Sustaining Campus Sustainability: Factors Leading to Success of Environmental Sustainability Initiatives in Higher Education

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Abstract

What factors lead to the successful implementation and ongoing success of environmental sustainability programs and policies on college campuses? To find out, one may examine institutions' self-reported successful environmental sustainability initiatives. Data were collected through surveys and interviews with sustainability officers at colleges and universities in North America. Forty-four sustainability officers participated in a 21-question survey. Five officials at five higher education institutions participated in 25-question interviews that lasted between 45 minutes and one hour.

Sustainability officers face a range of obstacles. Most (53.8%) report their budgets are inadequate and their offices understaffed; clerical support, in particular, is lacking. Middle level managers may resist the changes to administration and budget associated with implementing sustainability initiatives. Involving stakeholders in planning processes creates greater willingness to implement changes. While there was no correlation between type of stakeholder group and the amount of support for sustainability initiatives, students tend to provide unconditional support. Finally, involvement from upper level administrators positively correlates with self-reported success.

Sustainability officers must be effective change agents and must have the ability to visualize, verbalize, and set into motion clear, focused action plans. Because changing the status quo often results in resistance, perseverance and maintaining a positive attitude are vital characteristics of successful sustainability officers. Campus sustainability officers and offices act as hubs of communication across campus departments, disciplines, and units. Communication leads to greater collaboration, collaboration leads

to wide, diverse support, and support from all parts of the institution is often necessary for initiatives to success.

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Research Question

"What factors lead to successful implementation and ongoing success of environmental sustainability programs and policies on college campuses?"

Rationale

"Let every individual and institution now think and act as a responsible trustee of Earth, seeking choices in ecology, economics and ethics that will provide a sustainable future, eliminate pollution, poverty and violence, awaken the wonder of life and foster peaceful progress in the human adventure."

— ***John McConnell****, founder of International Earth Day, 1970*

Environmental degradation has come to the forefront of issues facing society. Images of pollution, waste, and global warming are flashed on television screens and billboards everywhere. The United States is one of the most wasteful nations in the world, and it has been remarkably slow to change in comparison to other developed countries. Recently however, U.S. companies, which waste huge amounts of energy and resources, have begun to implement a new wave of "green production" techniques as a result of pressure from consumers. It is interesting then, to consider that institutions of higher education have been slow to get on board with the environmental sustainability movement, since they are hubs of learning and progressive thought. Now colleges and universities are becoming aware of ways in which they affect the environment and are taking proactive steps towards lessening their impact, such as incorporating sustainability courses into the curricula, hiring sustainability officers, improving recycling programs on campus, etc. This research does not address the many ways a university can become sustainable, but rather focuses on the way in which sustainability policies and practices are implemented. Environmental sustainability will thrive when campus cultures change from being consumer-driven and wasteful to being conscientious and mindful of their impact on the environment.

Environmental sustainability policies and/or practices on campus are in their early stages. Many institutions without environmental sustainability offices do not have the infrastructure required to implement these policies and practices. Oftentimes at these institutions, a committee is charged with the difficult task of coordinating and implementing large sustainability projects, which require support from many areas of the institution and take enormous amounts of time, energy and effort. More often than not, these sustainability projects do not come to fruition due to lack of resources.

One way to solve this problem is to learn from the institutions that *do* succeed in their efforts to become environmentally sustainable. What makes some policies and/or practices fail while others succeed? How can the process of creating, garnering support for, and applying environmentally sustainable policies and/or practices be improved? In other words, what factors lead to the implementation and ongoing success of environmental sustainability practices on college campuses?

Literature Review

Introduction

> [I]magine the long-term leverage if Higher Education…conducted the research for and helped to implement sustainability programs on campus and surrounding communities. Graduating students could then bring knowledge, skills and values of sustainability to their future employment, consumption decisions, lifestyle choices, and to the improvement of communities in which they live. (Second Nature, Education for Sustainability, 2005)

The phrase "environmental sustainability" has only recently entered into everyday language in United States. It is important to begin by examining the field of environmental sustainability in general, including its origin, definition(s), and current state. Information from various United States Government agencies, national and popular media sources and non-profit organizations is used to achieve a common understanding of both the past and present state of environmental sustainability.

Following review of the history and current state of environmental sustainability in the United States, this literature review provides a look at the intersection of environmental sustainability and higher education in the United States. As campus environmental sustainability becomes more popular, it will no doubt become professionalized, leading to a discussion of the future path of sustainability on campus.

Several obstacles impede the campus environmental sustainability movement, including lack of funding, low stakeholder interest, and the fact that higher education institutions are traditionally slow to adopt change. On the other hand, several key factors motivate higher education institutions to become environmentally sustainable—faculty members who are experts in the field, sustainability research performed on campus,

students who demand accountability, positive public relations, cost savings, and sustainability's media popularity.

Because human effects on the environment are increasing and because of growing concerns about the state of the environment, this examination of the campus environmental sustainability movement comes at a unique time. Without the benefit of many years to critically examine the movement, it is important to glean the essential factors that lead to successes and failures so that colleges and universities can quickly learn how to successfully institutionalize environmental sustainability and, more importantly, sustain the global environment.

Environmental Sustainability in the United States

History & Definition

In 1987 the United Nations (U.N.) World Commission on Environment and Development issued the Brundtland Report, also known as "Our Common Future," in response to the global environment crisis. The report defined sustainable development as that "which implies meeting the needs of the present without compromising the ability of future generations to meet their own needs" (Report of the World Commission on Environment and Development, 1987, para. 2). This definition of sustainability is the most widely accepted and is used here as a basis for understanding the modern concept of environmental sustainability.

In *Introduction to Sustainability: Road to a better future,* Nolberto Munier notes that there are three concepts to the Brundtland Report's definition of sustainability: development, present, and future. According to Munier, sustainability means advancement in every area, including economic growth, social progress and

environmental protection (2005, p. 10). It is impossible to accurately predict future needs; however, we know that some current and common objectives will still be applicable in the long-term, including "everyone's right to shelter, education and health care, the enjoyment of equal opportunities and respect for all human beings, regardless of religion, skin color or nationality, the protection of the environment, the right to work and earn a decent income, the right to live in a clean environment with access to basic infrastructure, the right to participate in the management of one's city, etc." (Munier, 2005, p. 12).

Five years after the Brundtland Report was issued, the U.N. issued Agenda 21, a plan of action for organizations of the U.N. System, national and global governments, and any major groups in which humans impact on the environment (U.N. Division for Sustainable Development, 2004, para. 1). Agenda 21 opens with the following:

> Humanity stands at a defining moment in history. We are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well-being. However, integration of environment and development concerns and greater attention to them will lead to the fulfillment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future. No nation can achieve this on its own; but together we can - in a global partnership for sustainable development. (Agenda 21: Preamble, 1992, para. 1)

Around the same time that Agenda 21 was issued, the U.N. convened a Conference on Environment and Development and created the Commission on Sustainable Development to review progress at all levels in the implementation of

recommendations and commitments and to promote dialogue and build partnerships for sustainable development (Mandate of the Commission on Sustainable Development, 1992, para. 1-3).

The Rio Declaration on Environment, also issued in 1992 by the U.N., consists of twenty-seven principles related to sustainable development, including the following Seventh Principle:

> States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command. (Rio Declaration on Environment and Development, 1992, Principle 7)

Later, in 1997, the U.N. Framework Convention on Climate Change (UNFCCC) issued the Kyoto Protocol, a document that commits the U.N. member countries to adopt various policies aimed at reducing global green house gas emissions. In 2001, the rules for implementing the Kyoto Protocol's guidelines we published in what is called the 'Marrakesh Accords' (Kyoto Protocol, 2001, para. 2). The United States has not adopted the standards set forth by the Kyoto Protocol, both the Clinton and Bush Jr. administrations rejecting them as too costly for the U.S. economy (Environmental Literacy Council, 2005, para. 10). In 2001, President George W. Bush said that the Kyoto Protocol "does not provide the long-term solution the world seeks to the problem of global warming," and that the "goals of the Kyoto Protocol were established not by

science, but by political negotiation, and are therefore arbitrary and ineffective in nature" (US Embassy, 2008, para. 2). Since that time, United States government policy has made little progress toward achieving the global standards set forth by the U.N.

The Sustainability Revolution

Clearly, the idea of environmental sustainability has become increasingly relevant despite the U.S. Presidents' reservations. For cultural, economic, and political reasons, U.S. society has a growing interest in environmental sustainability. Government, industry, private, and popular media sources reveal these motivations.

For example, the U.S. Environmental Protection Agency (EPA) maintains a website dedicated to sustainability. According to their website, EPA programs and policy tools assist governments, communities, businesses and individuals to make sustainable choices and to effectively manage resources (U.S. EPA, 2007, para. 2). Sustainable initiatives are presented for the built environment, water, ecosystems and agriculture, energy and the environment, and materials and toxic substances. For each category, the EPA summarizes available research and assessment tools. However, unlike the U.N.'s Kyoto Protocol, the EPA does not mandate change but rather offers voluntary, incentive-based, collaborative programs. The U.S. has made relatively little progress in comparison to other developed countries around the world (Environmental Literacy Council, 2008).

Reuters reported in June 2007 that "U.S. firms have been slow to join a U.N. initiative on social and environmental responsibility in business because of perceptions it has no teeth" (Parsons, 2007, para. 1). In other words, because there is no enforcement strategy beyond outside scrutiny and the requirement for participants to report their progress annually, U.S. businesses have little reason to do so (Parsons, 2007, para. 5).

Many U.S. businesses are, however, garnering public support for taking proactive steps towards reducing their impact on the environment. The World Business Council for Sustainable Development's mission "is to provide business leadership as a catalyst for change toward sustainable development, and to support the business license to operate, innovate and grow in a world increasingly shaped by sustainable development issues" (World Business Council for Sustainable Development, 2008, Mission Statement). Similar in many ways to the U.N. Commission, the Council for Sustainable Development provides a forum for sharing knowledge, such as new environmentally sound technologies.

The internet has opened lines of communication among individuals, communities, regions and nations regarding sustainability. The American Public Media maintains a sustainability website, which promotes itself as a forum for the evolution of sustainability in the United States (American Public Radio, 2008). Many organizations concerned with sustainability keep websites to provide easily accessible information to the general public. These include the Association for the Advancement of Sustainability in Higher Education, the Association of University Leaders for a Sustainable Future, Focus the Nation, The Natural Step and the National Council for Science and the Environment. These organizations' websites provide tips on how to become environmentally sustainable, options for donating to earth friendly causes, up-to-date sustainability news, and information sharing platforms.

