STUDENT DRIVEN ENERGY INDEPENDENCE:
A CASE STUDY OF HUMBOLDT ENERGY INDEPENDENCE FUND

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By

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ABSTRACT

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This thesis is an evaluative case study of the Humboldt Energy Independence Fund (HEIF). I use this case study to locate the Humboldt Energy Independence Fund within a broader movement of student-funded, campus sustainability organizations, which are growing nationwide, though differing in form. Prior research on student green fees has focused primarily on the creation of green fees through student campaigns with little attention to the design and management of these programs once they go into effect. This research uses organizational change theory to evaluate the successes, tools for success and challenges of HEIF. It also provides recommendations for HEIF’s continued improvement as an organization and best practices for other campus green fees. The results indicate that a multistakeholder organization which values interdisciplinarity, student leadership, collaboration, and organizational learning is effective at reaching its goals and overcoming obstacles.
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CHAPTER 1 INTRODUCTION

Student funded “green fees” are an emerging method of environmental action on college and university campuses (Ozeki 2010). They have emerged due to deep student concern for the current and impending severity of environmental destruction and climate change. Even in a time of rising tuition costs, students are imposing additional fees on themselves, showing their administrations that their impact on the environment is important to them (Ozeki 2010). Student green fees have become a popular mechanism for piloting and implementing sustainability-related projects on campus. The reason for their popularity is that the steps to creating this funding source are relatively straightforward. Typically, it starts with a group of students proposing the idea based on other campus models and surveys of the student body. Petitions to student government put the measure on a ballot; through the referendum process, the student body can elect to have a student green fee. If students pass the measure, then senior administrators can make the final approval to impose the fee.

Beyond the establishment of a green fee, how that fund is managed is of equal importance. The goals of the fee, the structure and culture of the organization managing the fund, and the campus stakeholders involved are all important factors in successfully addressing environmental issues. This thesis explores how one green fee, Humboldt Energy Independence Fund (HEIF) at Humboldt State University (HSU), came into being and how it addresses the management of the green fee on its campus. I will be looking at
the successes and tools for success of Humboldt Energy Independence Fund as well as the challenges that have been faced. Through this I will identify best practices for other campus green fees and recommendations for HEIF’s improvement.

At the end of this chapter, I present a brief history of HEIF from 2000 until now. Chapter two of this thesis analyzes six bodies of literature: organizational change theory, sustainability theory, environmental philosophies, the campus environmental movement, and green funds and fees. Chapter three outlines the rationale for choosing qualitative data collection methods, and then describes the specific methodology and grounded theory. Chapter four analyzes data from 18 interviews with students, faculty, staff and administrators involved with HEIF, supplemented by a number of documents, including annual reports, bylaws, and the original HEIF initiative. Chapter five is a discussion of the findings and recommendations for the improvement of HEIF.

History

The history of HEIF plays an important role in the development of the organization that exists today. The challenges that were faced in the development of the green fee, who became involved in its development and how the organization was developed, are all essential to understanding how this organization runs and what makes it successful. What follows is a brief history of HEIF from an idea to a well established green fee.
Humboldt Energy Independence Fund started in the fall 2000 semester as an idea in the mind of a student, Michael Winkler, who was concerned about the impact of HSU’s energy use. The original idea was for HSU to eliminate its dependence on “dirty” energy by buying “clean” energy from power companies. When Winkler shared this idea with Bob Schulz, then Chief Architect of the California State University (CSU) system, at a conference, Schulz suggested that the money should be invested into physical energy generating and energy conserving equipment on campus. Winkler continued to work on the idea with Schulz, who became the director of Physical Services at HSU in January of 2002.

Winkler quickly realized that he was going to need support developing and marketing this idea and felt that a natural place to find support was the Campus Center for Appropriate Technology (CCAT). At this point, Winkler had graduated. He was working at the HSU Schatz Energy Research Center and was an advisor for CCAT. He took his idea to the CCAT co-directors and asked for their support in developing this idea into an initiative that students and administrators would support. By bringing the HEIF idea to CCAT, Winkler forever changed the direction of the initiative. CCAT co-directors April Armstrong and Eddie Tanner steered the mission of HEIF to be in line with the student education focus of CCAT. They felt that if HEIF was going to be funded by students then there should be more active student involvement. With their guidance HEIF became a student majority committee with projects that are proposed by students and have high levels of student involvement.
In the fall of 2002, a rough proposal for HEIF was presented to HSU’s President Rollin Richmond and the Executive Committee. The proposal called for a $5 per student per semester fee increase, which would pay for energy efficiency measures and renewable generation. Reinvesting savings and revenue would allow HSU to self-generate 100% of its electricity from renewable sources by 2060. President Richmond was supportive of the idea and encouraged the students to continue developing it.

The HEIF initiative continued to develop under the direction of the Sustainable Campus Task Force (SCTF), a student club that was resurrected to focus on getting the HEIF initiative passed. Finally in the spring of 2004, the HEIF initiative made it onto the Associated Students ballot. The HEIF initiative called for a $10 per student per semester fee. By this time the SCTF had the support of over 400 students and faculty who had signed petitions supporting the initiative. The day of the vote, 1000 students came out and voted by a margin of 86% in support of the HEIF fee. President Richmond took the HEIF initiative and the results of the student vote to CSU Chancellor Charles Reed for approval, but was denied. The Chancellor had recently announced that he would not be increasing student fees across the CSU system, and although in this case the students were voting to tax themselves, he still refused.

At this point, the SCTF was unsure what to do. Interest dwindled. Winkler, and the other students involved in the lead up to the vote, moved on to other projects or graduated and a new set of students moved in to take their place. In the period between the student vote in spring 2004 and the creation of HEIF in fall 2007 SCTF struggled to maintain interest in HEIF and at the lowest point barely had enough members to maintain
their club status. They continued to table on the quad and have house parties to raise awareness and keep the momentum of HEIF, while continuing to meet with President Richmond once a semester to encourage him to enact the fee.

