Figure 7.1). The survey demonstrates that the rationale of “enlightened self-interest” is highly effective as a way for potential change agents to make their case for resources and supporters, and move their campuses toward sustainability. However, the comparative case study reveals that this rationale is more complex than predicted by the original framework. At high levels in the organizational hierarchy (i.e., governing boards, the President and administrators), appeals to institutional strategic positioning are effective, as the case study institutions demonstrate.
Depending on the institution’s level of prestige generally and on environmental issues, these appeals can be tailored to make a case for becoming a sustainability-leader (i.e., Institution X) or maintaining a leadership position (i.e., University of Michigan). Benefits to reputation, recruiting and related facets are important to institutional leaders, and thus linking sustainability efforts to organizational advancement is a wise advocacy strategy. At lower levels in the organizational hierarchy (i.e., students and faculty), sustainability rationales that appeal to personal ethics and commitment are more effective than those relating to strategic positioning because individuals seek outlets to express moral orientation through the organizations in which they are involved. Therefore, change agents can “unlock” an underlying environmental and social ethic by encouraging involvement in sustainability efforts, and can receive broad support in return, as demonstrated at XU and the University of Michigan. However, this underlying ethic must be pre-existing and identifiable for this strategy to be effective, as demonstrated by YU.

The original propositions assert that appealing to short-term cost-effectiveness and regulatory compliance is not effective in promoting campus sustainability. The survey data partially confirm this assertion because there is no relationship between short-term rationales and sustainability outcomes. However, the University of Michigan demonstrates that in certain cases – typically for operational environmental efforts – short-term appeals can be effective. However, short-term rationales tend to be controversial (particularly those appealing to cost, as demonstrated by YU) and end up becoming – at best – a strategy for initiating scattered, piecemeal environmental improvement.

Generally, the approach that change agents take to promoting environmental sustainability issues greatly impacts outcomes, as the following conclusion asserts (Figure 7.1):
Conclusion 3: Campus sustainability efforts are stronger when advocates appeal to the institutional strategic positioning interests of high-level decision makers and the personal ethics of those lower in the organizational hierarchy. Appeals to cost savings and regulatory compliance are only effective in the initial stage of campus environmentalism and for short-term operational efforts.

What are the Dominant Barriers to Moving a College or University toward Sustainability?

As predicted by the initial proposition, the survey data suggest that the most important barrier to the ascendancy of environmental and interrelated social issues on campuses is that these are not a priority (Figure 7.1). Case studies participants claim that many problems associated with promoting campus sustainability stem from the lack of priority assigned to these issues by institutional decision makers and others. In fact, the barriers to campus sustainability appear to be highly interconnected (as demonstrated quantitatively and qualitatively), including major problems such as lack of money, lack of time and institutional inertia.

Beyond the standard barriers to creating organizational change in academia that potential change agents face, one surprising outcome displayed through the case studies and survey comments is how problematic working across organizational and functional boundaries can be. This barrier – which is particularly problematic between operations staff and faculty/students – is compounded by interpersonal conflicts, as YU clearly demonstrates. In the absence of strategic alliances and collaborative group processes among advocates, moving environmental issues onto the agenda of decision makers is extremely difficult. Therefore, the data lead to the following conclusion:

Conclusion 4: The low priority of environmental and interrelated social issues on the campus agenda greatly impedes movement toward sustainability. Many barriers to campus sustainability – including lack of funding, lack of time and organizational
resistance to change – stem from or are exacerbated by the low priority of environmental issues. Lack of coordination among critical stakeholders compounds this problem.

How Advanced are Colleges and Universities in Moving toward Sustainability?

What Distinguishes Strong Programs from Weaker Efforts?

The Talloires Declaration survey clearly demonstrates that most campuses are in the beginning stages of environmental management and few have begun to undertake major organizational changes. The most common environmental strength is – somewhat unsurprisingly – curriculum development, although requiring basic ecological literacy is not on the agenda of most campuses. Many campuses have environmental groups and sponsor community service activities, and many institutions have individual environmental leaders, but few institutions are outspoken on sustainability, as defined by taking institutional leadership positions on issues such as global warming or overconsumption. Campuses excel in traditional operational measures – such as recycling – but are reluctant to undertake more ambitious operational activities, such as promoting alternative transportation and buying renewable energy. The integration of sustainability into research varies greatly, but this variation is based on the type of institution as opposed to the level of ecological commitment.

The survey and case studies show that environmental policies and campuswide actions are lacking at all but the most environmentally and socially advanced campuses. One of the most surprising survey findings is that only 25% of survey respondents realize that their institutions are signatories to the Talloires Declaration. While this finding indicates that very few institutions have organized specifically around Talloires, it does not indicate that campus sustainability declarations are useless. XU and YU demonstrate that Talloires or related declarations can form a critical part of an overall strategy to create legitimacy and develop a strategic plan for environmental and interrelated social
issues. Therefore, Talloires is not the driving force for campus sustainability (except in rare cases), but can be an important tool for advocates and serve as one of many indicators of commitment.

Another surprising result is the enthusiasm of change agents about the potential for sustainability to become a major focus of their institutions, as demonstrated by the survey comments, interviewees at XU and YU and activists at the University of Michigan. The strong belief that campus sustainability efforts will succeed is based in the strong grassroots support that change agents receive as well as initially favorable (or, at a minimum, not oppositional) responses from institutional leaders. However, this study reveals little evidence of the widespread coordination of operations, teaching, service and research predicted to characterize strong sustainability efforts. Few colleges or universities consider sustainability a core competency or a cultural and decision making criterion. Therefore, most institutions have pockets of environmental activities, but little or no coordination, leadership or major actions, and have yet to address the deep questions of sustainability. This situation leads to the following conclusion:

**Conclusion 5:** Campus sustainability efforts in the U.S. are in the initial, piecemeal stages. Movement toward campus sustainability will occur when change agents convert disparate efforts into comprehensive efforts integrated across departments and functional areas by convincing institutional leaders and other stakeholders about the criticality of sustainability at the institutional level.