Many prominent celebrities and political figures endorse sustainability as a top priority. Al Gore's documentary, *An Inconvenient Truth*, brought national attention to the topic of global warming. Indeed, "most of the research on global warming has come from university scientists, and higher education has provided one of the biggest audiences

for Mr. Gore's message on the topic" (Byrne & Monastersky, 2007). Vanity Fair, a popular fashion and culture magazine, published its first ever "Green Issue" in May 2007 in which it covered sustainability issues in articles with titles such as "Sex, Lies and Soybeans," "Eco-Justice," and "Texas Chainsaw Management" (The Green Issue, 2007).

The multitude of sustainable practices that are being adopted all over the world make up what author Andres Edwards calls the "Sustainability Revolution," (Edwards, 2005). According to Edwards:

> Not since the Industrial Revolution…has such a profound transformation with worldwide impact emerged onto the world stage. Like its industrial counterpart, the Sustainability Revolution is creating a pervasive and permanent shift in consciousness and worldview affecting all facets of society…The Sustainability Revolution draws its significance and global impact from a wide spectrum of interests with common fundamental values. (2005, p. 2)

Edwards has categorized the core of modern sustainability into three parts: ecology/environment, economy/employment, and equity/equality (2005, p. 22). Regarding education, Edwards writes that the three parts:

> …are made even more powerful by an active commitment to public education. Education is the catalyst for helping everyone understand the dynamic nature of [sustainability]. Through education we gain knowledge with which to overcome the cognitive and normative--and hence emotional—obstacles to understanding our global dilemma. Through education, sustainability can become firmly established within the existing value structure of societies while simultaneously helping that value structure evolve toward a more viable long-term approach to systemic global problems. (2005, p. 23)

Education, then, has the potential to be a central medium for change in our society.

Sustainability in Higher Education

As Edwards (2005) notes, education is vital to successfully establishing society's understanding and acceptance of sustainability. The number of individuals seeking higher education in the United States has increased dramatically within recent years; likewise, the role of higher education institutions in defining, promoting, and advancing environmental sustainability will also increase dramatically (UC Berkeley News, 2000). The campus sustainability movement may also serve as an important catalyst for science education.

Campus Sustainability

There are countless ways for colleges and universities to become more environmentally sustainable. Types of sustainability initiatives vary from campus to campus as much as the initiatives themselves. Campus sustainability initiatives vary in size and in level and type of stakeholder involvement. Campuses have undertaken a broad range of initiatives, both student and administration led.

Student led programs often aim to decrease the amount of waste produced by the university community. Programs typically include those that aim to create more efficient and user-friendly recycling options on campus, competitions to decrease residential living areas' energy use, and programs designed to reduce food waste in the cafeterias, among others.

Sustainability initiatives on the administration's part vary as much if not more than the student led initiatives. For example, administrators can implement policy changes that aim to reduce campus fuel emissions, buy materials and products from eco-

friendly suppliers, build energy efficient buildings, create incentives for car poolers, and much more. What follows is an examination of the way campuses' enact change, rather than the type of change they enact.

Institutional Change: Obstacles and Solutions

In addition to teaching future world leaders, institutions of higher learning strive to produce globally conscious individuals**.** Sustainability is an issue that is certainly important in this time of rapid population growth and urbanization, consumerism, and climate change. In *Sustainability on Campus: Stories and strategies for change*, Peggy Barlett and Geoffrey Chase note that higher education is largely resistant to change due to its conservatism and traditionalism (2004, pp. 9-10). C.A. Bowers agrees. In her book, *The Culture of Denial: Why the Environmental Movement Needs a Strategy for Reforming Universities and Public Schools* (1996), Bowers provides insightful discourse on the fundamental reasons why higher education has lagged in their efforts to raise awareness of the environmental sustainability issue:

> A university education, particularly the higher levels of graduate study, provides students with the symbolic ability necessary for developing new economic and technological expressions of modernity. Increasingly, their knowledge is used to identify niches in the fabric of cultural life that have not yet been brought into the market economy, and to create the products that will meet the needs artificially created by the media…[T]he forms of knowledge learned in universities…serve as the basis of an experimentally oriented culture that ignores the ecological imperative of living in a balanced and interdependent relationship with the environment. (p. 38)

In 1992, David Eagan wrote in *The Campus and Environmental Responsibility:* "it is

curious that in a place where inquiry is so highly prized, the environmental impact of the campus has gone virtually unquestioned." While this was written many years ago, higher education has only recently begun to focus on the disastrous effects that living in a consumer driven society can have. The campus sustainability movement exposes our tendency to create products that meet artificial needs without seriously examining their drain on the planet's resources.

Michael M'Gonigle and Justine Starke, authors of *Planet U: Sustaining the world, reinventing the university*, note:

> …[T]his need for careful constituency-building within the bureaucracy demands caution in cooperating with the strongest agents of external change—students, critics, activists—whose idealistic demands from the outside can unsettle tentative support and retard the slow progress made on the inside. The result is an inherent incrementalism that acts as a constant brake on the potential for entrepreneurial initiative. (2006, p. 155)

M'Gonigle and Starke touch on the dichotomy between colleges and universities as conventional institutions, resistant to change, yet firmly grounded in their goals of provoking new thought.

Authors Peggy Barlett and Geoffrey Chase discuss how sustainability can be applied to campus environments in their work, *Sustainability on Campus: Stories and Strategies for Change* (2004). Individuals and institutions examined in *Sustainability on Campus* manage to "step beyond the conventions of academic discourse to…midwife a more environmentally responsible future" (Barlett & Chase, 2004, p. 5). As one administrator noted in *Sustainability on Campus*, each organization has its own change model and the best way to change things is through persistence, not insistence (Uhl,

2004, p. 37). The leaders of the sustainability movement on this campus thought to involve students and university administrators every step of the way, which in turn created a sense of unity and collaboration, not condemnation. Movement leaders were gentle in their criticisms of the university, realizing that positive attitudes and excitement about the idea of change is needed in order to gain greater involvement and support. As a result, Penn State enacted new policies, adopting sustainability as a system-wide goal. As the administrator responsible for sparking the sustainability movement on Penn State's campus said, "[y]ou know you are making progress in a social change movement when the target of your efforts beings to assume ownership of the very goals and ideals you have been endeavoring to promote" (Uhl, 2004, p. 47).

Creating a sustainable campus requires interdisciplinary collaboration, which is difficult to achieve in a system that has historically promoted narrowed and focused teaching and learning. Hoffman and Bazerman note in *Organizations and the Sustainability Mosaic* that organizational silos prevent different parts of organizations from seeing and implementing strategies that cut across the organization. These silos, often based on political divisions and protective departmental interests, inhibit organizations from identifying potential (economic) benefits of sustainability initiatives (2007, p. 95). As authors Barlett and Chase note in *Sustainability on Campus*, communication between University departments and disciplines is key in examining the broader issues of environmental sustainability and how they directly relate to institutions of higher education.

Communicating between departments and disciplines is as vital to campus environmental sustainability as communicating the same efforts to institutional stakeholders. In his chapter in *Organizations and the Sustainability Mosaic; Crafting*

long-term ecological and societal solutions, "Stakeholder salience, issues management and mapping new ways to sustainability," David Saiia highlights the importance of taking into account an organization's stakeholders when making broad decisions. As Saiia notes, organizations that depend on community support can be especially influenced by the salience, or power, of key stakeholders (2007, p. 133). Institutions of higher education depend largely on community acceptance and support; therefore just as organizations must take into account their stakeholder salience, colleges and universities must do the same. The fact that stakeholders "interact with the organization on multiple levels affecting people, planet and prosperity," further reinforces the need for stakeholder support and buy-in (Saiia, 2007, p. 133).

As Barlett and Chase state, "clarity about what constitutes sustainability for a particular institution will require the shared vision of many points of view" (2004, p. 7). Financial pressures and the fact that every institution must cater to multiple stakeholders often slows or stalls campus sustainability movements. In order for a sustainability proposal to be put into action, stakeholders must be in agreement. This includes students, faculty, administrators, the board of trustees, and in the case of public institutions, the state government. Because they provide the institution's funding, each stakeholder group must view sustainability as a top priority (Barlett & Chase, 2004, p. 14).

In *Ecodemia: Campus environmental stewardship at the turn of the 21st century*, Julian Keniry discusses the importance of stakeholder buy-in. Executive support, possibly the most influential university stakeholder, includes the crucial roles that university presidents, vice presidents, business officers, chancellors, vice-chancellors and trustees play in creating successful sustainability practices on their campuses (Keniry, 1995, p. 189). These roles may include developing university policy, allocating funds,

and incorporating ecological criteria into plans for new buildings and infrastructure. Policy that is adopted by senior level administration and at the departmental level helps "ensure that commitment to ecology survives among competing priorities, limited funds, and perpetual turnover in campus leadership," even if the program itself ends (Keniry, 1995, p. 190). According to Keniry, the most important resource a university can allocate are people, since their passion and commitment often drive the program's success (1995, p. 192). An organizer's ability to connect with others, articulate the seriousness of the issue, and motivate others to participate others in the movement is crucial (Barlett & Chase, 2004, p. 18).

Executive policy decisions, therefore, are important in reflecting or changing the institutional culture. Once sustainability is integrated into the lexicon of higher education, through policy changes and changes in the institutional culture, higher education has the potential to be a leader in the field of environmental sustainability (Carlson, 2006). Communicating institutional sustainability goals will cause environmental responsibility to become "part of the fabric of academic life" (Keniry, 1995, p. 194).