Finally in 2007, Chancellor Reed agreed to allow student fees to be raised. The HEIF fee was added to the student Instructionally Related Activities (IRA) fee. After HEIF was approved, the President appointed a number of faculty members to the committee, based on the guidelines put forth in the HEIF initiative. The multistakeholder committee was given the task of creating the mission, goals, bylaws, and structure of the committee. While HEIF does look very similar to the student HEIF initiative, the committee was not bound by that initiative.

In its first semester the HEIF committee worked to formulate the bylaws and the Request For Proposal (RFP) process by which they would be getting student projects. In the bylaws the structure of the HEIF committee is laid out. Originally the committee consisted of seven voting members, four students and three staff/faculty members, and up to ten nonvoting members. A student co-chairs the committee with the Director of Facilities Management.

HEIF made its first request for proposals in spring 2008 and their first project was to install solar panels on the old music building. They continued to accept proposals at the beginning of the fall and spring semesters with the same RFP process until 2010. In 2009, they did a small addition to the bylaws to address conflict of interest in the voting process. This was something they had been following in practice, and it simply needed to be added to the bylaws.
In 2010 the HEIF committee evaluated their progress and decided that a new RFP process was needed to increase the number of projects received, increase interdisciplinary student involvement, and increase the committee’s control over the progress towards energy independence. Starting in the fall of 2010 the committee instituted a new RFP process. While the committee is still addressing the problems of this new process, most feel that it is an improvement on the old RFP process and will allow them to achieve their goals faster and more completely. Starting in the fall of 2011, the committee revisited their bylaws and is still in the process of making alterations. These changes include adding a staff and student voting member, decreasing the quorum requirements, creating term limits for faculty committee members, staggering terms for student committee members, and a few other small changes.

Over a 12 year period, HEIF has gone from the idea that HSU should only be using clean energy, to a well established campus organization that is moving towards energy independence while creating a place for meaningful student learning and involvement. It was not an easy process by any means, but the students were eventually successful in their goals and the various challenges and supporters of HEIF shaped what it is today.
CHAPTER 2 LITERATURE REVIEW

This chapter will review relevant literature considering the question of environmental organization success on university campuses. I begin with organizational change theory. I follow this by defining sustainability and I complement this with a look at various environmental philosophies and types of organizations that emerge from these world views. Next, I look at global and national environmental declarations and organizations that encourage sustainability in higher education. Then, I examine research on some challenges to sustainability initiatives at universities and methods to overcome them. Finally, I review literature on green funds and student green fees.

Organizational Change

In a world that is constantly changing and fluctuating, it is important to understand how organizations adapt to that change. The economy, culture, environment, public opinion, and monetary and political systems all influence institutions of higher education. Understanding how, and if, organizations change is critically important for individuals within universities and colleges pushing for more sustainable institutions. In this section, I present an overview of organizational change theory and then apply it to higher education.

In organizational change theory, there is disagreement about the degree of organizational change. The two ends of this spectrum are: either all organizational elements can and should be modified in organizational change, or organizations are
fundamentally inert and little can be modified. Another way of conceptualizing this is that organizations either change from one organizational form, to another or they make small changes within an organizational form. Historically, change has been studied at the micro level, focusing on incremental change within archetypes (Grandori and Prencipe 2008). The dynamics of that process are quite distinct from those of large-scale change from one archetype to another.

Structural contingency theory sees organizational change as a transition from one organizational form to another. From that perspective, these organizational alternatives are mechanistic vs. organic forms, functional vs. divisional forms, and market-like vs. hierarchical forms. These various forms are seen as effective under different circumstances, and organizational change has been seen as a substitution of one form for another (Grandori et al 2008).

The structural inertia camp argues that the main organizational attributes are often inert for a variety of attrition forces including, the cognitive lock-in of “imprinting” (the initial mode of operating), the power of vested interests, the lack of information of relevant contingencies to which it may adapt, and the costs of change (Grandori et al 2008). If total inertia is assumed, there is no large change, but only small evolutionary changes within an archetype. This perspective has been developed further by organizational ecologists who have proposed that the lack of change, in terms of rigid conformity to the organizational models legitimized in society, are favored by “social” selection, rather than attrition.
Institutional theory also ascribes to the belief that organizations are much more likely to move towards an organizational ideal type, and that the transition from one form to another is rare, due to environmental factors and inertia (Greenwood and Hinings 1993). From the perspective of institutional theorist Greenwood and Hinings (1993), the organizational forms are a more complex typology and are specific to organizational environments. The organizational designs include the vertical and horizontal structures of roles and responsibilities, decision systems, and human resource systems.

Grandori and Prencipe (2008) propose another framework for analyzing and assessing the effectiveness of organizational change based on a typology of contingently and unconditionally effective organizational variants and invariants. They conclude that existing effective organizational characteristics can combine with a variety of effective variations in other organizational elements. Thus, some traits of the organization can change drastically in combination with traits that do not change.

Another focus of organizational change research focuses on the characteristics of organizations that deal well with change. Burns and Stalker (1961) explain that an organizational form needs to be adapted to the environment. If the environment is stable, then a mechanistic system is appropriate. However, if the environment is fluctuating, then an organic system is necessary. An organic system of management is best suited to changing conditions which constantly create fresh problems. Characteristics of organic systems include: less hierarchy than mechanistic systems; stratified by expertise; individual’s tasks are continuously redefined by interactions with others and with changing conditions; the most qualified person applies themselves to the issue readily for
the progress of the organization; members of the organization develop a sense of shared beliefs, values and goals to replace the hierarchical command structure; and communication is lateral, rather than vertical, and resembles consultation rather than command (Burns et al 1961).

Along the same lines as the organic model, many authors have stressed the importance of organizational learning. According to MIT professor Peter Senge, organizations that learn have three characteristics (Orr 2004). First, they are oriented to what people truly care about and are not focused on daily crises. Second, conversations in learning organizations tend to produce shared meaning, deeper understanding, and effective coordination. Third, organizational learning requires the capacity to understand complex systems and reflexivity to see how their own actions and ways of operating create their problems (Orr 2004:159). Orr also adds that at best, organizational learning is a means to rethink what organizations do and how they do it relative to a larger standard of human and ecological health (Orr 2004:160). Others (Smith and Sharicz 2011:79) define learning organizations as challenging mental models, fostering fundamental change, engaging in extensive collaborative activity, utilizing systems thinking, and revisiting core assumptions about its business and purpose.