What are the Implications of Orienting Campus Initiatives around “Sustainability”?

This study did not reveal as much as expected about the differences between institutions oriented toward sustainability as opposed to those oriented toward “greening”, “environmentalism”, “stewardship” or related concepts. The survey supports the notion that when advocates use sustainability as an orientating concept, they create
robust environmental initiatives. However, this finding could not be confirmed with the case studies and the actual meaning of sustainability used by survey respondents is unclear. XU, YU and the University of Michigan’s experiences confirm that sustainability is a highly contentious term and approach, and many individuals – even committed environmentalists – are hesitant to use the concept as an organizational tool. While the concept of sustainability has a foothold in campus environmental courses, the implications of the concept in campus practice are unclear. Most institutions (and advocates) cannot get past the difficulties involved in defining sustainability.

This situation reveals a problem which is larger than a definitional issue: most institutions and individual stakeholders are not ready to change “business as usual” by committing to true sustainability. The reversal in their use of the term “sustainability” by operations administrators at the University of Michigan most vividly reveals this trend. However, the survey and case studies reveal that sustainability can be used as a leveraging tool to communicate the gravity of environmental issues, establish the connection with social issues, motivate certain stakeholders, and set long-term strategic goals and visions, if the meaning assigned to sustainability by advocates is clear. The case studies also reveal that environmental initiatives tend to be scattered and ignore issues of equity when sustainability is not used as an orienting force. Moreover, the analysis of XU raises the possibility that campus environmentalism typically follows a path that begins with “greening” or “stewardship” and, once environmental advocates firmly establish these frameworks at the institutional level, the broader context of sustainability is considered. The following conclusion represents this study’s findings about sustainability:
Conclusion 6: The use of the term and concept “sustainability” in campus environmentalism implies an effective long-term, systemic approach to environmental and interrelated social and economic issues. Focusing on sustainability as an orienting concept can motivate advocates and draw in supporters, but is often intimidating to campus leaders, disinclined individuals and even environmental advocates because of its far-reaching and holistic approach and implications. A focus on sustainability represents an advanced stage of campus environmentalism.

What Do Different Methodological Approaches Contribute to Analyzing Campus Sustainability?

The data reveal that each methodological option used in this research has particular value (and drawbacks) for studying sustainability in higher education. Survey research provides a baseline, cross-institutional framework for testing initial propositions and selecting case studies and topics for in-depth evaluations. However, respondents tend to overstate environmental successes on surveys, perhaps because of social desirability bias or perhaps because respondents tend to be environmental advocates or supporters. Moreover, environmental knowledge is diffused across campuses, which can lead to conflicting responses within the same institution. In addition, strength in a particular area of environmental management (e.g., incorporating environmental issues into curricula) leads to a more narrow interpretation of questions and responses.

The comparative case study from an “outside” perspective is useful when the selected campuses demonstrate significant variance on the variables of interest. For example, studying the influence of campus leadership on sustainability efforts at two institutions with different leaders can lead to in-depth analysis and conclusions. However, each comparative case study is limited to the study of only a few of the many issues of interest for sustainability in higher education, due to the improbability of finding significant variance on a wide range of variables, and the time requirements of this form
of analysis. The issues studied have to be apparent on both campuses, yet applicable to a large number of other campuses.

The single case study based on participant observation is useful to track historical development of campus sustainability, and to analyze many issues in an in-depth manner. Therefore, the participant observation case study is best used when the longevity of the issue is a major concern, such as in the study of the development of campus environmental terminology over time. The single case study is less useful in drawing broad conclusions and testing hypotheses. Therefore, case studies based on participant observation are best used either to analyze an issue which has not received attention previously, to study in-depth an issue of major concern and to generate hypotheses.

Overall, the approaches used in this study support the proposition that the use of multiple methodologies (i.e., triangulation) is the most appropriate and analytically useful way to approach campus sustainability research. This finding particularly applies when the issues studied are many in number and broad in nature. More focused studies than this dissertation could choose a particular methodological option based on the issue to be analyzed.

**Implications for Theoretical Development**

The greatest theoretical contribution of this study is to the field of sustainability in higher education. As discussed in Chapter II, this field is in the early stages of development and lacks empirical data as well as rigorous academic case studies. Therefore, this study represents a major step forward by developing an empirical and conceptual framework upon which future work can be based. Within this context, this dissertation does not “resolve” many issues regarding how and why campuses become leaders in sustainability, particularly given the relatively limited sample size. Rather, this research raises questions and analyzes initial propositions, leaving space for alternative interpretations and the generation and testing of future hypotheses.
More specifically, this study establishes the importance of non-environmental internal conditions – particularly image/reputation, decision making structures and political orientation – in providing a context for success or failure of sustainability initiatives. This dissertation establishes that multiple, diverse stakeholders (especially faculty and students) – with the support of top leadership – are most likely to be successful in creating conducive conditions when they promote sustainability in terms of institutional strategic positioning (to institutional leaders) and an ethical/moral obligation and opportunity (to other stakeholders). More generally, this research supports the assertion that the type of stakeholders involved in sustainability advocacy as well as the approach that change agents use in promoting sustainability can significantly impact results. This study establishes many legitimate barriers to campus sustainability, but emphasizes the importance of institutional priorities, interpersonal relationships and cross-boundary communication as particularly problematic. This dissertation demonstrates that campus environmental efforts are not generally integrated across functional areas, and typically lack policies and campus-wide actions. This research asserts that when change agents orient their efforts around the concept of sustainability, initiatives are more likely to have a long-term, strategic focus that integrates social and economic issues. However, the concept and term sustainability is highly controversial. Overall, this study fills a major void in the campus sustainability literature by establishing a framework and priorities for analysis. Future research directions are explored in more detail later in this chapter.