"[T]he university may be the globe's most promising new site for giving shape to [environmental] commitments, that is, for making transformation *real*" (M'Gonigle, M. & Starke, J, 2006, p. xiii). Some would say that it is an inherent responsibility of higher education to foster this knowledge. M'Gonigle and Starke discuss the importance of ties between the university and its community:

> If a place of buildings, lawns, parking lots and gardens is to support reinvigorated ecosystems, those who build and use these constructions must see themselves not just as individuals and consumers and car-drivers, but also as inhabitants of living

> ecosystems and as citizens responsible for the health of the green infrastructure around them…As a recent report suggests…new techniques such as community mapping and participatory planning provide 'valuable learning and community-building for those involved, which may increase the overall capacity to contribute to stewardship planning and practice. In the end, this participatory learning may be a key factor enabling societies to adapt and survive.' (2006, p. 127)

Leadership development and training in the field of campus sustainability is necessary in order for the lessons learned to be applied in the larger world by diverse students and staff not only as participants but as designers and decision-makers as well (Keniry, 1995, 203). Debra Rowe writes in the journal, *Science*, that:

> Right now, sustainability is treated by many as an add-on, as another item on an already full plate. Sustainability needs to be a main focus of our efforts in education. Given the educational and research capacity, the external partnerships, and the position of higher education as an influential voice in society, there is ample opportunity for higher education to help shift societal norms toward a healthier environmental, social, and economic sustainability. (2007, p. 324)

It is often said that colleges and universities are similar to businesses and corporations. Like businesses and corporations, higher education institutions deal with stakeholders (students, alumni, faculty, administrators, etc) with varying levels of prominence (salience), multiple decentralized levels of management, and a product (education) that is consumed by the public. In fact, higher education institutions share many issues that the business world faces in relation to environmental sustainability as well. *Organizations and the Sustainability Mosaic; Crafting long-term ecological and societal solutions,* highlights some of these similarities and provides useful advice when

handling the issues that arise from implementing sustainable practices.

Andrew Hoffman and Max Bazerman's chapter argues that "the change in thinking required of the sustainability agenda will never come to fruition within practical domains unless proper attention is given to the sources of individual and social resistance to such change" (Hoffman & Bazerman, 2007, p. 85). There are several cognitive biases that perpetuate unsustainable practices, including "the mythical fixed pie," or the idea that the relationship between economic competitiveness and environmental protection is either a win-win situation (meaning economic competitiveness improves through sustainability initiatives) or a win-lose situation (meaning environmental protection reduces economic competitiveness) (Hoffman & Bazerman, 2007, pp. 89-90). The fixed pie bias can be seen when higher education institution stakeholders are reluctant to support environmental sustainability practices for fear that the quality of the product, education, will decrease. In reality, both the win-win and win-lose scenarios are possible, so it is important for colleges and universities to accept that implementing sustainable practices and policies on campus will likely produce both positive and negative outcomes, just like other institutional initiatives. When creating successful environmental sustainability initiatives, it is important to be persistent in overcoming unintended negative results.

Another cognitive bias that may inhibit sustainability practices is over-reliance on regulatory standards. In other words, rigid standards may force organizations into focusing on compliance rather than striving towards the overall goals and interests they are intended to promote (Hoffman & Bazerman, 2007, p. 93). Existing standards "perpetuate perceptions about the relationship between economics and sustainability that may be contrary to the goals of both" (Hoffman & Bazerman, 2007, p. 93).

William Scott and Stephen Gough note in *Sustainable Development and Learning* (2003) that learning is consistently seen as an important factor in innovation and development because it is a "prime vector of social change" (Scott & Gough, 2003, p. xiv). Learning environmental sustainability must take place in the classroom, in daily life, in communication with others, and in practice (Scott & Gough, 2003, p. xiv).

Scott and Gough devised a sustainable development learning process model that emphasizes the need for looking at complex problems from many different viewpoints (2003, p. 38). Their model displays three strategies through which learning occurs: information (one-way transmission of knowledge), communication (two-way exchange of knowledge), and mediation (facilitation of knowledge). All types of learning consist of capacity building, which in turn theoretically leads toward sustainable development (Scott & Gough, 2003, p. 38).

Scott and Gough's model does not attempt to qualify the three learning strategies. Rather, the authors note that "the attempt here is to put the historically sub-divided notion of learning back together again in a new way which denies institutions, academic disciplines or policy makers the opportunity to assert territorial claims to authority over particular segments…because we believe it can be useful to ask what complex problems look like from several entirely different viewpoints" (2003, 38). This allows for a balanced approach to learning strategies and processes as they relate to sustainable development.

Teaching and learning sustainability is one of the biggest steps a campus can take towards becoming environmentally sustainable. Teaching often increases stakeholder buy-in, which in turn allows for funding and other resource allocation to sustainability efforts. As new technology and new innovations are created, institutions are faced with

obstacles that require multidisciplinary analysis, persistence, optimism, quickness, creativity and collaboration.

Evaluating Success of Campus Sustainability

It is clear that many factors contribute to the success (of lack thereof) of environmental sustainability programs on college campuses. However, little research has been done that critically examines best practices when implementing and sustaining campus sustainability initiatives. In *Ecodemia: Campus environmental stewardship at the turn of the 21st century*, Julian Keniry notes twelve "benchmarks of success" when evaluating campus sustainability programs: executive support, policy, resources and incentives, structural framework, curriculum, research, ecological planning and design, sense of place, measurable reduction of cost and waste, public relations and documentation, financial accountability and leadership development and training (1995, pp. 187-204). Several of these topics warrant further investigation because they are tangible, cost saving, and ingrained into an institution's culture.

Executive support and therefore policy commitment are important factors in determining the success of an institution's sustainability efforts. The amount of green building design also indicates an institution's commitment to environmental sustainability. Ecological planning and design refers to the design of buildings and campuses that includes provisions such as renewable energy, energy and water efficiency, recycled-content building materials, native landscaping, bicycle parking options, and recycling (Keniry, 1995, p. 196). The U.S. Green Building Council offers a nationally recognized certification system that identifies integrative design practices. The Leadership in Energy and Environmental Design (LEED) Green Building Rating System allows higher education institutions to reduce their impact on the environment and to be

lauded internationally for their efforts (U.S. Green Building Design Council, 2008).

Public relations and documentation is important in order to publicize results of institutional sustainability efforts. Colleges and universities nationwide are realizing the public relations opportunities of implementing sustainable practices on their campuses. Nonprofit organizations serve as forums to gather and disseminate information about campus sustainability, like the Association for the Advancement of Sustainability in Higher Education, which publishes a news bulletin that highlights campus sustainability initiatives at colleges and universities across the United States (AASHE, 2008). The Sustainable Endowment Institute publishes the "College Sustainability Report Card" annually, which provides a look at what steps U.S. colleges and universities are taking to become more sustainable (Sustainable Endowment Institute, 2008). One area in which the Sustainable Endowment Institute grades colleges and universities is their endowment transparency. According to the 2008 Report Card, "[a]ccess to endowment information is needed within a college community to foster constructive dialogue about opportunities for clean energy investment, as well as shareholder voting priorities" (2008, p. 22). The need for financial accountability in colleges and universities is echoed by Julian Keniry, who notes that many colleges and universities are recognizing the need for broad investment policies and are shifting their purchasing and/or spending practices to include environmentally sensitive contract specifications (1995, p. 202). Debra Rowe highlights the fact that sustainable endowments have the potential to affect the larger business and production market outside of higher education, saying that institutional purchasing power can help shift environmentally responsible products to becoming market standard (2007, p. 323).

In addition to public relations opportunities, higher education institutions are now

acknowledging the cost savings that often result from environmental sustainability practices and policies. While qualitative benefits are oftentimes the most easily measured, the quantitative benefits must be measured in order to gain support from administration, especially with regard to cost savings. As the president of the National Wildlife Federation, Jay Hair, noted, "[t]oday, many campuses are demonstrating the compatibility of fiscally sound institutional management with pollution prevention and the protection of biological diversity" (*Ecodemia*, 1995, p. ix). In fact, in a survey conducted on the Boston Consortium, a group of Boson-area institutions, researchers found that the main motivator for colleges and universities to adopt environmentally sound practices was cost savings; interestingly, fear of added costs was also holding colleges and universities back from adopting more such practices (Jaschik, 2005).

Leith Sharp notes in his work "Green Campuses; the Road from Little Victories to Systemic Transformation" that an effective solution to the challenge facing colleges and universities will change every area of campus operations. Sharp notes that this solution will no doubt be a moving target (2002, p. 129). Institutions of higher education must be prepared to make changes in response to the global environmental crisis, but also must be effective at changing.

Conclusion

The phrase "environmental sustainability"—or that "which implies meeting the needs of the present without compromising the needs of the future"—appeared relatively recently in America's mainstream culture (Report of the World Commission on Environment and Development, 1987, para. 2). From its 1987 conception at a United Nations conference, sustainability has become a popular catchphrase, evoking images of

hybrid cars, wind energy turbines, and “green” products in the minds of many Americans. Increasingly, U.S. colleges and universities are recognizing their important role in the effort to slow environmental degradation by integrating environmental sustainability into their core structures. These institutions are incorporating sustainability into their curricula, energy use and waste policies, purchasing agreements, and more. Because colleges and universities are placing more emphasis on environmental issues, more research is needed to determine the best practices for implementing and sustaining sustainability initiatives on college campuses. What factors lead to successful implementation of sustainable practices and policies at higher education institutions? Through surveys and interviews, campus sustainability officers highlighted the importance of adequate resource allocation, upper-level support, institutionalization of sustainability policies, and characteristics of effective change agents to the success of sustainability initiatives on their campus.

Methods

Data Sources

Information was collected through surveys and interviews with sustainability officers (directors, coordinators, committee members, faculty members working on sustainability issues) at colleges and universities in North America. Institutions varied widely in size, were both public and private, and located throughout the United States and Canada. Institutions were divided into two groups (public vs. private) for the interviews in order to assess to what extent an institution's structure correlates to the level of success of sustainability efforts. However, upon data collection, differences between sustainability officers' perceptions of their respective public and private institutions were not great. Therefore, both sets of interviews have been condensed into one. The interview protocol for both groups was the same. The survey was not divided into public vs. private institutions because the questions had little to do with differences between the two. The purpose of the interviews and survey was to highlight the most important factors leading to the relative success or failure of the officers' institution's sustainability efforts. The survey, initially intended to produce quantitative data, ultimately provided rich qualitative data as well. Both the interviews and survey provided qualitative and quantitative data.

Survey

The survey, administered online using SurveyMonkey, consisted of twenty-one questions and required no more than 30 minutes to complete. By clicking on the survey link the participant consented to participate in the study. The Association for the Advancement of Sustainability in Higher Education (AASHE) distributed the survey via email to approximately 115 sustainability officers throughout North America on a

Thursday and sent no reminders afterward. AASHE's email to the sustainability officers contained a link to the survey and a brief description of the research question and the importance of research in the relatively new field of campus sustainability. Forty-four sustainability officers took the survey, a 38% response rate. Survey questions ranged from "Who supports your budget?" to "What everyday challenges do you face when trying to implement a new sustainability program/practice/policy on campus?" The survey was not tested before it was sent out. Question 10 was the only multiple choice question with no "other" category. Questions 1, 2, 3, 7, 8, 14, and 17 were multiple choice questions with a blank "other" category included. Questions 4, 5, 6,9, 11, 12, 13, 15, 16, 18, 19, 20, and 21 were all short answer or fill in the blank questions (see Appendix A). The survey was closed after one month of being sent out.