A critique of organizational change research is that it has focused mainly on slow, incremental change and has mostly ignored discontinuous change. Deeg (2009) and other authors claim that change is “changing” from predictable to unpredictable, and thus change theory must adapt. Previous literature has a “pro-change” bias, that new is always good and old is bad. This new form of discontinuous organizational change is abrupt,
subversive of approved knowledge and brings traditional structures and processes into question. Change management tries to make change more manageable by oversimplifying and creating typologies or models. However, this oversimplification could have devastating consequences. Organizational discontinuity can be characterized as emergent complexity, where organizations must deal with situations as they evolve without a clear image of the problem, the solution, or the key factors involved. Deeg (2009) suggests the need for more research into discontinuous change in order to help managers deal with future uncertainties.

Organizational change and higher education

In the pursuit of sustainability in higher education, the literature discusses a need for organizational and philosophical change in the university system if sustainability initiatives are to be successful. It calls for a sustainable lens to be used when looking at operations, teaching, research, and outreach on a campus. The authors I discuss below all agree that academic institutions of higher education as currently structured are fundamentally incapable of addressing such issues, though they propose differing replacement structures.

Universities are an excellent example of bureaucracy. Weber (2003) described bureaucracy as superior to other forms of organization, which existed when he was writing, due to the precision, speed, lack of ambiguity, continuity, and unity of bureaucracies. Bureaucracy creates uniformity in process and procedure and removes dependence on any one person for its function. Weber also saw bureaucracy as the
embodiment of modernity and rationality. From the rational systems perspective, rationality refers to the process of reaching predetermined goals. The actions taken by an organization and its members are seen as rational, purposeful, and coordinated.

Since Weber’s time, a number of critiques have emerged in response to the rational systems perspective. In opposition to rational systems theory, some authors see the complexity of the organizational structure of the university system, and bureaucracy in general, as being incapable of behaving rationally (Sharp 2002). Universities have a complex organizational structure that is not structured for quick changes at such a broad level. They are limited by characteristics such as complexity, limited capacities to calculate all parameters, a static nature, fragmentation of problem and solution elements, shortage of time and attention, and quasi resolutions to conflict (Sharp 2002:130).

March and Simon (1958), who pioneered the study of decision making in organizations, noted that individuals are not omniscient and devoting time to gathering information is costly. This means that actors are only capable of limited or “bounded rationality” (Handel 2003). In fact, they found that familiar problems become routinized into standard operating procedures, and most of the time people avoid making decisions at all by simply following existing routines. In March’s later work, he looked at decision making at universities and argued that individuals and departments may not even have a clear idea of their own goals or may hold conflicting goals to other departments. In Cohen, March, and Olsen’s (1972) “garbage can model” of decision making, problems, solutions, and decision makers come together because of a coincidence of timing, like items in a garbage can (Scott and Davis 2007). They term this disorder in decision
making “organized anarchy.” March concludes that there is “a fundamental mismatch between conceptions of intelligent choice and the behavior of complex organizations” (March and Shapira 1992 quoted in Handel 2003).

While universities may not behave in a rational way, the survival of universities in the market of higher education and research requires that they preserve an image of rationality (Sharp 2002). This charade of rationality perpetuates processes and structures that are irrational, but ignore that irrationality. This “myth of rationality” inhibits systemic transformation in two ways. First, it is a barrier in the development of a learning university because it propagates the assumption that universities have attained the highest level of functionality and thus whatever is lacking must be accepted as an inevitable limitation of the system. Second, it prevents institutional analysis and reform since dealing with the symptoms is easier that dealing with the problem source (Sharp 2002). The implication according to Sharp (2002) is that environmental committees must shift their focus from systemic transformation to smaller, finite projects with lower levels of participation and impact.

Consistent with Sharp’s proposal that environmental committees at universities are stuck in a trap of irrationality which limits their effectiveness, Shriberg (2002) found that campus sustainability efforts at U.S. colleges and universities that had signed the Talloires Declaration were in the initial, piecemeal stages, without coordinated efforts across the university.

At a philosophical level, LeGrange (2011), Miller, Munoz-Erickson and Redman (2010), Henson, Missimer, and Muzzy (2007), and Cassel and Nelson (2010) all examine
the incapacity of disciplinary knowledge and traditional scholarship to respond to the complex and pressing problems of contemporary society.

Developing the idea of Deleuze and Guattari (1987) on arborescent and rhizomatic thinking, LeGrange (2011) applies this idea to the institution of higher education. Arborescent thinking refers to conceptions of knowledge as hierarchically articulated branches of a central trunk rooted in firm foundations, such as a tree, while rhizomatic thinking refers to chaotically complex networkings of stems interconnecting, like the shoots of some grasses (LeGrange 2011:745). LeGrange (2011) proposes rhizomatic thinking as an alternative approach because it increases the number of connections between community members, academics, and students, thus creating new ideas; it allows for education to be adaptive, transforming ideas to be responsive to multiple local contexts and needs, instead of imposing uniform ideas from above; and it breaks from Western thought and reintroduces reality as dynamic, heterogeneous, and nondichotomous (LeGrange 2011).

Miller et al (2010) claim that the knowledge currently generated is too static. They claim that to create “sustainability knowledge” requires epistemological pluralism and reflexivity. This approach encourages the recognition and inclusion of different knowledge sets, yet LeGrange (2011) would suggest that the knowledge production process is not decentralized enough. Miller et al (2010) encourages knowledge exchange and cooperation between disciplines and with the community in order to create “socially robust” knowledge that functions in the real world. However, they still hold on to the
hierarchical structure of arborescent thinking. Instead of many small, decentralized “rhizomes,” they see different knowledge sets as intersecting axes.

A similar, yet distinct, proposal suggests the need for a move to systems thinking in relation to sustainability education. Cassell and Nelson (2010) maintain that our current educational system reproduces archaic viewpoints and modes of analysis and understanding that actually contribute to the problems of social, economic, and environmental unsustainability and obscure our ability to address them. Like LeGrange (2011) and Miller et al (2010), Cassell and Nelson (2010) call for an inclusion of other knowledge sets and points of view previously excluded.