This dissertation’s contribution to the literature on sustainability theory lies mainly in testing the practical value of the concept in an academic setting. This research reveals that sustainability is receiving widespread recognition in college and university classes on the environment at institutions which have signed the Talloires Declaration, but that the concept is still very controversial as an organizational change strategy and management paradigm. The implication for future theoretical development is that more
attention should be paid to the motivational and practical implications of sustainability because the vast amount of time and effort devoted to defining sustainability has had little tangible impact. In higher education, the concept of sustainability has not emerged as a unifying theme. A more explicit roadmap is needed, particularly for institutional leaders, about the implications of orienting toward sustainability. This research begins this process.

This study’s contribution to the field of higher education management is indirect. By studying how a particularly subset of colleges and universities (i.e., Talloires Declaration signatories and the University of Michigan) respond to a certain set of issues – environmental and interrelated social problems – this dissertation highlights the increasing importance of the social context of higher education. This dissertation largely supports the emerging theories of higher education governance that focus on multiple frames of reference and conflicting stakeholder agendas. More specifically, studying sustainability in higher education reveals that constraints on the time and energy of leadership are intense and difficult to combat without a compelling reason or “spark” to bring the issue to the attention of decision makers. Sustainability-related issues are not competing for the attention of institutional leaders because they do not typically represent a “direct threat” nor have tangible short-term benefits. Therefore, advocates must use increasingly creative strategic plans to access institutional resources and receive legitimacy and, ultimately, institutionalization.

The main contribution of this dissertation to the field of corporate environmental management and social responsibility is in establishing the importance of organizational advocacy strategies based on “enlightened self-interest”, a concept which arose from the corporate literature. The efficacy of strategic positioning appeals to institutional leaders and ethical/moral appeals to other stakeholders may be directly applicable to corporations. The finding that cost-effectiveness and regulatory demands are not strong sustainability motivators (except in the very beginning stages of environmental
management or for certain operational measures) might be applicable to corporations. This dissertation bolsters the finding that the low priority of environmental and interrelated social issues is a major barrier to corporate environmentalism by establishing that this problem also exists in higher education. Finally, this research conveys the controversial nature of sustainability and outlines strategies for organizational change which may be directly applicable within corporations.

The major contribution of this dissertation to the field of transformational leadership is in opening up a new combination of issues (i.e., sustainability) and organizations (colleges and universities) to test the impact of these leaders. The results from this research are inconclusive, but provide an opportunity for future scholars to take a more in-depth look at the influence of transformational leaders on the approach and impact of sustainability advocacy. This study establishes the role that leadership support plays in promoting or preventing the ascendancy of sustainability as an organizational priority. This dissertation also establishes the critical position of interpersonal relations between leaders and followers in campus sustainability. These findings are likely to be applicable to other types of organizations and issues.

**Implications for Advocacy**

A major goal of this dissertation (and a theme throughout the text) is to provide strategies for success in pursuing sustainability in higher education. This study contains many specific strategies potentially applicable to a broad range of campus circumstances and sustainability advocates. The purpose of this subsection is to summarize many of these strategies through a list of general recommendations for sustainability advocates:

1) **Know Your Institution:** While the study provides details on which organizational conditions are conducive to progress on sustainability and which are not, an important general finding for advocates is that knowledge about your institution translates directly into strategies that are more productive. Understanding institutional characteristics that
affect perceptions and actions related to sustainability is a key precondition to developing an effective advocacy campaign.

2) **Diversify Your Allies:** Campus sustainability efforts tend to arise from a small group of committed individuals with similar viewpoints and backgrounds. This study demonstrates that sustainability “allies” can and should come from many different disciplines and departments, as the case study of XU demonstrates most vividly. Positions within the institutional hierarchy often do not account for the level of influence or commitment that individuals have relating to sustainability, as the University of Michigan case study demonstrates. Therefore, advocates should find people who believe in sustainability and provide them with the rationale and resources to advance initiatives and avoid reluctant individuals. In fact, the more diverse the sustainability coalition, the more likely advocacy is to be successful and recognized.

3) **Tailor Your Approaches:** This study makes it clear that the way to effectively promote sustainability to your governing board is different from the way to promote sustainability to students or operations staff. The lesson for sustainability advocates is to carefully assess potential reasons for support or resistance to sustainability initiatives before approaching individuals or groups of stakeholders. One derivation of this strategy documented in this research (particularly at XU and YU) is that the use of ethical appeals – particularly based on maintaining resources for future generations – is only effective when an underlying environmental ethos is present.

4) **Create a “Crisis” (or capitalize on an existing one):** This study demonstrates that putting environmental and interrelated social and economic issues onto the agenda of decision makers is a difficult yet crucial task for advocates. To combat this problem, advocates need to create situations (i.e., “crises”) that decision makers must respond to, thereby raising sustainability to at least a minor priority. For example, activists at the University of Michigan spoke at a Regents meeting, which created a major reaction from the administration. These crises can also be caused by external circumstances, such as
factory dairy farm construction near YU. A crisis can be as simple as requesting a meeting or as elaborate as a demonstration. The point is that sustainability advocates require a method to move sustainability onto the priority list of institutional leaders and other stakeholders. This research shows that sustainability is not a priority otherwise.

5) **Institutionalize Organizational Changes**: Interest and commitment to sustainability tend to waver over time, and coordination tends to be a major problem, as demonstrated quantitatively and qualitatively through this research. Therefore, sustainability advocates need to create organizational changes that become integral to the campus, such as creating a sustainability coordinator position, oversight committee, and a policy/mission statement, all of which correlate with increased chances of sustainable outcomes. When changes are institutionalized, a college or university’s cautious tendencies turn advantageous since the new processes are difficult to dislodge. In this way, consideration of sustainability within and across research, teaching, operations and service becomes part of the institutional decision making process.