Interviews with Sustainability Officers

Two sustainability officers at two U.S. private institutions and three sustainability officers at three U.S. public institutions were interviewed. Each interview consisted of twenty-five questions and on average, lasted approximately forty-five minutes to one hour. Interviews were conducted via speakerphone and recorded. Consent was obtained through fax and email. Officers volunteered to be interviewed after they had completed the survey. Interview participants were selected based on their institution's College Sustainability Report Card grade. Due to access and participant availability, two interview participants' institutions scored in the "C" range and three participants' institutions scored in the "B" range. Interview questions ranged from "What is the most important quality that a sustainability officer should possess?" to those that aimed to determine how their campus culture was (or was not) conducive to environmental sustainability (see Appendix B).

Consents Secured & Ethics Considered

The Office for the Protection of Sponsored Research approved the project, along with the survey questions, interview questions, and consent forms. All participants were provided a consent form in which they were informed that there were no physical or psychological risks involved in this study beyond a normal exploration of personal opinions and experiences, that all information would be coded to preserve confidentiality, and that they could choose not to participate and withdraw from participation at any time. The consent form, administered through mail, email, and fax, detailed the project's purpose, their role in the project, any ethical concerns and informed participants that they could withdraw at any time (see Appendix C).

Results

Survey Respondents

The Association for the Advancement of Sustainability in Higher Education (AASHE) distributed the survey to approximately 115 sustainability officers (directors, coordinators, committee chairs, faculty members). Forty-four sustainability officers took the survey, for a response rate of 38.3%. No demographic information about the respondents was reported on the survey. The respondents were asked to describe their respective institutions and positions (see Figure 1). Respondents worked at community colleges (2), liberal arts institutions (11), private research institutions (5), and public research institutions (24). The largest group of respondents were sustainability coordinators (18, 41%), 10 were directors of sustainability offices, and 15 listed themselves as other. The majority of respondents (30, 71.4%) work full time as sustainability officers and 12, 28.6% work part time. On average, respondents who work part time as sustainability officers spend at least 20 hours per week on sustainability issues. Average length of time in their current position was 2.66 years (range .25 year to 11 years). The average number of years their position has existed at their institution was 3.59 years.

Figure 1. General Information about Sustainability Officers, $n = 44$

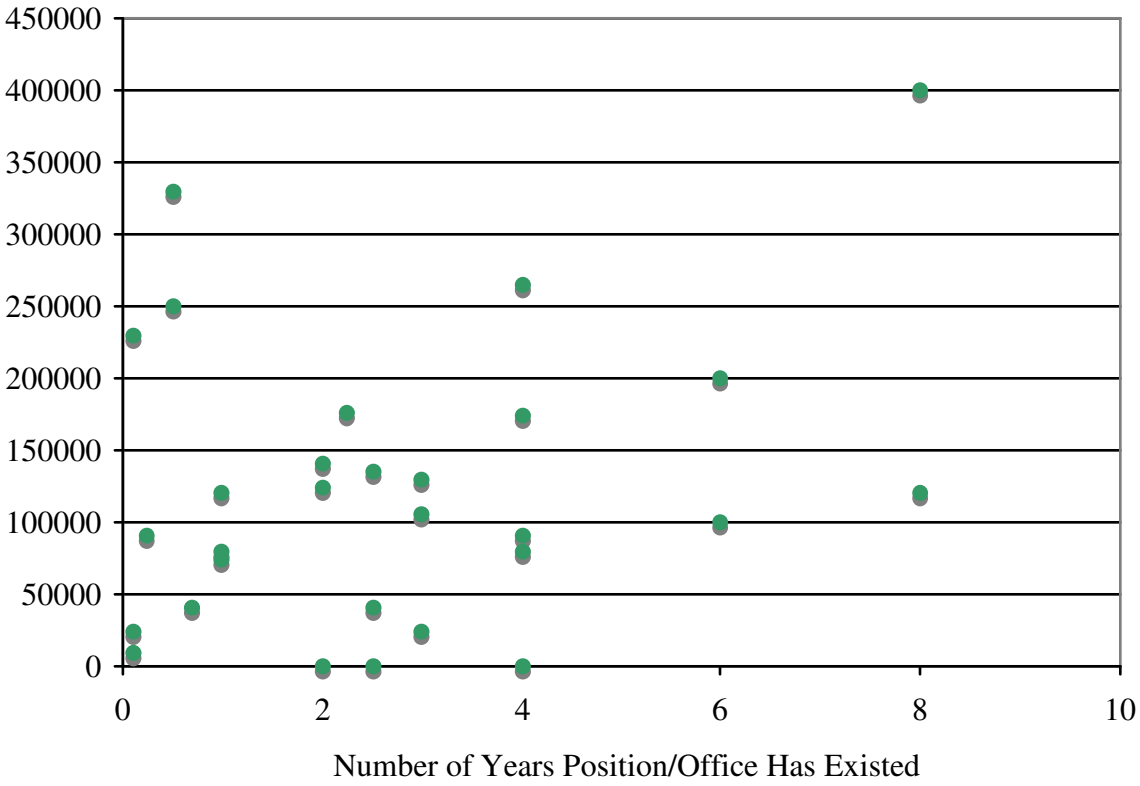
Question	Option	Number of Responses	Percentage of Responses
At what type of institution are you employed?	Public Research	24	57.1%
	Liberal Arts	11	26.2%
	Private Research	5	11.9%
	Community College	2	4.8%
What is your job title?	Sustainability Coordinator	18	41%
	Other	15	35%
	Director, Sustainability Office	10	23%
Do you work as sustainability officer part/full time?	Full time	30	71.4%
	Part time	12	28.6%

Budget

When asked about their budgets, almost all respondents (33, 80.5%) answered that their budgets were supported completely or in part by their university, with the remainder supported in part by grant funds ($n = 41$). The average annual budget was nearly $240,000, yet the median annual budget was $105,000. Annual budgets ranged from $0 to $4 million. Of the 39 respondents to the question "Do you think your budget is adequate?," 53.8% answered "no" and 46.2% answered "yes."

Figure 2 represents the 29 respondents who reported their annual budgets as well as the number of years their position and/or office has existed at their institution. Please note one survey respondent's annual budget of $4 million dollars whose office has been in existence for 38 years. This information was dropped from analysis because it skewed data.

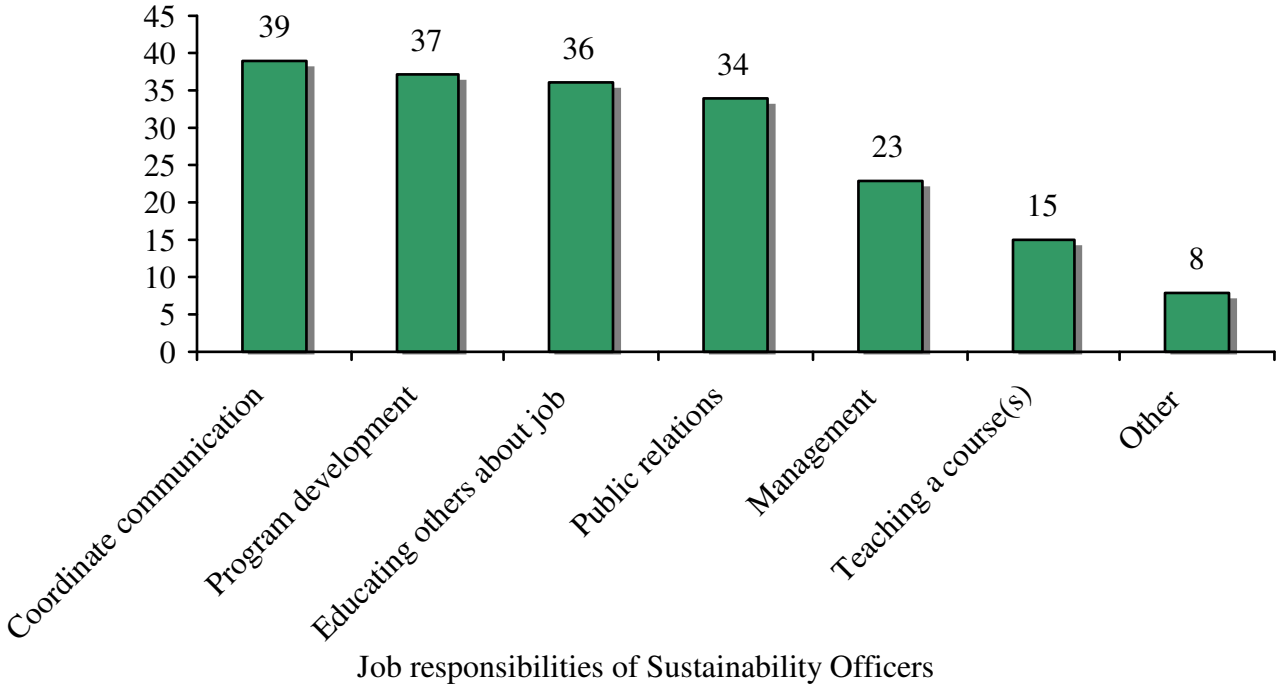
Figure 2. Annual Budget of Sustainability Officers in Relation to Number of Years Sustainability Position/Office Has Existed



Job Responsibilities

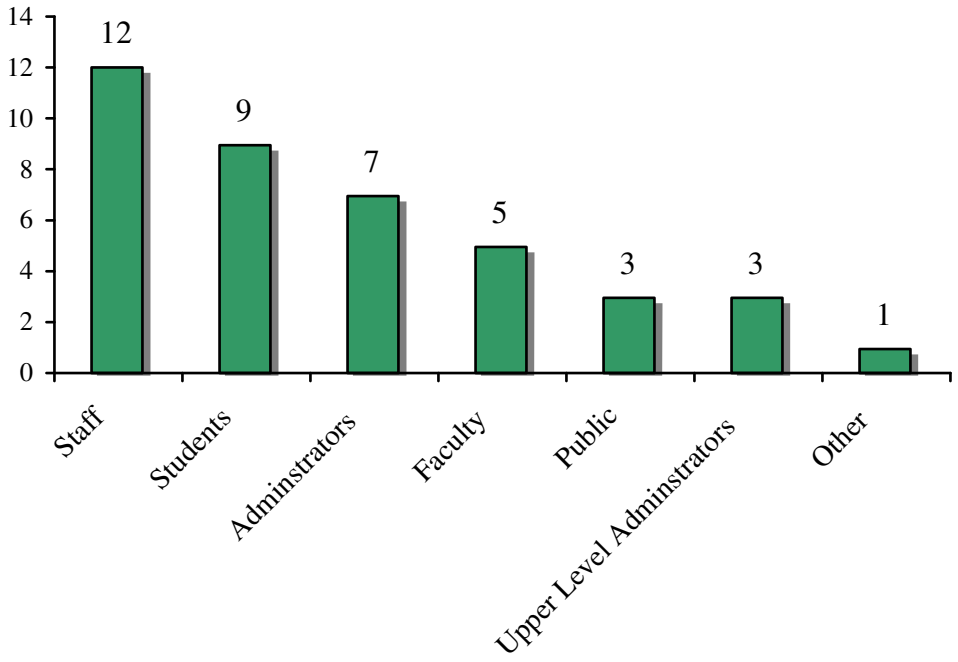
Figure 3 represents main job responsibilities related to respondents' work as sustainability officers, of which they could choose as many as were applicable (n = 41). The majority (39, 95.1%) answered coordinating/facilitating communication between various areas on campus, 37, 90.2% answered program development, 36, 88% answered educating others about what you do, 34, 83% answered public relations, 23, 56.1% answered management, 15, 37% answered teaching a course(s), and 8, 20% listed other.