In a visioning done as part of their research, Henson, Missimer, and Muzzy (2007) created a vision of what higher education could look like with systems thinking permeating all levels of academia. Curricula and operations need to reflect an integrative approach to learning and practice so that all departments and disciplines work collaboratively. They also saw the content and context of education emphasizing systematic, trans-disciplinary thinking, experiential learning and real world problem solving (Henson et al 2007). For them, systems thinking is a powerful tool for social justice because it connects the fate of every person to that of every other person.

Case study

An example of organizational change comes from a German university. Noeke (2000) did a case study of a university implementing an environmental management system. The steps the university went through were:
These steps were implemented as a test in one department to determine their effectiveness before being applied to the whole university. Noeke (2000) found that certification was not enough to ensure a better quality product or process. To be effective, the new system must be integrated physically and philosophically into the organization and adopted by its members (Noeke 2000:249).

Contrasting view

Not everyone is supportive of a movement towards sustainability in higher education. Kissel (2010) sees a university’s adoption of a sustainable philosophy as oppositional to the foundation of liberal education. In his view, top down enforcement of sustainability measures is equal to a “moral, even spiritual re-education” that assumes students are “too consumerist, too intolerant, and too capitalist for the planet to survive… without quick and fundamental change” (Kissel 2010:58). The disagreement between the paradigms of Kissel (2010) and the authors I have reviewed above can be explained by Thomas Kuhn (1996) in his book *The Structure of Scientific Revolutions*. He explains that during a “scientific revolution” a new paradigm emerges and is accepted by the majority of the scientific community. Kuhn (1996) explains though, that there will always be those who hold onto their old beliefs even while accepting the new paradigm.
Utilizing Kuhn’s (1996) analysis, the transition to an education system that considers the environmental impacts of its campus’ members is the new “paradigm” which has not been fully accepted by all members of the scientific (or educational) community.

In summary, organizational change theory is split on the degree of change an organization can achieve, but the difficulties of that change are acknowledged. The environment an organization exists within influences its organizational structure and its ability to change. When an organization wishes, or needs, to make large change, a philosophical basis adopted by all the members of the organization is important to successful change.

Within the university system, any organization attempting to push for large-scale change needs to be aware of the structural and cultural challenges it will be facing. The literature on organizational change theory can help organizations understand their current structure, the challenges they will face, and possible approaches to create lasting change. Any approach will have to begin with philosophical change and then move to structural change. If members of the university or college community are unwilling to accept or support changes, then change is unlikely to be widespread or lasting.

As a subset of the university, Humboldt Energy Independence Fund (HEIF) is in a unique position to push for change. The students, faculty, and staff that make up the committee have leverage to create change from the inside as members of the campus community. The obstacle they will face is that the inertia of the university as a large, irrational, and complex bureaucratic organization will be resistant to change. Without widespread philosophical and organizational change, HEIF will have to shift its focus to
incremental change that may or may not move the university towards energy independence.

At HEIF’s organizational level, a learning organization that is adaptive and non-hierarchical will be best suited to deal with issues and changes that arise within the scope of HEIF’s efforts.

Defining Sustainability

The definition of “sustainability” and what it implies in terms of societal change is contested. The varied definitions of sustainability by a university’s stakeholders make any sort of progress difficult, because a common vision of the future does not exist. The most quoted definition of sustainability comes from the Brundtland Commission Report released in 1987. It defines sustainable development as: “development which meets the needs of the present without compromising the ability of future generations to meet their own needs” (Quental, Lourenço, and Nunes da Silva 2011:258). The report explored the factors behind the growing equity gap between the rich and the poor and issued guidance so that sustainable development could be integrated into national policies. Their guidance ranged from ensuring a sustainable population size to integrating environmental concerns into decision making to strengthening international cooperation (Quental et al 2011).

The difficulty in having such a generic definition is that terms such as “sustainable,” “development,” “needs,” and “compromising” all have normative definitions that can have multiple meanings (Vucetich and Nelson 2010). Other criticisms leveled against the term “sustainability” are: it has internal contradictions, it
manifests epistemological difficulties, it reinforces a problematic anthropocentric stance, it has great appeal as a political slogan, it is a euphemism for unbridled economic growth, and it does not take into consideration the asymmetrical relation between present and future generations (LeGrange 2010).

There have been a number of other attempts to define sustainability and the path towards that goal (Quental et al 2011, Smith 2010, Westley et al 2011). However, these attempts are usually limited in their success by disciplinary boundaries. These definitions are generally constructed from the knowledge of one discipline (e.g., economics, natural science, engineering) and are thus incapable of addressing all aspects of sustainability.

One definition I found useful was by Vucetich et al (2010). They view current definitions of sustainability as lacking an ethical dimension. They define sustainability as “meeting human needs in a socially just manner without depriving ecosystems of their health” (539). The framework arising from this definition has five critical dimensions which demand the attention of an interdisciplinary approach to moving towards sustainability. Vucetich et al’s (2010) definition of sustainability is better rounded than others because it makes social justice an essential aspect of sustainability, along with ecological health and economic growth.

The emphasis of most sustainability efforts on economic growth is based on an environmental philosophy that sees the relationship between humanity and nature as one of superiority and control. This philosophy narrows the definition of sustainability to the point of excluding ethical and human dimensions. There are however, a number of other environmental philosophies to choose from, which are described in the next section.
Environmental Philosophies

This section briefly describes the seven predominant environmental philosophies and the types of environmental organizations that emerge from these beliefs. I divide these seven philosophies into two broad categories: reformative and revolutionary. Reformative environmental philosophies maintain that with technological advances and small behavior changes we can preserve enough environmental resources to meet humanities needs while the economy and standard of living continues to grow. Revolutionary environmental philosophies connect some fundamental social issue with environmental degradation and insist that without drastic societal changes the environment will continue to be exploited.