6) **Use the Concept of “Sustainability” Carefully**: This study reveals that sustainability is controversial in theory and practice. Many stakeholders – particularly institutional leaders – are wary of committing to as broad and far-reaching a goal as sustainability, as all the case studies demonstrate. Sustainability is perceived by many as a threat to “business as usual” as well as a commitment to a long-term, resource-consuming effort. However, in part due to these characteristics of the term and concept, sustainability has the potential to be a powerful orienting and motivating tool. Therefore, sustainability advocates must be clear about the meaning of sustainability for their campuses. Advocates must be relatively united in their commitment to the concept of sustainability because dissension and misinterpretation leads to confusion and mistrust about sustainability on the part of potential supporters and opponents. Thus, using sustainability as a guiding concept is a wise strategy only when advocates agree upon meaning and intentions.
Limitations

The most basic limitation of this study is that the sample studied by the survey and comparative case study – institutions that signed the Talloires Declaration – is not a random sample of all U.S. colleges and universities. As discussed in Chapter III, Talloires Declaration signatories tend to be larger, public universities located in the Eastern U.S. The reasons for this geographic and demographic bias vary, but revolve around the fact that University Leaders for a Sustainable Future – the nonprofit organization which encourages college and university Presidents to sign the Talloires Declaration – is located in Washington, DC, and has concentrated its efforts on institutions in the nearby regions. In fact, public institutions in Virginia are over-represented in the sample because the President of the University of Virginia encouraged state colleges and universities to sign Talloires in the early 1990’s. In addition to this survey sample bias, all three institutions analyzed as case studies are public institutions. If decision making by private institutions is categorically different from decision making by public institutions, this bias could significantly affect results.

As explained in Chapter III, I made this sampling choice to ensure that institutions with significant environmental initiatives as well as those without major efforts are included in the sample. Talloires Declaration signatories turn out to be diverse in terms of their level of environmental commitment, although are likely to be more environmentally-active than “typical” campuses. Therefore, this sampling choice appears to meet the intended goal of boosting the number of “environmental” campuses while retaining a diversity of opinions and actions. A random sample would not have included enough institutions with environmental efforts to study organizational change processes. However, the ability to generalize this study to all colleges and universities in the U.S. (i.e., external validity) is limited by the nonrandom sample and the inclusion of the
University of Michigan – which is not a Talloires Declaration signatory, but was analyzed because of the unique opportunity for in-depth analysis.

The sampling and responses of individuals within each institution represent another potential limitation. The first individual sampling problem is “social desirability bias”, which refers to respondents attempting to provide answers to survey and interview questions that make themselves and their institutions appear to be socially responsible. This problem is inherent in research on environmental and interrelated social issues when the “right” answer appears to be the one which is most environmentally and socially “friendly”. The effects of social desirability are mitigated (but not eliminated) by the individual and institutional confidentiality assured in the survey and comparative case study. At Michigan, this problem is mitigated by the fact that the conversations and documents were not typically prepared for research purposes. The second individual sampling problem is “undercoverage” (Schwarz et al. 1998), meaning that not all people in the sampling frame participated in the study. Similarly, “nonresponse bias” (Groves 1989) – the inability to determine which potential respondents or interviewees declined to respond – causes internal validity problems. Simply put, it is not clear whether this research reached all individuals at each college or university who have a valuable and unique perspective on sustainability initiatives. In general, the individuals who participated are more likely to be stakeholders who are involved in sustainability initiatives. Therefore, the data should be interpreted with caution because they may not include the opinions of influential stakeholders or individuals with unique perspectives.

Another potential limitation of this study is its broad reach and mission. Identifying organizational factors in an area of study with little previous empirical research is a complicated task. I opted to sacrifice depth of analysis for breadth of coverage in many cases. Therefore, this study includes many assumptions and propositions that are based on a limited quantity of data and newly developed analytical tools. This limitation is partially mitigated by the fact that the results in this study are
presented as a baseline for further inquiry as opposed to a highly developed model and theoretical framework. Nevertheless, results should be interpreted with caution because of the large number of variables explored within a relatively constrained research design and timeframe.

The final potential limitation is the co-mingling of an activist and scholarly agenda in the research. As discussed in Chapter I, a major personal proposition underlying this research is that colleges and universities should be on the forefront of sustainability. A major goal of this study is to assist colleges and universities in creating the organizational changes necessary to meet this challenge. This perspective – which derives from my activism and involvement in campus sustainability – may bias the results in unpredictable ways, despite attempts to analytically separate theory building and empirical frameworks from advocacy.

Areas for Future Research

Throughout this dissertation, areas in need of further research are identified. Not surprisingly, these areas are numerous and varied because the field of sustainability in higher education is relatively new and does not have a large academic base. Rather than reemphasize all the specific research needs, this section highlights five major areas for future research:

1) Systems Modeling: This study reveals that organizational change processes involved in moving institutions of higher education toward sustainability are extremely complex. This study combines traditional approaches to determining causal relationships with a systemic perspective on change. However, the data reveal (both quantitatively and qualitatively) that the processes and outcomes relating to sustainability in higher education are highly interrelated. Therefore, a complete systems model is a logical and necessary next step in developing a framework for sustainability decision making in higher education. This model would greatly improve the state of knowledge about how
the various factors, conditions and correlates of campus sustainability relate to each other as well as their relative strength and predictive power. This model would explore the ideal, sufficient and necessary combinations of conditions, strategies and outcomes. In general, systems modeling would allow relationships between sustainability in teaching, research, service and operations to be more fully explored than the research design in this study allowed.

2) **External Conditions**: This dissertation focuses on the conditions within each institution without paying close attention to the influence of external stakeholders and pressures. However, it is conceivable that external stakeholders – such as local communities, nonprofit organizations and governmental organizations – have a major impact on the process and outcome of institutional decisions relating to sustainability. The University of Michigan case study hints at this possibility. Future research on the nature and influence of these external conditions would complement this research, and provide a more complete picture of the factors affecting campus sustainability.