Figure 3. Job Responsibilities of Sustainability Officers



Of all the institutional stakeholder groups with which respondents interact, respondents reported spending most time interacting with university staff members (average 12 hours/week), students (average 8.5 hours/week), and administrators (average 7 hours/week) (Figure 4).

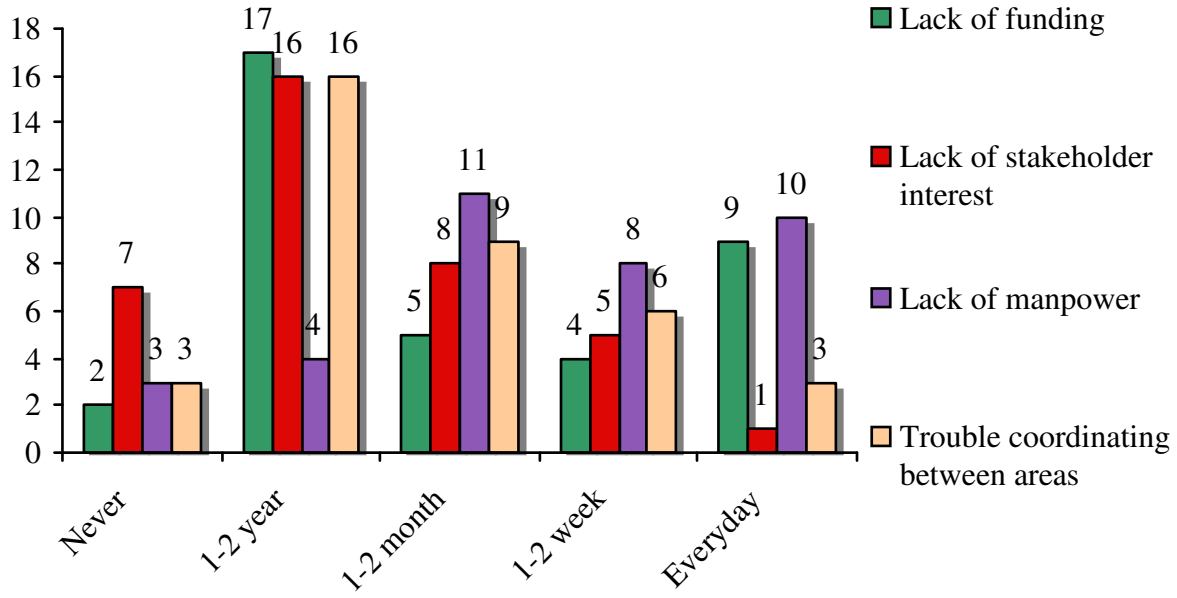
Figure 4. Time Sustainability Officers Spend with Various Stakeholders



Challenges

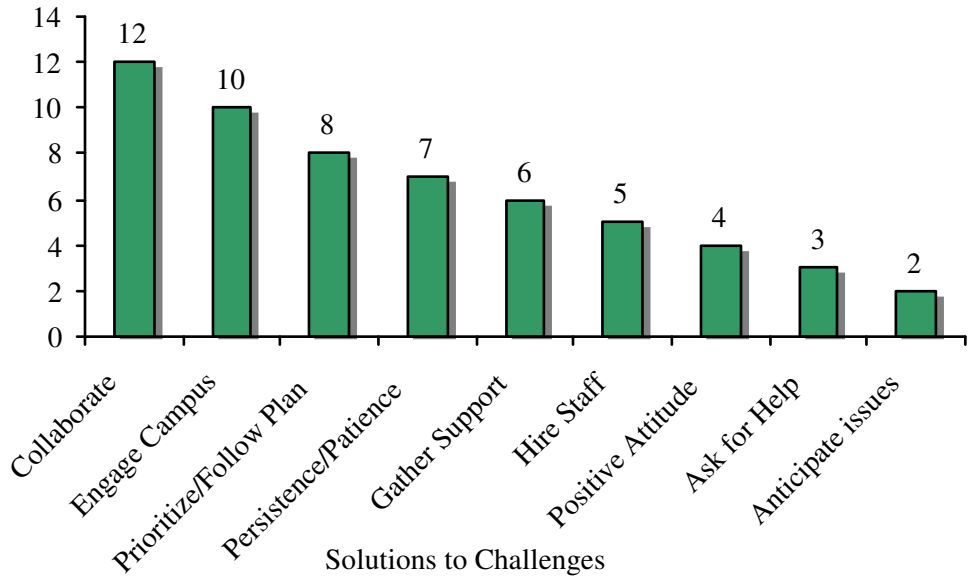
Respondents were asked how often they faced specific challenges related to their work as sustainability officers, including lack of stakeholder interest and lack of funding (Figure 5). For many respondents (17, 44%), lack of funding was a challenge one to two times a year, while 16, 41% respondents found both lack of stakeholder interest and trouble coordinating between areas of campus to be a challenge one to two times a year. Lack of manpower was a challenge for 11, 28.2% officers one or two times a month.

Figure 5. Frequency with which Sustainability Officers Face a Range of Challenges, *n* = 39



When asked about solutions to the aforementioned challenges, respondents answered with a wide range of free text responses (*n* = 31). Figure 6 represents solutions to these challenges, including the most common response of collaborate and involve stakeholders (12, 38.7%). Engage the campus community (10, 32.3%) and prioritize work and follow an action plan (8, 26%) were other common responses.

Figure 6. Sustainability Officers' Solutions to Challenges



Characteristics of Successful Campus Sustainability Officers

Out of 40 respondents, the three most important qualities (provided in multiple-choice form) that respondents felt a sustainability officer must have are: 1) the ability to multitask (29, 73%), 2) knowledge of resources on campus (28, 70%), and 3) strong interpersonal skills (30, 75%). Among other important qualities sustainability officers must possess, 8, 20% respondents listed communication skills, 5, 13% listed project management/planning skills, 4, 10% listed ability to collaborate and 4, 10% listed patience.

Successful Campus Sustainability Initiatives

According to text responses from three sustainability officers, the most successful sustainability programs, policies and/or initiatives "…have clearly defined goals and deadlines with accountability," and "… have been student driven. They bring energy,

enthusiasm, and inspiration. They are not as afraid of the bureaucracy." Additionally, they are "financially feasible, well supported by all stakeholders, appreciated by the wider community, and make a lot of sense to begin with." Figure 7 represents respondents' views on which types of sustainability programs, policies, and/or initiatives are successful:

Figure 7. Successful Sustainability Programs, Policies and/or Initiatives

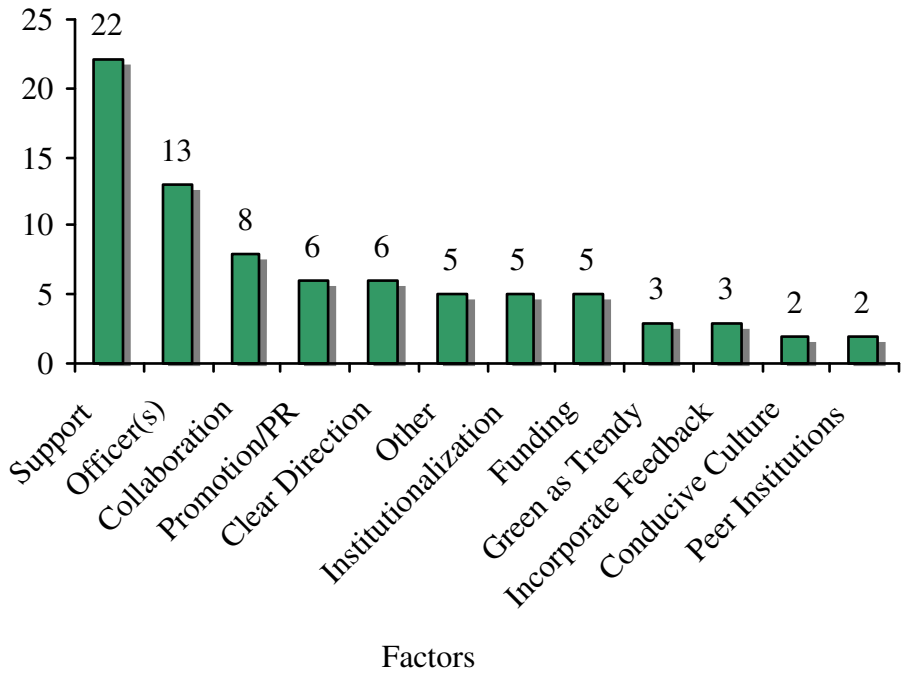
Program, Policy, Initiative	% Of Respondents	Why is it successful?	Quote(s)
Sustainability working group, Stewardship program, Task force, etc.	26	Top-level support, dedicated staff, natural leadership, volunteer work, broad participation	"Catalyzes student and faculty action by providing a consistent forum for discussion"
Energy efficiency/conservation campaigns	23	Cost savings, collaboration between different units	"Programs with a short payback (under 18 months) in utilities are slam dunk"
Local food initiative/Student organic farms	20	Enhanced by greater visibility and support, committed individuals	People have the "ability to see the product of their work"
LEED/Green building Projects	19	Common language and structure, top-level support, operational benefits	"Success breeds success," "Makes economic sense"
Recycling	16	Good public relations, community support	"Good cost benefit ratio between recycling revenue and garbage costs"
Miscellaneous	29		"People are simply much more committed to initiatives when they have ownership and receive praise for their accomplishments"

The question "In your opinion, what factors lead to successful implementation and ongoing success of environmental sustainability practices and policies on college campuses" received a wide range of responses. Of the institutional factors that lead to successful sustainability practices, programs, and/or policies, support outweighed institutionalization, funding, and conducive culture (see Figure 8). Support refers to providing some type of moral, physical, and/or financial aid to the sustainability effort. Of the 23, 68% respondents who indicated support was a key factor in creating successful sustainability initiatives, 64% listed top down support, while only 14% listed student support. Institutionalization refers to the process of incorporating environmental sustainability into the institution's policies, core values or the mission. Funding refers to receiving resources that assist environmental sustainability efforts. Conducive culture refers to a campus' overall attitude toward environmental activism and/or positive change.