Reformative environmental philosophies

The three reformative environmental philosophies are Conservationism, Preservationism, and Ecocentrism. They are the three most widely ascribed to environmental philosophies. All three philosophies, and the subsequent movements, have had a large impact on public policy in the United States. The Conservation movement began as a top-down effort to ensure the continued availability of natural resources to sustain economic growth. President Theodore Roosevelt advocated strongly for conservation of natural resources, especially the nation’s forests, and during his presidency (1901-1909) created the National Forest Service to manage the “sustainable” extraction of resources from the 42 million acres of national forest land he created.
Preservationism goes one step further and defines the environment as a recreational resource (Brulle 1996). Politically, Preservationists, such as John Muir (founder of the Sierra Club in 1892), campaigned to protect public lands from any destructive human intervention and maintain the natural landscapes for the exploration and enjoyment of the public (Brulle 1996:69, Oravec 1981). Ecocentrism is based in the natural sciences and ties human health to ecosystem health (Bevington 2009). From this perspective, wildlife and forests are not simply scenic amenities, but instead are integral to healthy ecosystems (Bevington 2009). Ecocentrism was the dominant philosophy of the environmental movement of the 1970’s and led to policies such as the Water Quality Act, Air Quality Act, and many other policies to protect the environment and human health. Organizations based on these three discourses share anthropocentric motivations of protecting the environment for human health, economic advancement, and the continuation of civilization as we know it (Brulle 1996).

**Revolutionary environmental philosophies**

Revolutionary environmental philosophies include Political Ecology, Deep Ecology, Ecofeminism, and Indigenous Beliefs. These philosophies claim that as currently structure, society is incapable of functioning sustainably and must change.

Political Ecology and Ecofeminsim link social formations to the destruction of the environment. From the perspective of Political Ecology, capitalism and industrialism are fundamentally linked to environmental destruction (Brulle 1996:65, Foster, Clark and York 2010, McBay 2011), while Ecofeminism ties the development of a patriarchal
Combining Ecofeminist and Native American views, Native American feminist and activist Andrea Smith argues that there is a connection between patriarchy’s disregard for nature, women, and indigenous peoples. In the same way that men view women of color as “rapable,” they also see nature as in need of domination and control (Smith 2005). Both Smith (2005) and Arquette and colleagues (2002) agree that the health of women and nature are integrally connected.

Another aspect that distinguishes revolutionary philosophies from reformative philosophies is their definition of the relationship between humanity and nature. Bill Devall, a prominent author on Deep Ecology (and former HSU faculty member), describes the movement as endorsing biospheric egalitarianism, the view that all living things are alike in having value in their own right, independent of their usefulness to others (Brennan 2008, Devall 1988). In support of this is the environmental perspective of indigenous cultures in the United States. In their belief all living things are sacred and deserve respect, no part of nature is exploited, wasted, or abused (Nicholson et al 2007). Organization based in these revolutionary environmental philosophies define their objectives as preserving the rights of all nonhuman beings and changing the social order in some way (Brulle 1996).

The environmental philosophy and definition of sustainability adopted by an environmental organization plays a role in defining how environmental problems are addressed. Goals, tactics, and how the organization measures success are all influenced by how the problem and mission of the organization are framed. As previously
discussed, the mainstream definition of sustainability has been shaped by the social and economic environment; capitalism. This leads most organizations to address issues of environmental degradation and sustainability from a perspective of economic benefit. While this is the dominant perspective, there are a number of other environmental philosophies. When forming an environmental organization on a university or college campus, it is important to understand that not every member of that organization will have the same beliefs about the human/nature relationship. If the organizational structure is non-hierarchical, different environmental philosophies could cause conflict, pull the organization in different directions, and lead members to be frustrated about the organization’s direction and progress. A common vision can help to avoid these conflicts and lead to greater success.

Sustainability in Higher Education

The sustainability in higher education movement will only be successful if it understands the environment in which it is trying to create change. This section looks at the status of sustainability in higher education, who is getting involved, what kinds of changes are already underway, and whether those changes are substantial or only lip service.

There has been little federal leadership on environmental issues in the United States (White 2008). To fill this void, local governments, colleges and universities have been addressing the issues of climate change and environmental degradation in their own ways. Over the past forty years, the campus sustainability movement has grown from a
grassroots effort oriented towards pollution reduction to top-down institutional responses to address climate change, local economies, social justice, and environmental justice.

**History of sustainability in higher education**

The first substantial attempt at an environmental initiative for universities at the administrative level was the Talloires Declaration in October 1990 (Ozeki 2010). The ten point action plan for incorporating sustainability and environmental literacy in teaching, research, operations and outreach at colleges and universities has been signed by over 400 university presidents and chancellors in over fifty countries (Association of the University Leaders for a Sustainable Future 2008). Specific to the United States, the American College & University Presidents’ Climate Commitment (ACUPCC) has goals similar to those in the Talloires Declaration and has 674 signatories from colleges and universities. Of the 23 California State universities, only six are signatories, and Humboldt State is not one of them (American College and University Presidents’ Climate Commitment 2007). These declarations are testaments to the importance of the topic of sustainability in higher education.

Two other organizations dedicated to the expansion of sustainability in higher education are the Association for the Advancement of Sustainability in Higher Education (AASHE) and the U.S. Green Building Council (USGBC). AASHE is a professional association which includes universities, colleges, businesses and non-profits, from around the world and USGBC is an organization dedicated to green building design, construction, operations, and maintenance. Both organizations have processes for
universities to evaluate the sustainability on their campus. The program by AASHE is the Sustainability Tracking, Assessment and Rating System (STARS). STARS is unique because it is a voluntary program. Humboldt State University is a member of AASHE, and has made plans to participate in STARS starting in the fall of 2012 (The Association for the Advancement of Sustainability in Higher Education 2005).

The assessment program from USGBC is their LEED (Leadership in Energy and Environmental Design) certification process which provides independent third-party verification of sustainable design for buildings (U.S. Green Building Council 2011). LEED certification has become a well known name, and thus universities can gain credibility and esteem for having LEED certified buildings on campus. HSU has at least three LEED certified building complexes and has committed to build all future buildings to LEED silver standards or better.