3) **Leadership and Interpersonal Relationships**: This study strongly supports the idea that individual leaders can have major impacts on sustainability in higher education. This study also strongly supports the idea that interpersonal relationships among sustainability advocates and others directly influence environmental and social outcomes. However, this research only begins to explore these complex relationships. A more in-depth, focused study of leadership and interpersonal relationships would lead to a more fully developed model as well as specific organizational change strategies.

4) **Sustainability as a Leverage Tool**: One of the major propositions in this study – that the concept of sustainability can serve as leverage and a motivational tool for change agents – did not produce conclusive results. There is surprisingly little research on the effects of using sustainability to orient advocacy in colleges or universities (or in any other organizations). However, many change agents and advocacy groups are struggling to produce strategies that lead to organizational change, and many of these individuals
and groups are rallying around the banner of sustainability. Since it is unclear whether this approach is wise and how best to use sustainability as an orienting concept, additional research and in-depth analysis are needed.

5) **Strategies to Work around Specific Barriers**: One area of sustainability in higher education in which there is no shortage of case studies is the area of barriers to progress. However, most of these “stories” discuss barriers without directly linking these problems with strategies to successfully maneuver around them. This study quantifies and prioritizes barriers and organizational change strategies, but does not specifically combine problems with solutions. Therefore, the logical and necessary next step is to link specific barriers to strategies to move around these problems.

As stated in Chapter I, the goal of this dissertation is to establish a framework for future analysis of campus sustainability as well as provide advice to potential change agents. The model generated by this research may be applicable to a broad range of campuses and initiatives – beyond Talloires Declaration signatories and the University of Michigan – and represents, to my knowledge, the most comprehensive effort to date of analyzing sustainability in U.S. institutions of higher education. However, this research is the beginning of what is likely to be a long process of rigorously analyzing how, why and what colleges and universities can and should do to move society on the path toward sustainability. The findings from this dissertation begin to bridge the gap between activist calls for campus leadership on sustainability and the inherent institutional conservatism of academia. The ultimate goal of this research is to assist colleges and universities in fulfilling their role as societal leaders by seriously considering the social, environmental and economic impacts of internal and external actions. My belief is that institutions of higher education can and should lead society on a path toward sustainability, and I wrote this dissertation to assist in the scholarly and activist pursuit of this difficult yet potentially rewarding process.
APPENDICES

APPENDIX A: CAMPUS ENVIRONMENTAL SUSTAINABILITY SURVEY

May 30, 2001

NAME
TITLE
ADDRESS

Dear NAME:

The enclosed survey is the first attempt to assist and document U.S. higher education’s leadership in promoting an ecologically sustainable future. We are requesting your participation to ensure accurate and full portrayal of campus environmental goals and actions. This survey is part of a project on “Environmental Sustainability Management in Higher Education” based in the University of Michigan’s School of Natural Resources & Environment in partnership with the Association of University Leaders for a Sustainable Future.

The survey can be completed in 10-20 minutes; no specific knowledge of or interest in environmental issues is required. The reverse side of this cover letter provides definitions of “sustainability” to help guide your survey response. This survey is being sent to multiple decision makers on your campus to ensure inclusion of various leadership perspectives. Strict confidentiality will be maintained for you and your institution. Your survey response will be identified by number only and will not be shared with anyone outside the research team. The results will be reported either in aggregate or without institutional and individual names (or other forms of identification). Of course, your participation is voluntary; you may withdraw your survey at any time, and you may skip over any questions.

All respondents will receive a confidential summary of results within the next year, allowing you to compare your campus’ environmental efforts with other responding institutions. Moreover, the survey allows you to reflect on initiating and improving campus environmental initiatives. Finally, you will help create knowledge about why and how campuses manage environmental issues.

Please return the survey in the enclosed self-addressed, stamped envelope by August 14. Contact Michael Shriberg with any questions, concerns or suggestions. We greatly appreciate your participation.

Sincerely,

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University Leaders for a Sustainable Future
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wynncalder@aol.com
**Sustainability Definitions**

This survey often refers to “sustainability”. While sustainability is used in many ways, the following definitions provide common elements of the concept:

“To meet the needs of the present without compromising the ability of future generations to meet their own needs.”
- The Brundtland Commission (United Nations), 1987

“Living, working and behaving in a way that will sustain the integrity and biodiversity of the local, regional and planetary ecosystems upon which all life depends.”
- Guy Dauncey, “Earthfuture”, 1999

“Sustainability is an ideal end-state. Like democracy, it is a lofty goal whose perfect realization eludes us. For this reason, there will always be competing definitions of sustainability. We know these definitions will always include the well-being of people, nature, our economy, and our social institutions, working together effectively over the long term.”
- Alan AtKisson, “The Compass of Sustainability”, 1998

This survey focuses on “environmental sustainability”, a component of the broader concept. Campus “green” initiatives - such as “pollution prevention”, “conservation”, “ecological education” and “recycling” - comprise important pieces of the larger picture of sustainability. We use the term “sustainability” to indicate comprehensive, holistic initiatives oriented toward eliminating negative and increasing positive present and future ecological impacts.

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* “Sustainability” is equivalent to “environmental sustainability” for the purposes of this survey.
## Campus Environmental Sustainability Survey

1. To what extent do the following statements represent your campus’ sustainability PERFORMANCE: (Please circle your answers)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Neutral</th>
<th>Strongly Agree</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste reduction is practiced and encouraged</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recycling is maximized</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste is composted whenever feasible</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazardous waste production is minimized</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy conservation is maximized</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renewable energy is utilized whenever feasible</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchases of local and organic foods are maximized</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water conservation on campus is maximized</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ecological damage during wastewater treatment is minimized</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>An environmental sustainability procurement policy is in place</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Transportation policies minimize greenhouse gas emissions</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrated pest management is practiced</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ecologically sound building design and renovation are practiced</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ecologically responsible land stewardship is practiced</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In general, operations are oriented toward sustainability</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments** _______________________________________________________________________
__________________________________________________________________________________