Of the many factors related to campus sustainability offices/units that lead to success, 13, 38% respondents noted certain characteristics of effective sustainability officers, including: creativity, competence, inspirational, project management skills, dedication, being resilient/persistent. Feedback refers to listening to and incorporating internal and external criticism into a sustainability office/unit's mission and/or vision. Other factors include clear direction, which refers to having a focused action plan; promotion/PR, which refers to making sure the office/unit is reporting their successes and raising public awareness of the issues they face; peer institutions, which refers to comparing institutional initiatives to self-reported peer institutions; and collaboration, which refers to creating and/or coordinating partnerships between various institutional stakeholder groups and involving them in campus sustainability. 'Green' is trendy refers

to the idea that being environmentally sustainable is popular right now, allowing institutions to capitalize on that popularity. Other includes factors such as promoting the cost savings of sustainability initiatives, capitalizing on the opportunity for students to experience sustainability through 'real world' experience, and using environmental-friendly outside vendors.

Figure 8. Factors that Lead to Implementation and Ongoing Success of Sustainability Practices and Initiatives, *n* = 34



Interview Participants

All five interviewees started their position as sustainability officer when the position was created (Figure 9). Interviewee 1 began their position as Director of Sustainability in 2004, and Interviewee 2 began as Sustainability Manager in 2008. Both interviewees expressed a desire for more staff support in their offices; at the time of the

interview they had only student workers. Interviewee 3 is the Director of an Office of Sustainability whose current job began in 2000. Interviewee 3 is the only full time employee in their office, with three part time student workers. Interviewee 4, a Sustainability Coordinator, has been in the position since it's conception in the beginning of 2008. There are three full time employees in Interviewee 4's office, and one student worker. Interviewee 5 works as a Sustainability Specialist, having been in their position since it's beginning in 2006. There are two full time employees in Interviewee 5's office and several student workers. Interviewee 3's office reports to the Vice President for Finance and Operations. Interviewee 4's office reports to the Vice President for Administrative Affairs but is located within the Department of Environmental Safety. Interviewee 5's office reports directly to the Vice Chancellor of Administration.

Figure 9. General Information about Sustainability Officers

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5
Year position was created	2004	2008	2000	2008	2006
Year interviewees started in their current position	2004	2008	2000	2008	2006
Job Title	Director, Office of Sustainability	Sustainability Manager	Director, Office of Sustainability	Sustainability Coordinator	Sustainability Specialist
Number of student workers	Several	1	3	1	Several
Who office reports to directly	Associate VP for Facilities Engineering & Planning	VP for Operations	Vice President for Finance and Operations	VP for Administrative Affairs	Vice Chancellor of Administration
Number of years of interest in sustainability issues	10	4	25	"As long as I can remember"	10

When asked why they thought their positions were created, all interviewees noted that it was in response to growing needs for a full time sustainability staff member whose job was to implement and shepherd sustainability policies through the institution. Interviewee 4 noted that their institution "recogniz[ed] that this is an opportunity to take the lead and to really be ground-breaking [on] something that is a major issue not only for healthy campuses but the whole world."

Job Description

When asked what an average day in their position was like, there were several overlapping themes, including the large amount of time spent in meetings with various committees, stakeholder groups, etc. Interviewee 1 spends a lot of time teaching classes, in project meetings, public speaking, and mentoring students. Interviewee 2, much newer to the position, spends a large amount of time meeting all "the players" at their institution and distinguishing which projects should be top priority. Both Interviewee 1 and 2 noted the importance of using undergraduate and graduate classes as a means to gather and analyze data about their institutions' emissions, energy use, etc. All of the Interviewees expressed the need for more staff support.

Job Satisfaction

In their answers to "What do you like most and least about your job?" one common theme was the high level of personal fulfillment they found in their work (see Figure 10). Several interviewees touched on the fact that they dislike having to spend so much of their time doing logistical, clerical work. Another theme was the personal satisfaction they felt through being able to be involved in such an interesting and "necessary" field.

Figure 10. Interviewees' Impressions of Their Jobs

	Like	Dislike
Interviewee 1	"Variety" and "the fact that I feel like what I'm doing is worthwhile and will have a positive impact on the world"	"I wish there were more hours in the day…I can't do everything I'd like to do"
Interviewee 2	"Teaching" and "getting a bunch of people together in a room and doing something with it and seeing your actual project coming out of it"	"I…get caught in a lot of trying to figure out everybody's schedules to set up a meeting"
Interviewee 3	"Bringing people together and getting…ideas energized…and helping people get those ideas turned into action"	"The administrative assistant types of activities," including scheduling meetings, budgeting
Interviewee 4	"[S]ociety has to figure out how to be more sustainable and people are looking to colleges and universities for those solutions…I'm honored to be a part of that"	"Knowing that in times of economic hardship, sustainability could be viewed as an unnecessary budget item and be brushed aside"
Interviewee 5	"The variety of activities…and the range of knowledge that you come in contact with…Both the breadth and depth of knowledge that one could acquire…is basically limitless"	"[B]ecause there is so much talent and interest, it takes time…to develop an idea based on consensus…but…when something happens it happens in a big way and it's strong because of it"

When asked about specific challenges that face sustainability officers when trying to implement a new sustainability program or policy on campus, the responses between interviewees varied widely (see Figure 11). Challenges range from simple logistical inconveniences to not knowing what kind of technologies will be created in the future. Two of the three sustainability officers working at public institutions listed institutionalizing sustainability as a main challenge. Another challenge that officers commented on is raising awareness about sustainability on campus.

Figure 11. Challenges Facing Sustainability Officers

	Challenge 1	Example	Challenge 2	Example
Interviewee 1	"Green" knowledge	Lack of "LEED experience amongst…consulting teams"	Unable to predict advances in technology and science	"We don't know what…technologies are going to be available to us 10, 20, years down the line but…we build buildings to last 100 years or more"
Interviewee 2	Lack of clerical support	"I need help…gathering data"	Ensuring efforts continue across campus and are not only the Officer's responsibility	"We're not going to be an advocacy organization for climate change. We're a college. We're staying a college"
Interviewee 3	Bureaucracy	"When there is no support…you have to find a way to do what…needs to be done without having to go through that level of bureaucracy"	Communication/ Transparency	"[We try to be] open…about what we're doing so people can find out about it…and still sign up and get involved"
Interviewee 4	Resistance, Skepticism	"Everyone's willing to commit to sustainability to a level that they feel comfortable, and I think that part of our role is…pushing that comfort level back a bit"	Institutionalization	"When…the economy goes south, and the university has to focus on what's expendable and what's essential… they look to the mission statement"
Interviewee 5	Funding & Resource Allocation	"We never have enough people working on the really important things…because you have to make tradeoffs"	Ownership & sense of accomplishment	"…if…the resources are… stretched very thin, one person never gets the chance to…fully develop something and put a nice bow around it"

Campus Stakeholder Groups

All five interviewees reported a significant amount of support from their institution on issues of sustainability, including from students, administration, staff, faculty, etc. Interviewee 1 said "We've been fortunate that it's been a rather peaceful and positive and constructive relationship between the administration and the students when it comes to environmental issues on campus, not 100%, but much more than you'd think." Interviewees 3, 4, and 5 were careful to note, however, that it is difficult to say which constituency is most supportive; rather, as Interviewee 5 noted, "the most…unconditional support comes from the students," but once a specific plan is developed, or "that's when the staff and administration become more involved and engaged."

However, not all stakeholders are equally supportive. Interviewee 3 pointed out that the administration at their institution is typically least supportive when it comes to issues of resources. "Middle level managers [who] are…responsible for budgets and personnel," Interviewee 4 noted, often provide little support because "sustainability is another thing that needs to be managed."

Measuring Success

The term "success" in terms of campus sustainability initiatives may mean different things according to different sustainability officers. For example, Interviewee 1 believes that their office is successful, yet the office doesn't "have a set of metrics…developed exclusively to measure success." Interviewee 1 believed that the many initiatives that their institution has implemented (including a bio-diesel program, solar decathlons, community gardens, LEED building standards, President's Climate Commitment, and CO2 tracking methods) are successful. Interviewee 3 defined success as "seeing a number of projects carry on with a life of their own," and the

"consistent…level of support that we get without having to fight…That attests to the fact that people think we're doing something useful." Interviewee 4's office is developing a set of assessment metrics based off AASHE's assessment framework called STARS (Sustainability Tracking, Assessment & Rating System).

Characteristics of Successful Sustainability Officers

When asked what is the most important quality that a sustainability officer must possess at the interviewees' institutions in particular, all five interviewees reported some variation of communication as vital to their position, using words like "good facilitator" (Interviewee 3), "diplomacy" (Interviewee 5), and "interpersonal skills" when asking others to "infuse the concept of sustainability into what they do" (Interviewee 4). Interviewee 1 said "Universities are typically [stereotyped] that they are a series of vertical silos. Whereas…positions like mine are very horizontal in nature." Additionally, Interviewee 3 noted that "[sustainability] issues are really more complex than one person can understand…Therefore, even if you have a relatively keen idea of what you want to see happen, you have to be open to having some ideas massaged and shifted and perhaps changed." Interviewee 5 made an interesting point, that "there are many [important qualities], just the way sustainability is many things. The nature of sustainability has to be emulated in the personality of the leader who is preaching it."

Successful Sustainability Initiatives

Interviewee's responses to what factors lead to successful sustainability initiatives on their campuses varied widely, including stakeholder involvement and support, timing, and qualities of effective sustainability offices/units (see Figure 12).