Who’s involved

An interesting finding by a number of studies is that there does not seem to be any pattern in the types of colleges or universities that have made the move towards sustainability. A study by White (2008), described and analyzed the type, size, and location of the original charter signatory institutions to the ACUPCC in an attempt to discover what types of campuses would be more likely to be climate change innovators. White found that of the signatories, private four-year institutions (39.3%) were most represented, then public four-year institutions (36.4%), and finally community colleges and two-year institutions (24.3%) (White 2008:220). These percentages are close, and
White (2008) was unable to determine any specific indicators of a “typical” signatory institution, however she notes that as more institutions sign onto the declaration, patterns will likely emerge.

In support of White’s (2008) findings, McNamara (2008) also found, from a survey of members of AASHE, that there were no significant correlations between the characteristics of the respondent institutions and the progress made on their sustainability initiatives. There does not appear to be a predominant size, type or location of institution adopting sustainability initiatives (McNamara 2008:190).

Stakeholder Approach

Change at the university level does not happen automatically, but requires change agents. There are three approaches for change agents to utilize when they set about moving their university towards sustainability. These approaches are top down, bottom up, and a multi-stakeholder method.

Top down approach

Top down refers to the location of the change agent in the administrative level of the organization. There has been a significant amount of effort on the part of university administrative leaders towards making their universities sustainable, such as the climate change initiatives discussed earlier in this document, as well as official statements made by university presidents. Brinkhurst, Rose, Maurice, and Ackerman (2011) acknowledge that many top down change efforts have had notable success, especially with regards to
planning, policy making, and regular assessment of sustainability, because they are supported by administrative resources, however they also point out their weaknesses (Brinkhurst et al 2011).

Top down approaches are subject to a number of challenges, or weaknesses. Sharp (2002) and Brinkhurst et al (2011) note that top down approaches are dependent on individual personalities championing the cause and acting as the change agent. However, administrators change roles often within a university and this can lead to gaps in leadership (Brinkhurst et al 2011). Another challenge, both authors agree, faced by administration, is their responsibility to represent a diverse range of stakeholders. Administrators may be reluctant to champion a cause that is not already supported by the campus community (Brinkhurst et al 2011, Sharp 2002).

**Bottom up approach**

A second approach for change originates from the students as a bottom up approach. Students have been organizing for many years to address the issue of sustainability. Almost every school has its own student environmental group. Helferty and Clarke (2009) documented that student groups in Canada were successfully involved in eight different types of campus climate change related initiatives. Despite the successful variety of initiatives, the most common led student initiative by a high margin was awareness raising (Helferty et al 2009). Both Sharp (2002) and Brinkhurst et al (2011) agree that raising awareness is the most common activity of student initiatives, though not the most impactful.
The unequal representation of student involvement in different initiatives can be explained by Gauthier’s classifications of youth involvement. Gauthier’s categories are; socialization through group involvement or symbolic participation in “mock” decision making; influence through protests, through being representative in decision making bodies or having a youth advisory body; and power through partnership (Helferty 2009:288). The types of initiatives that had higher levels of student engagement tended to be those that were more institutionalized within the campus or required a higher level of administration, while those with lower levels did not necessarily require the support of many on-campus stakeholders, required less knowledge, or were short term initiatives. This is due to a number of challenges faced by student groups including limited resources, limited understanding of how the university is run, limited to no access to the decision-making process, a lack of continuity in leadership as students graduate, and an adversarial rather than cooperative approach to change (Brinkhurst et al 2011:343-344, Helferty 2009:288, Sharp 2002:137).

Multistakeholder approach

The most successful approach to systemic transformation of a university towards sustainability seems to be a multistakeholder approach. Collaboration, another term for multistakeholder, is defined by Gray (1989) as “a process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible” (Gray 1989 quoted in Helferty, Clarke, and Kouri 2009:367). Shriberg (2002) found that sustainability
initiatives are most successful when driven by diverse stakeholders acting in a coordinated manner, with support from top administration. For change to be systemic, and not just piecemeal efforts, there must be buy-in and support from three important groups within the university; students, faculty/staff, and administration in order to be successful (Sharp 2002:137). Students and administrators have already been discussed above, so a brief description of the contributions of faculty and staff is needed.

Brinkhurst et al (2011) calls faculty and staff “social intrapreneurs.” A social intrapreneur is “someone who works inside major corporations or organizations to develop and promote practical solutions to social or environmental challenges where progress is currently stalled (SustainAbility 2008 quoted in Brinkhurst et al 2011:344). This title describes faculty and staff well because they have the ability to mitigate the risks of change with a well established knowledge of the university. Faculty are also, generally, long term members of the university community and can thus provide continuity to any collaborative program and have an invested interest in the long term goals of the university. Sharp (2002) points out that the pressures and demands of academic life often limit faculty’s time to engage in university operations. If they wish to participate, it is outside their normal duties of teaching and research. Another challenge for staff, and non-tenured faculty, is job security. Advocating controversial or unpopular positions may seem risky without the support of students and administration (Brinkhurst et al 2011:348).

McNamara (2008) found in his research of the success of sustainability initiatives that it did not matter which constituent group started the initiative, but that the success
depended on who became engaged with the effort after it was begun. Building a broad base of support that includes all campus groups was essential. In a compilation entitled *Sustainability on Campus*, three articles specifically discussed the importance of a multi-stakeholder approach towards successful sustainability initiatives on their campuses (Jahiel and Harper 2004, Jerman, Coull, Elzerman, and Schmidt 2004, Walker and Lawrence 2004).

By combining these three groups in a multi-stakeholder approach, the assets of each are better utilized, and their challenges are minimized. These three groups must feel that they have input in the process and a shared vision in order for sustainability to move forward in a strategic way. The multi-stakeholder process works because: students graduate and their efforts will only endure if they are supported institutionally; the process builds bridges to overcome polarization of departments; information, resources, priorities and perspectives of different stakeholders can be shared; the power of a multi-stakeholder group can leverage action from within the university; and official recognition by many stakeholders can give campus sustainability a higher profile (Helferty et al 2009).