### CURRICULUM

| Statement                                                                 | 1 2 3 4 5 9       |         |                |            |
|---------------------------------------------------------------------------|-------------------|---------|                |            |
| Multiple courses on sustainability issues are offered                      | 1 2 3 4 5 9       |         |                |            |
| Sustainability issues are integrated into core courses                     | 1 2 3 4 5 9       |         |                |            |
| Sustainability is a required part of the curriculum                        | 1 2 3 4 5 9       |         |                |            |
| Release time for faculty to learn about sustainability is available        | 1 2 3 4 5 9       |         |                |            |
| Graduates are knowledgeable about environmental issues                     | 1 2 3 4 5 9       |         |                |            |
| Graduates are politically/socially active on environmental issues          | 1 2 3 4 5 9       |         |                |            |

**Comments** _______________________________________________________________________
__________________________________________________________________________________

<table>
<thead>
<tr>
<th>A major(s) in environmental issues is offered</th>
<th>YES</th>
<th>NO</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>A minor(s) in environmental issues is offered</td>
<td>YES</td>
<td>NO</td>
<td>Don’t Know</td>
</tr>
<tr>
<td>A concentration(s) in environmental issues is offered</td>
<td>YES</td>
<td>NO</td>
<td>Don’t Know</td>
</tr>
</tbody>
</table>

**Comments** _______________________________________________________________________
__________________________________________________________________________________

### RESEARCH

| Statement                                                                 | 1 2 3 4 5 9       |         |                |            |
|---------------------------------------------------------------------------|-------------------|---------|                |            |
| Significant level of research directly on sustainability is conducted      | 1 2 3 4 5 9       |         |                |            |
| Significant research funding is allocated to sustainability                | 1 2 3 4 5 9       |         |                |            |
| Student research opportunities in sustainability are offered              | 1 2 3 4 5 9       |         |                |            |
| An institute(s) focusing on researching/teaching sustainability exists     | 1 2 3 4 5 9       |         |                |            |

**Comments** _______________________________________________________________________
__________________________________________________________________________________

### SERVICE

| Statement                                                                 | 1 2 3 4 5 9       |         |                |            |
|---------------------------------------------------------------------------|-------------------|---------|                |            |
| Institutional partnerships to promote sustainability are formed            | 1 2 3 4 5 9       |         |                |            |
| Conferences and/or public forums on sustainability are sponsored           | 1 2 3 4 5 9       |         |                |            |
| Community service opportunities in sustainability are offered              | 1 2 3 4 5 9       |         |                |            |
| Campus groups exist that focus on environmental sustainability             | 1 2 3 4 5 9       |         |                |            |
| Institutional leadership positions on sustainability are taken             | 1 2 3 4 5 9       |         |                |            |

**Comments** _______________________________________________________________________
__________________________________________________________________________________

308
2. To what extent do the following statements represent CAMPUSWIDE ACTIONS:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Neutral</th>
<th>Strongly Agree</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>An environmental sustainability mission statement is in place</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>A comprehensive plan for sustainability is being followed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>An annual environmental sustainability report is produced</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My campus’ board regularly receives reports on sustainability</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Investments are screened for environmental responsibility</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Some administrators have participated in sustainability training</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Some staff have participated in sustainability training</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Some faculty have participated in sustainability training</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Staff evaluations are based in part on sustainability performance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Faculty promotion/tenure reflects sustainability performance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>A committee that deals directly with sustainability exists</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>A coordinating person/office for sustainability exists</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The term “sustainability” is used extensively in documentation on environmental initiatives</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My campus has signed external Declarations on sustainability</td>
<td>YES</td>
<td>NO</td>
<td>Don’t Know</td>
<td></td>
</tr>
</tbody>
</table>

If so, which one(s)?

Comments

______________________________________________________________________________

3. To what extent do the following statements represent campus DECISIONMAKING/LEADERSHIP:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Neutral</th>
<th>Strongly Agree</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>When making decisions, administrators typically emphasize…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic consequences</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Social consequences</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Ecological consequences</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Campus sustainability efforts come from the top</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Campus sustainability efforts come from the bottom</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Sustainability is used as a motivational force by administrators</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Administrators have personal commitments to sustainability</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Internally, my campus is perceived as a sustainability leader</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Externally, my campus is perceived as a sustainability leader</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Comments

______________________________________________________________________________

4. OVERALL, my campus’ environmental efforts consist of …

<table>
<thead>
<tr>
<th>No Initiatives</th>
<th>Many Separate “Greening” Efforts</th>
<th>Comprehensive, Holistic, Long-term Sustainability Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Comments

______________________________________________________________________________

309
5. My college or university pursues environmental initiatives BECAUSE of …

<table>
<thead>
<tr>
<th>Benefits to global and local reputation</th>
<th>Strongly disagree</th>
<th>Neutral</th>
<th>Strongly agree</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory pressures</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Our institution’s ability to initiate and lead societal change</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benefits to worker satisfaction/happiness</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethical and/or moral obligations</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost savings/financial benefits</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benefits to student, staff and/or faculty recruitment</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Our responsibility as a model for individuals and institutions</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategic market positioning within the educational sector</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commitment of the President</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commitment of administrators</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student pressures</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty pressures</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alumni pressures</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donor pressures</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activist group pressures</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government pressures</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor market (i.e., future employers of students) pressures</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments _______________________________________________________________________
________________________________________________________________________________

6. BARRIERS to my college or university’s environmental efforts include…

<table>
<thead>
<tr>
<th>Lack of funding</th>
<th>Strongly disagree</th>
<th>Neutral</th>
<th>Strongly agree</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of time allocated to environmental projects</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of information on how to manage these issues</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of tangible benefits</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of a coordinating or responsible person/entity</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of commitment from governing board</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of commitment from the President</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of commitment from administrators</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of commitment from faculty</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of commitment from staff</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of commitment from students</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher priority of other initiatives</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear of change</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complexity of the issues</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic/administrative departmental structures</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments _______________________________________________________________________