Figure 12. Factors that Lead to Successful Sustainability Programs, Initiatives, and/or Policies

	Factor(s)	Reasoning
	Timing	"Had we tried to push [an initiative] a few years ago…it probably wouldn't have succeeded because we wouldn't have had the right stakeholders comfortable enough with enough experience, wouldn't have been able to point to projects…that are already underway, so it's a process of…bringing people along and knowing when is the right time to be able to get them to make commitments"
	Situation-Dependant	"You can say having the right stakeholders involved, connecting the right people with the right resources, and making it a win for as many people as possible"
Interviewee 2	Support	"…if you're building a building, you need to have the support of the people who are going to be working in the building, you need to have the support of the facilities management people who are building it, and you need to have enough money to make it happen"
	Collaboration & Communication	"…our president once said that this particular issue, unlike any other issue he's seen come through the college, has an opportunity to bring people together from all the different areas"
Interviewee 3	Humility, Passion, Being Inclusive	"Trying to help people see this being connected to something bigger than themselves, whether that for some people is a more spiritual kind of connection or not, allows people to do it, and to make it fun"
Interviewee 4	Institutional Support	"The buy-in from your upper level administration is a huge factor in determining the success and promotion of [sustainability on campus]"
Interviewee 5	Vision, Plan, & Execution	"The only way of making a difference is by doing it…From the action, you have lessons learned, and then you institutionalize the best things and try not to repeat the mistakes"

Discussion

Characteristics of Effective Sustainability Officers

Survey and interview data suggest there are several common characteristics of effective sustainability officers. That sustainability officers must be effective change agents was one main characteristic. Survey respondents and interviewees felt that sustainability officers must have the ability to visualize, verbalize, and set into motion clear and focused action plans. They must be inspirational and passionate about their causes as well as demonstrate leadership skills. Sustainability officers must be able to multi-task and prioritize their work, because they juggle multiple projects and interact with multiple people at once. Because changing the status quo often results in significant amounts of resistance, persistence and maintaining a positive attitude are other vital characteristics of successful sustainability officers. Interestingly, it seemed that officers who were able to make the most out of these aspects found the deepest satisfaction in their work. For example, Interviewee 1 said "I feel like what I'm doing is worthwhile and will have a positive impact on the world." Interviewee 3 likes "bringing people together and getting some ideas energized and then helping people get those ideas turned into action."

As Peggy Barlett and Geoffrey Chase note in *Sustainability on Campus: Stories and Strategies for Change (2004)*, although the structure of higher education institutions tends to promote narrowed and focused teaching and learning, the ability to collaborate and communicate effectively across university departments and academic disciplines is key. The metaphorical silos that divide campuses "are often based on political divisions and protective departmental interests that shield organizations from identifying the potential economic benefits of sustainability initiatives" (Hoffman & Bazerman, 2007, p.

95). Good communication skills—overcoming the challenges posed by these silos—recurred in the data more often than other characteristics of effective sustainability officers, highlighting what an important skill it is in the field of campus sustainability, probably due to the multidisciplinary nature of campus sustainability.

Support

"Support" refers to the act of promoting the interests or cause of something. Data show that when garnering support for environmental sustainability efforts on campuses, raising awareness is vital. One challenge facing sustainability officers is getting word to the campus community about the institution's positive environmental efforts as well as ways for people to get involved with those efforts. Many officers mentioned the importance of "awareness campaigns," or efforts to inform the campus community about the institution's commitment to sustainability. In addition to raising general awareness on campus, which is often directed toward the entire campus or various stakeholder groups, effective sustainability officers focus on acquiring support from individual people. Contrary to the author's previous assumptions, data revealed no correlation between type of stakeholder group and amount of support they give to campus sustainability efforts. Most participants noted that they receive support from individuals in all areas of campus: students, faculty, administrators, etc. Students, however, tend to question the status quo and advocate for positive change more often than faculty and administrators. In this regard, students tend to be the only stakeholder group that provides unconditional support for most sustainability initiatives and, therefore, constitute a reliable, motivated base.

When gathering support from campus stakeholders, many sustainability officers noted that diplomacy, tact, and proper timing (ensuring initiatives have support from the

campus community before proceeding) leads to better (self-reported) results. Michael M'Gonigle and Justine Starke's discussion of "careful constituency-building" in their book *Planet U: Sustaining the World, Reinventing the University* (2006, p. 155), supports this finding. Research participants noted that involving people in planning processes allows for more input, different viewpoints, cohesive collaboration, and greater willingness to implement subsequent changes. One survey respondent illustrated the point that responsibility for initiatives leads to better results, saying "people are simply much more committed to initiatives when they have ownership and receive praise for their accomplishments." Thus, involvement in the planning initiatives increases the likelihood of the project's success because participants feel a sense of responsibility, ownership, and pride over their efforts.

Finally, top-down support (buy-in from upper level administrators) is crucial. In *Ecodemia: Campus Environmental Stewardship at the Turn of the 21st Century,* Julian Keniry (1995, p. 190) discusses how upper level administrators can influence the success of sustainability initiatives and policies by ensuring the campus' sustainability efforts become standard practice. Fourteen (32%) survey respondents and all five interviewees echoed the sentiment that top-down support produces good results.

Cost savings from sustainability initiatives motivate upper level administrators to adopt sustainability initiatives. Oftentimes, the cost of implementing an initiative will pay itself back within a matter of years, depending on the type and breadth of the initiative. One survey respondent called initiatives that pay for themselves in the near term "slam dunks." Whether upper level administrators are motivated by changing realities, public relations, student activism, cost savings, and/or personal values, research

participants noted that involvement from upper level administrators correlates directly with level of success of the sustainability initiative.

Resistance to change oftentimes comes in the form of not wanting to change old habits ("It's always been done this way and it works just fine for me"). Interviewee 4 noted that middle level managers, who are "responsible for budgets and personnel," feel that "sustainability is another thing that needs to be managed…so there is resistance to change, resistance to cost…it's just one more thing that they need to think about." Hoffman and Bazerman touch on the fact that existing standards "perpetuate perceptions about the relationship between economics and sustainability that may be contrary to the goals of both" (Hoffman & Bazerman, 2007, p. 93).

Growing Pains

Because campus sustainability is a relatively new field, many campus sustainability offices are under funded and understaffed. Most sustainability officers who participated in the survey and/or interviews (53.8%) felt their budgets were inadequate. One survey respondent noted that their annual budget "…is sufficient for one low-level employee and a few student workers. My office would be far more effective with a higher level director position, additional student employees, and at least one additional full-time lower level staff position." The lack of funding means that sustainability officers may be limited in ability to hold awareness campaigns, speaker series, energy conservation competitions, and recycling drives.

Campus sustainability offices tend to be understaffed. One complaint of many survey respondents and interviewees was that they spend an enormous amount of time planning meetings, scheduling appointments, collecting and analyzing survey data, etc. Many expressed the need for more clerical support so they could focus their time on

creating and supporting sustainability initiatives. Interviewee 3 noted administrative activities was their least favorite part of their job. Many sustainability offices are ill-equipped to handle the amount of requests and responsibilities they receive because they lack funding and staffing resources. As these offices prove their worth to the campus community over time, one assumes that more funding and staffing may follow.

Ready, Set, Go

Several survey respondents and interviewees noted that successful sustainability initiatives on college campuses have a clear plan, focused direction, and well-executed action. Research participants also noted that the more transparent the initiative, the more the campus community will rally around it. Sustainability officers must possess the ability to prioritize their work, as potential projects spring up all the time. Several interviewees spoke of not being able to take on many projects because of lack of resources including time, staff support, and funding. Sustainability officers who establish effective and transparent goals and action plans, yet are flexible and open to feedback, could enjoy better results.

One Size Doesn't Fit All

In *Sustainability On Campus*, authors Peggy Barlett and Geoffrey Chase (2004) highlight the importance of creating unique methods of success for each individual institution. Ultimately, the success of sustainability initiatives depends on the institution itself. As Interviewee 3 noted while speaking about how to best create and sustain environmental sustainability initiatives on college campuses, "it's got to be something that's owned by the institution with it's own character, takes its own route and its own journey…and it's based on people and circumstances and those are always changing." Interviewees who self-reported successful sustainability initiatives possessed similar

characteristics: their institutions are historically sensitive to environmental and/or social justice issues, benefit from the enthusiasm for sustainability from top-level administrators, faculty and administrators communicate across departments/units rather than in their respective silos, and receive generous (often unconditional) support from the student body.

No differences between interviews with sustainability officers working at public institutions and private institutions were found, except in the level of bureaucracy sustainability officers must work through. Two of the three officers working at public institutions mentioned dealing with "red-tape" issues, like Interviewee 3 (employed at a public institution) who discussed the importance of working with, through, or around the bureaucracy they face at their public institution: "you have to find a way to do what you think needs to be done without having to go through that level of bureaucracy." Because public institutions are funded by a bureaucratic state, sustainability officers must obtain more clearance or approval when creating and implementing sustainability initiatives.

Interviewees working at private institutions did not mention dealing with bureaucracy at their institution. Interviewee 1, employed at a private institution, said "…other folks, particularly when they are in state institutions, tend to run into more bureaucratic challenges and sometimes more funding challenges. I'm fortunate that I'm working in a private institution that has…good financial resources, so that reduces…the source of problems that some of my colleagues run into." Through interview data analysis, no significant distinction was found between self-reported success rates of sustainability initiatives at public versus private institutions, institutions in different geographic locations, institutions of different sizes, and location of sustainability office within the organizational chart (i.e. academic side vs. facilities side).

When faced with the decision to support changes related to their campus, higher education administrators will oftentimes look to their institution's mission statement. Institutional mission statements typically revolve around fostering learning--creating safe and conducive environments for students to learn—and developing responsible citizens through knowledge sharing and experiential opportunities. Successful sustainability officers take advantage of this by advocating the learning and growth opportunities sustainability possesses for all members of the community. Interviewee 5 indicated that participation in sustainability efforts prepares individuals to be responsible citizens in a rapidly changing global society. William Scott and Stephen Gough note in *Sustainable Development and Learning* (2003, p. xiv) that "learning…has been consistently seen…as a key component of innovation and development because it is acknowledged as a prime vector of social change." Multiple research participants noted that hands-on experience measuring one's impact on the environment (e.g. a project that measures their institution's carbon footprint) and learning ways to reduce that impact (e.g. local food or green building campaigns) allows students to see the ways in which society can shift from being consumer driven to being more environmentally driven.