A multistakeholder approach fits well with the interdisciplinary, holistic definition of sustainability by Vucetich et al (2010) shared in an earlier section. A multistakeholder organization will most likely have a comprehensive approach to sustainability, rather than a narrow one. If the members of the organization have a unified vision and are committed to philosophical and structural change, they will be a force to be respected.
Challenges and Successful Approaches

During any effort to create drastic change within an organization, especially one as complex as a college or university, challenges and barriers are bound to arise. The more these challenges are studied and documented, the easier it will be for future efforts to avoid, or at least overcome them. The literature outlines a number of challenges to sustainability initiatives on campuses, some of them overlap, and others are unique to the research.

Challenges


Other challenges mentioned less frequently, but by at least two sources were lack of support from administrative leaders (Henson et al 2007, Velasquez et al 2005), cultural
barriers (Henson et al 2007, Kurland 2011), policies that do not rank sustainability as a priority or lack of enforcement for these policies (Shriberg 2002, Velazquez et al 2005), and lack of technical training (McNamara 2008, Velazquez 2005).

Kagawa (2007) and Emanuel and Adams (2011) identified a challenge surrounding the interest and commitment of students to sustainability. Both found that a majority of students had a positive view of sustainability, but they found a rather large commitment gap. While students expressed great concern about the future, they were not equally committed to participating in sustainability initiatives.

Successful approaches

These are some formidable challenges faced by sustainability initiatives on college and university campuses. However, not all sustainability initiatives will face all of these challenges, or the same challenges. The authors above offer some suggestions for overcoming these obstacles. Four of the authors above mentioned communication and collaboration as essential to a sustainability initiative (Henson et al 2007, Kephart and Collins 2009, Kurland 2011, Shriberg 2002). Collaboration needs to occur between stakeholder groups, across the campus, and be an essential part of any decision-making process. Defining key concepts and goals was also seen as important (Henson et al 2007, Shriberg 2002). Without a common understanding of terms such as “sustainability” it is difficult to create goals and have a common vision of the direction in which the university should be moving.
Velazquez et al (2005) see the need for sustainability to be seen as a priority as an important step in the right direction. However, this would be a big refocusing of the university which may take some time. Until that happens, education and raising awareness in the direction of cultural change are the best use of resources. McNamara (2008) similarly proposes that support from the president of the university, professional development and training opportunities in “green” topics, and awareness raising campaigns would be most successful in overcoming the challenges mentioned above. From the bottom up perspective, Shriberg (2002) mentioned leadership commitment and constant stakeholder pressure on the university administration to support their goals. Kurland (2011) also put emphasis on dedicated leadership of the initiative, long term, systems thinking when planning and setting goals, incentives to encourage participation in the initiative, and community outreach to include the larger community in a move towards sustainability.

McNamara (2008) found a significant relationship between the completion and quality of a written plan, and progress made on sustainability initiatives. Thus a plan is important to success. Henson et al (2007) suggest the use of the Strategic Sustainable Development Framework (SSDF) as an “analytical tool to assess an initiative’s progress, as well as a planning tool to foster actions to be strategic to arrive at success in the system” (Henson et al 2007:55, emphasis in original text).

These methods combined with the philosophical and organizational changes mentioned in a previous section are all excellent methods for overcoming challenges to sustainability initiatives on university campuses. It is important to remember that all
campuses are different and will thus have distinct obstacles and advantages. A multistakeholder organization, with a common vision and an organizational structure adept at addressing change, would be better equipped to address these challenges than other types of organizational forms. In the next section I examine some specific examples of campus initiatives and their characteristics. Undoubtedly, they have faced a number of the challenges mentioned above.

Green Funds and Fees

Sustainability initiatives can take a variety of forms depending on the source of the initiative (top down, bottom up, or multi-stakeholder) and the characteristics and needs of the university. Most relevant to my topic are “green funds.” Green funds take a variety of forms but their general function is to provide financial support for sustainability projects on campuses. Student green fees are a new approach to moving universities towards sustainability and can be seen as an attempt by students to either fill a gap where they feel universities are not doing enough or as an addition to environmental initiatives being enacted from the top. Green fees are a testament to the importance of environmental issues to the student population.

There have only been a few studies that look directly at student funded green fees, since they are a rather new phenomenon. One report was written by Jacob Bintliff (2009) from the University of Texas-Austin, who conducted surveys and some interviews of colleges and universities with student green funds. As of May 2009, Bintliff identified 66 institutions of higher education in the U.S. and Canada where students have either voted
to implement or actively collect student green fees (Bintliff 2009). His final synthesis showed that of the 66 institutions 49 had active green fund programs, 13 were pending approval from senior administrators or some legislative body, and 4 were approved by students but blocked by senior administrators. The most recent report by Mieko Ozeki (2010) from the Harvard Extension School, found that there were 80 green fees at public and private, two and four year institutions in the United States (Ozeki 2010). Student green fees are unique because the students are the biggest stakeholders and often have a larger say in how the money is allocated.

**Funding sources**

On the financial side, there are two different types of green funds: the Green Revolving Fund (GRF) and the Sustainability Grant Fund (SGF) (Hunt 2011). These two types of funds are similar in many ways. However, they differ in the type of projects they can fund and the perpetuity of the fund. A GRF is a fund that makes “loans” to projects that must repay the fund over time, so only projects with a return on investment can be funded. As a result of this design, the GRF never decreases in size, sometimes it can even grow, and it has a long lifespan. A SGF can fund all types of projects, including ones that may not have an economic return (Hunt 2011:8). This however requires a constant influx of funds from the university, outside donations, endowment, pre-existing utility savings, or it can be from a student fee (Weisbord, Dautremont-Smith, and Orlowski 2011).
Weisbord et al (2011) found 90 institutions of higher education in the US and Canada with green funds, 52 of which qualified as GRF’s. The approach of green funds as an aspect of sustainability initiatives is a relatively new concept. While the first GRF was created in 1980 at Western Michigan University, the number of institutions with GRF’s has more than quadrupled between 2008 and 2011 (Weisbord et al 2011:10). In line with this, Ozeki (2011) found the number of student funded green funds quadrupled between 2006 and 2007, with 19 new green fees approved, in 2008 there was a drop to less than 9 new green fees, it then picked back up again with 15 in 2009 and 17 in 2010 (41). Ozeki notes that the low number of new fees in 2008 corresponds to a global recession. These statistics have some overlap as GRFs could be student funded.