______________________________________________________________________________

310
7. To what extent do the following statements represent your campus’ general CULTURE and/or REPUTATION:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Neutral</th>
<th>Strongly Agree</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservative</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liberal</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bureaucratic/hierarchical</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborative</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethical/moral</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Progressive</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive internal image</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive external image</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments ______________________________________________________________________
_______________________________________________________________________________

8. Generally, my campus’ LEADERS…

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Neutral</th>
<th>Strongly Agree</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Articulate a vision for the future</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide good models to follow</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspire attainment of group goals</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourage new ways of thinking</td>
<td>1 2 3 4 5 9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments ______________________________________________________________________
_______________________________________________________________________________

******************************************************************************

PLEASE USE THE SPACE BELOW TO PROVIDE ANY ADDITIONAL RELEVANT COMMENTS ABOUT YOUR CAMPUS AND ITS SUSTAINABILITY INITIATIVES (e.g., strengths/weaknesses)

(Note: The final page – “Background Information” – follows)

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Background Information
(This information will be kept CONFIDENTIAL, as explained in the cover letter)

Name _____________________ (OPTIONAL: Used ONLY to provide you with a confidential results summary)

E-mail ____________________ (OPTIONAL: Used ONLY to provide you with a confidential results summary)

College or University ________________________________

Years Working at/Associated with Institution ________________________

Are you willing to be contacted to discuss your responses? YES NO (If yes, phone # _____________)

My knowledge level about “sustainability” (in an environmental context) is…
(please circle your answer below)

VERY LOW  LOW  MEDIUM  HIGH  VERY HIGH

Please circle the job title(s) that best fits your position(s):

Administration/Staff  Faculty/Student

President/Chancellor  Director – Environmental Health  President – Faculty Senate
Senior Academic Affairs Officer  Energy Coordinator  Dean/Director – Envir. Program
Senior Business Officer  Environmental Coordinator  President – Student Government
Senior Operational Officer  Recycling Coordinator  President – Student Envir. Group
Senior Student Affairs Officer  Other _____________________  Other____________________________

Please circle the description which best describes how the questions on this survey were answered:

BY ONE PERSON  BY ONE PERSON, WITH CONSULTATION  BY MULTIPLE PEOPLE

If the survey was answered by more than one person, please list the job titles of the main respondents:

______________________________________________________________________________________

______________________________________________________________________________________

************************************************************************************

Thank you very much for your participation in this important research. Please contact us with comments, questions, concerns, etc. Additional comments are welcome on the reverse side of this page or as an attachment.

PLEASE RETURN THIS SURVEY IN THE SELF-ADDRESSED, STAMPED ENVELOPE PROVIDED (TO THE FIRST ADDRESS ON THE COVER LETTER)
NAME
TITLE
ADDRESS

Dear NAME:

On May 30, a brief survey was sent to you about your campus’ environmental sustainability management from the University of Michigan’s School of Natural Resources & Environment and the Association of University Leaders for a Sustainable Future. We would greatly appreciate your participation and value your perspective in this first attempt to assist and document U.S. higher education’s leadership in promoting an ecologically sustainable future.

If you have already sent your survey back to us, we greatly appreciate your time and effort. In the event that you did not receive our initial mailing, require another copy of the survey and cover letter (via e-mail or U.S. mail), or have questions or comments, please contact Michael Shriberg. We look forward to receiving your survey. Thank you very much.

Sincerely,

Michael Shriberg  
Doctoral Candidate  
University of Michigan  
Natural Resources & Environment  
Dana Building, 430 E. University  
734-763-8155  
mshriber@umich.edu

Thomas Princen, Ph.D.  
Associate Professor  
University of Michigan  
Natural Resources & Environment  
734-764-1320  
tprincen@umich.edu

Wynn Calder  
Associate Director  
University Leaders for a Sustainable Future  
202-778-6114  
wynncalder@aol.com
Appendix A (continued): Survey Follow-up E-mail #2

July 6, 2001

NAME
TITLE
ADDRESS

Dear NAME:

You should have received a survey about your campus’ environmental sustainability management from the University of Michigan’s School of Natural Resources & Environment and the Association of University Leaders for a Sustainable Future sent on May 30. We would like to follow-up with you again to make sure that you received the survey and to let you know that we are still very interested in your response, even though the original return date of June 25 has passed.

We also wanted to stress that we sent this opinion-based survey to multiple decision makers on (your college/university)’s campus in the hopes that each person would fill it out from their own unique perspective. Therefore, we would prefer that you fill out the survey yourself, and we would like to know if you have forwarded your survey to another individual to fill it out on your behalf.

Again, we would greatly appreciate your participation and value your perspective in this first attempt to assist and document U.S. higher education’s leadership in promoting an ecologically sustainable future. If you have already sent your survey back to us, thank you for your time and effort. In the event that you did not receive our initial mailing, require another copy of the survey and cover letter (via e-mail or U.S. mail), or have questions or comments, please contact Michael Shriberg. We look forward to receiving your survey. Thank you very much.

Sincerely,

Michael Shriberg, Doctoral Candidate
University of Michigan, Natural Resources & Environment
Dana Building, 430 E. University
734-763-8155
mshriber@umich.edu

Thomas Princen, Ph.D.
Associate Professor
University of Michigan, Natural Resources & Environment
734-764-1320
tprincen@umich.edu

Wynn Calder
Associate Director, University Leaders for a Sustainable Future
202-778-6114
wynncalder@aol.com
APPENDIX B: COMPARATIVE CASE STUDY

Project Summary Provided to Institution X’s Environmental Committee and Interviewees

| Sustainability Leadership in U.S. Institutions of Higher Education: An Assessment of Motivations and Methods |
|__________________________________________________________________________________________|
| Michael Shriberg |
| Doctoral Candidate |
| University of Michigan, School of Natural Resources & Environment |
| 418 Second Street #3 Ann Arbor, MI 48103 |
| mshriber@umich.edu 734-332-1989 |