In addition to enhancing students' growth, there are other areas in which campus administrators recognize the attractiveness of campus sustainability. Because "going green" is popular, survey respondents noted that sustainability initiatives could generate positive public relations opportunities for their institutions. Sustainability may become another factor in prospective students' decisions as to which institution they choose to attend. Publications like the Sustainable Endowment Institute's *College Sustainability Report Card*, the Association for the Advancement of Sustainability in Higher Education's (AASHE) *Sustainability Tracking, Rating and Assessment System (STARS),*

and the *U.S. News & World Report's* sustainability category in their "America's Best Colleges" ranking system indicate that the public is gaining interest in and awareness to campus environmental sustainability.

Regardless of the motivating factors behind adopting sustainability initiatives and/or policies, colleges and universities must accept their role as leaders in the environmental sustainability movement, as they may increasingly be looked upon to provide guidance and knowledge in this field. Capitalizing on institutional characteristics that lead to successful sustainability initiatives and developing institutional characteristics that support that goal is crucial. In other words, higher education institutions must take advantage of pre-existing factors which support sustainability and build and improve, deliberately and transparently, areas on campus that will further enable the success of sustainability efforts. Offices dedicated to campus sustainability act as hubs of communication across campus departments, disciplines, and units. In short, communication leads to more effective collaboration, collaboration leads to wide, diverse support, and support and buy-in from all parts of the institution is required for successful initiatives.

Limitations

It is important to note the exploratory nature of this research project. The findings suggest interesting similarities and trends in the field of campus sustainability, yet no comprehensive conclusions can be made from the data. Among the limitations of this research are: the survey's low response rate, the fact that the survey was not validated before being distributed to sustainability officers, and the lack of power calculations. The project's small sample size limits assuming any implications, yet the trends suggested merit more research.

Because the survey respondents and interviewees self-selected to participate, the cohort is inherently biased. Additionally, no metrics were used for measuring the self-perceived "successes" of participants' sustainability initiatives, meaning participants' impressions of success could vary largely.

Conclusion

Data suggests that the field of campus sustainability is largely defined by collaboration and cooperation amongst campus constituents. According to many research participants, interpersonal skills are important in the field of campus sustainability. Additionally, the ability to multi-task and clearly define campus sustainability goals and plans may contribute to the success of sustainability initiatives.

As shown through survey and interview data, support is a leading factor in successful sustainability initiatives on campus. Those in higher levels of an institution's administration possess the power to better their institution's attitude and commitment toward environmental sustainability through moral and financial support, policy changes, and more.

There are many ways that college and university communities can contribute to the success of their institution's sustainability efforts. This research provides an overview of the types of factors that lead to successful sustainability initiatives—information that can be used by any member of the campus community, including sustainability officers, administrators, faculty, staff and students.

Acknowledgements

Throughout this project, the researcher was impressed by research participants' candor and their willingness to help. Interviewees graciously offered valuable information regarding their job experiences and their impressions of the field of campus sustainability as a whole. The Association for the Advancement of Sustainability in Higher Education proved to be an essential resource. Finally, the researcher would like to thank her research coach, research group, as well as her family and friends for their great input and advice.

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Appendix A

Survey Protocol

1. Please choose the answer that best describes your position:
    a. Sustainability Coordinator
    b. Director, Sustainability Office
    c. Chairperson, Sustainability Committee
    d. Other
2. At what type of institution are you employed?
    a. Community college
    b. Public research institution
    c. Private research institution
    d. Liberal arts institution
    e. Other
3. Do you work as a sustainability officer:
    a. Full time?
    b. Part time?
    c. If part time, how many hours per week do you spend working on sustainability issues on your campus?
4. How many years have you been in your current position? (fill in the blank)
5. How many years has your office/unit/department/etc. existed at your institution? (fill in the blank)
6. What is your supervisor's title? (fill in the blank)
7. What are your main job responsibilities? (check all that apply)
    a. Educating others about what you do
    b. Program development
    c. Coordinating/facilitating communication between multiple areas of campus
    d. Public relations
    e. Management
    f. Teaching a course(s)
    g. Other (please specify)
8. Who supports your budget? (check all that apply)
    a. The university
    b. Grant funds
    c. Endowment funds
    d. Other (please specify)
9. What is your office's annual budget? (fill in the blank)
10. Do you feel that your office's annual budget is adequate?
    a. Yes
    b. No
11. Please elaborate on how your budget aids or hinders your office's effectiveness. (fill in the blank)
12. With regard to your position, on average how many hours per week do you interact with: (fill in the blanks)
    a. Students?
    b. Administrators?
    c. Faculty?

    d. Staff?
    e. The public?
    f. Upper level administration?
    g. Other?
13. Is there anyone else that you interact with on a regular basis? If so, who are they and how many hours per week do you interact with them? (fill in the blank)
14. How often do you face the following challenges when trying to implement a new sustainability program/practice/policy on campus: lack of funding, lack of stakeholder (students, faculty, administration, etc) interest and support, lack of manpower, trouble coordinating multiple departments/offices/areas of campus, other (please specify)?
    a. Never
    b. Once or twice a year
    c. Once or twice a month
    d. Once or twice a week
    e. Everyday
15. What solutions have you found to overcoming the challenges mentioned above? (fill in the blank)
16. Which programs or policies have been successful and why? (fill in the blank)
17. What are some qualities that a person in your position must possess to be successful? (Please check the three qualities you consider to be the most important and the three qualities you consider to be the least important)
    a. Energetic
    b. Strong interpersonal skills
    c. Creativity
    d. Knowledge of resources on campus
    e. Determination
    f. Ability to manage multiple tasks
    g. Ability to supervise others and/or assign tasks
    h. Strong interest in campus environmental sustainability
    i. Other (please specify)
18. Are there any other qualities that a person in your position must possess to be successful? (fill in the blank)
19. In your opinion, what factors lead to the successful implementation and ongoing success of environmental sustainability practices and policies on college campuses? (fill in the blank)
20. Is there anything else you would like to add? (fill in the blank)
21. If you are willing to participate in a phone interview with the researcher, please leave your contact information, including your name, email address and phone number, below. (fill in the blank)

Appendix B

Interview Protocol for Sustainability Officers

1. How long have you been in your current position?
2. How long has your institution had an office/center/department for sustainability?
3. How many people work in your office, both full time and part time?
4. Please describe your position and/or department as it relates to your university's organizational chart.
5. Who supports your budget?
6. What is your office's annual budget?
7. Do you feel that this is adequate?
    a. Why or why not?
8. How long has this institution had a Sustainability director/coordinator?
9. Why do you think your position was created?
10. How long have you been interested and/or involved in campus sustainability?
11. I'm interested in hearing a little bit about your job at X university. Let's start with:
    a. What does an average day at work look like for you?
    b. What do you like most about your job?
    c. What do you like least about your job?
12. Out of all the sustainability projects you've been involved with on your campus, which ones come to mind as being the most successful and why?
13. Out of all the sustainability projects you've been involved with on your campus, which ones come to mind as being the least successful and why?
14. What *everyday* challenges do you face when trying to implement a new sustainability program or policy on campus?
15. What solutions, if any, have you found to these everyday challenges?
16. What *long-term* challenges do you face when trying to implement a new sustainability program or policy on campus?
17. What solutions, if any, have you found to these long-term challenges?
18. From which area or stakeholder group at your institution do you receive the most support?
    a. The least support?
19. How does your office measure success?
20. Do you think your office is successful? Please explain your answer.
21. With regard to your institution in particular, what is the most important quality that a person in your position must have to be successful and why?
22. What factors lead to successful sustainability practices, initiatives, and policies on college campuses?
23. Is there anything else you'd like to share before we end this interview?
24. Do you have any feedback for me about this interview?
25. Is there anyone else you think I could talk to?

Appendix C

Consent Form

Northwestern University

School of Education and Social Policy: Higher Education Administration

CONSENT FORM

Project Title: Sustaining Campus Sustainability
Principal Investigator: Kathryn Eimers

Introduction/Purpose:

You are being asked to participate in a research study for a graduate class at Northwestern University. My instructor is Dr. Lois Trautvetter, who may be contacted by phone at (847) 491-3901. I am conducting my study because I want to understand more about environmental sustainability on college and university campuses. You are being asked to participate because of your knowledge and/or familiarity with environmental sustainability issues, particularly in campus settings. The purpose of my study is to determine the ways in which higher education institutions successfully practice environmental sustainability.

Procedures

The research I plan to conduct will include interviews and surveys of higher education administrators who have been involved in some way in environmental sustainability on campus. As a participant in this study, you will be asked to participate in an interview about your involvement in campus environmental sustainability. I would like your permission to audiotape and to transcribe the interview so that I may study the discussion as part of my research class. The discussion will last approximately one hour and will be conducted over the phone.

Risks

You are unlikely to experience any physical, psychological, or social risks. If you feel, however, that you become uncomfortable or experience any problems due to participation in this project, you may withdraw at any time and I will understand.

Benefits:

There may be no direct benefit to you by your participation in this project. Your participation in this project may aid in our understanding of how to better organize, implement and operate institutionalized environmental sustainability practices on campus.

Alternatives:

You have the alternative to choose not to participate in this research study. You are free to withdraw your participation at any time.

Confidentiality:
Participation in this study is confidential and all information will be written in such a manner that you will not be identified. Both your first and last name will be replaced by a pseudonym in the transcription, all notes and the final report. All research material will be kept under the control of the researcher. Procedures to protect your identity will be followed in transcription and in all reports associated with this project. Information derived from this study will be used for research purposes within the context of my graduate research courses. Your identity will be kept confidential and any audiotapes will be destroyed once the transcription is complete. Although I do not expect this to come up, I need to make you aware that the only exception to this promise of confidentiality is that I am legally obligated to report any evidence of illegal activities, abuse or neglect.

Financial Information:
You will not incur any costs, nor will you receive and reimbursement for your participation in this study.

Subjects' Rights:
Your participation in this study is voluntary and you are free to withdraw at any time. Participation or withdrawal will not affect any rights to which you are entitled.

Contact Persons:
If you have any questions about this study you may call me, Katie Eimers, at telephone number (919) 475-1709. Please feel free to contact me anytime, including evenings and weekends. You may also call the Director of the Master of Science program, Dr. Sophie Haroutunian-Gordon at (847) 467-1999 if you have additional questions.

Consent:
I have read this form and the research study has been explained to me. I have been given the opportunity to ask questions and my questions have been answered to my satisfaction. If I have additional questions, I have been told whom to contact. I agree to participate in the research study described above and will receive a copy of this consent form. I will receive a copy of this consent form after I sign it.

_____

Participant Date

_____

Investigator Date