My doctoral dissertation - in the University of Michigan’s School of Natural Resources and Environment in collaboration with the Association of University Leaders for a Sustainable Future – develops a model of sustainability leadership in higher education. To develop this model, a survey was sent (May 2001) to 10-15 individuals at each U.S. college or university that signed the Talloires Declaration (including Institution X). Responses were received from 56 of the 59 institutions (95%) and 249 out of 687 individuals (36%). The survey results are currently being analyzed. As a follow-up to these surveys and a way to share “best practices”, I am visiting several leading campuses to learn about the process and outcomes of sustainability initiatives. The results from each site visit – XU included – will be kept confidential in terms of the individuals and institutions involved, but will be used to help develop strategies for effective sustainability leadership. The ultimate goal of the site visits and the research project as a whole is to help U.S. institutions of higher education reach their potential as societal leaders in sustainability efforts.

Project Summary Provided to Interviewees at Institution Y

| Environmental Sustainability Leadership in U.S. Institutions of Higher Education: An Assessment of Motivations and Methods |
|__________________________________________________________________________________________|
| Michael Shriberg |
| Doctoral Candidate |
| University of Michigan, School of Natural Resources & Environment |
| 418 Second Street #3 Ann Arbor, MI 48103 |
| mshriber@umich.edu 734-332-1989 |

My doctoral dissertation - in the University of Michigan’s School of Natural Resources and Environment in collaboration with the Association of University Leaders for a Sustainable Future – develops a model of environmental leadership in higher education. To develop this model, a survey was sent (May 2001) to 10-15 individuals at each U.S. college or university that signed the Talloires Declaration (including Institution Y). Responses were received from 56 of the 59 institutions (95%) and 249 out of 687 individuals (36%). The survey results are currently being analyzed. As a follow-up to the survey, I am visiting campuses to learn about the process and outcomes of environmental and other social initiatives. The results from each site visit – Institution Y included – will be kept confidential in terms of the individuals and institutions involved, but will be used to help develop strategies for effective environmental leadership. The ultimate goal of the site visits and the research project as a whole is to help U.S. institutions of higher education reach their potential as societal leaders in sustainability efforts.
Consent Form for Interview  
“Environmental Sustainability Leadership in Higher Education” Project

You have been selected for an interview as part of a project on sustainability leadership in higher education. The purpose of these interviews is to help develop a model of environmental leadership, with the ultimate goal of assisting institutions of higher education reach their potential as leaders in sustainability.

Your identity and your institution’s identity will be kept strictly confidential and referred to only as a code or in general terms. The interview, which may be taped with your permission, should take no more than 45 minutes and will require no follow-up. The tapes will be archived and accessible only to the principal investigators. Your participation is voluntary and you may withdraw at any time. You will not receive any direct benefits from participation, but there are also no foreseeable risks. If any questions make you uncomfortable, please let me know and we will skip them. The results of the project will be available at your request upon completion.

Please contact Michael Shriberg or Dr. Thomas Princen if you have any questions about the research or your rights. To ensure that you understand this consent agreement, please sign both copies. One copy is yours to keep.

Thank you for your time and willingness to participate.

Sincerely,

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I have read this form and consent to participate:

Name:
Signature:
Date:
### Appendix B (continued): General, Semi-Structured Interview Questions

1. Please describe your background and how you got involved in campus environmental efforts.
2. Please describe the environmental initiatives you have been involved in.
3. I have seen momentum for environmental activities on this campus…What or who do you think is driving these efforts? Why do you think individuals participate in campus greening? Or, do environmental issues have strong advocates here?
4. Institution (X or Y) does not have the typical demographic profile of an environmentally-advanced institution…What unique characteristics make (XU or YU) conducive to being a leader on environmental and sustainability initiatives?
5. Are you aware that (XU or YU) has signed the Talloires Declaration? (If yes) Do you believe the signing of the Talloires Declaration influenced campus environmental efforts? What role do you see for the committee that has formed around Talloires?
6. What level of interest in (or support for) environmental issues do you see from faculty? Administrators? Students? Staff? How much interaction/cooperation is there been between faculty and operations (or faculty and students)?
7. When you pitch a new environmental program to your dean (or president or supervisor), how do you do it? What benefits for (XU or YU) do you stress?
8. What do you see as barriers to advancing environmental initiatives at your institution?
9. Are (XU or YU)’s efforts truly institutionalized (i.e., if one or more key leaders leaves, will the efforts continue)?
10. What do you see as the next step for campus environmental efforts here? Or, what do you hope to accomplish in the near future?
11. Putting aside any constraints, looking 10 or more years down the road, what would you like to see different at Institution (X or Y) in terms of environmental activities? Or, if the initiative you are involved with succeeds, how will the campus look, feel or be different in 10 years? What would be distinguishing about Institution (X or Y)? What would you be proud of?
12. What do you think the prospect for success of campus environmental efforts is?
13. Do you consider Institution (X or Y) to be an environmental-leader? Why or why not?
14. When discussing environmental issues in the classroom and on campus, is the term “sustainability” in common usage? Or, the term “sustainability” seems to have bounced in and out of the language of campus environmental efforts here. Has this been intentional? Why do you think sustainability has been a somewhat peripheral concept?
15. Have social issues been considered in conjunction with environmental issues during initiatives at (XU or YU)?
16. How would you describe the leadership at Institution (X or Y)?
17. What comes to mind when people think of (XU or YU)?

NOTE: As stated Chapter III, these questions were tailored to specific interviewees and institutions. I did not ask all the questions to each interviewee.
BIBLIOGRAPHY


Mondragon, J. (2001). E-mail to Mike Shriberg & Amy Lockwood from staff member at Higher Education Publications.

Monteith, J. and R. Sabbatini (1997). The evolving role of sustainability on the new campus of California State University. Greening of the Campus II: The Next Step, Ball State University, Muncie, IN, Ball State University.