**Management of funds**

There are a number of ways that these funds can be managed. Bintliff (2010) found that 72% of respondents to his survey indicated that a decision making body approves projects for funding, 20% responded that a student vote determined some projects, and 17% said projects were determined by “administrative decree” (Bintliff 2010:19). In breaking down these categories more specifically, 33% said there was a multiple constituent group that monitored and allocated the fund, 27% said it was a student council, and administrative official was cited by 36% of respondents suggesting that many campuses have a two-step process of allocation where potential projects pass through a committee before receiving final approval from an administrative official. Twenty four percent also responded that student organizations are the final decision
makers. What Bitliff (2010) distilled from these results is that many campuses have a complicated system of funding oversight and approval.

In Weisbord et al’s (2011) research, they found that of the 34 GRFs, six were overseen by a sustainability office, five by facilities and operations, four by a financial office, six by multiple departments, and 13 were overseen by committees (Weisbord et al 2011:22). In her research, Ozeki (2011) noted student funded green funds were most successful if they had a decision making body with representatives from diverse areas of the campus including students, staff, faculty, senior administrators, and alumni. She also suggested a permanent staff person be on the committee as the fund administrator in order to help the committee navigate complex bureaucracy and create continuity in the committee (Ozeki 2011:86-87).

Use of funds

Besides the organization of these funds, it is important to know what types of projects are being funded. Weisbord et al (2011) defines three broad categories for funds: “efficiency funds” which provide capital for energy or water measures; “innovation and engagement funds” which explicitly seek community engagement and ideas for projects; and “hybrid funds” that are a combination of the two previous categories, they target resource reduction and cost savings, but also consider community engagement and outreach goals (Weisbord et al 2011:14). More specifically, projects can be broken down, in no specific order, into campus infrastructure and equipment purchases, campus energy purchases, awareness raising campaigns, education,
sustainability research, community sustainability projects, recycling and waste management, food, transportation, ecological restoration, and supporting a sustainability office (Bintliff 2010, Ozeki 2011, Seaward and Liboiron 2011).

Bintliff (2009) found that campus infrastructure projects or equipment purchases as well as on campus educational campaigns were the two types of projects most likely to be funded. Ozeki (2011) found that of the 87 programs she looked at with green fees, 59 funded general campus sustainability projects, while 28 had specific defined functions such as: renewable energy (18 funds), supporting a sustainability office (four funds), recycling (three funds), green buildings (two funds), and transportation (one fund). As mentioned in a previous section, the most successful sustainable campuses are those with a campus-wide plan of action, though the green granting process is a good step in the right direction and could be utilized as a tool in a campus plan.

Case study

While education is mentioned as being within the scope of some green fund programs, there are not many examples of sustainability being incorporated into all aspects of the university. An excellent example of a school with sustainability integrated into all aspects of the campus is Northland College in Wisconsin. Northland College adopted an environmental mission in 1972 and Northland College Student Association (NCSA) also includes in its mission statement a commitment to sustainability (Clements, Hintz, and Herman 2008).
Northland has several majors and minors specifically devoted to sustainability, but they also incorporate environmental and social sustainability topics into all disciplines. Supporting this sustainability knowledge is an emphasis on leadership training and systems thinking (Clements et al 2008). Northland also has the Sigurd Olson Environmental Institute, the Center for Service and Stewardship, and the Center for Ethical Leadership which provide service-learning opportunities and “promote environmental understanding in the region through outreach” (Clements et al 2008:4).

The Environmental Council is Northland’s sustainability policy creation and implementation committee. It is composed of faculty, staff and students from various departments. The Environmental Council coordinates activities with the NCSA. The NCSA’s biggest contribution has been the creation of the Renewable Energy Fund (REF). The REF is a student green fee of $20 per semester that funds sustainability projects.

Clements et al (2008) find that the keys for success at their college includes multiple avenues for students to be involved, a student mentoring program that ensures program continuity, teamwork, collaboration and communication across the campus, and a Sustainability Coordinator and the Environmental Council who coordinate sustainability initiatives.

The structure of the green fund will ultimately shape how it operates and the type of projects it funds. The source of funding, the oversight of the fund, whether it is a GRF or a SGF, and how integrated sustainability is into the mission of the university or college are all important. Student fee funds are especially interesting because they are more
accountable in some ways to the student population than the administration. Students, with their passion and idealism, are likely to push for large changes, but without the guidance of faculty and staff, will likely get bogged down by the slow movement of the bureaucracy. Support from all members of the university community is what is really going to lead to the greatest success. There are gaps in the green fund and green fee literature surrounding how the organizations that oversee these funds operate. I hope to fill this gap with an in depth look at the inner workings of HEIF.

Conclusion

In summary, the literature offers valuable insights into theoretical and practical tools necessary for the success of environmental initiatives and committees on university and college campuses. Most of the relevant literature on campus environmental committees has focused on their tangible successes; the number of projects they have completed, the amount of money they have spent, and the amount of energy or greenhouse gases they have reduced. The measures of success are in quantifiable terms. There has been little exploration of the symbolic meaning of the organization for the campus community, the organizational culture of the environmental committee and how that contributes to its success or failure, or the possibility of multiple definitions of success. HEIF is unique because it was one of the first campus green funds to support a student funded, student run environmental committee with an emphasis on student-led projects. This level of emphasis on student involvement seems to be unique, or at least not subjected to much investigation. HEIF has also recently shifted its project proposal
process which presents a unique opportunity to study the transition process as well as the reasons for the change. Through my research of HEIF, I hope to fill the gap previously mentioned, provide a starting point for campus stakeholders wanting to begin environmental committees on other campuses, and contribute to the campus sustainability literature.
CHAPTER 3 METHODOLOGY

My examination of the Humboldt Energy Independence Fund (HEIF) utilized qualitative data. I conducted interviews and gathered documents relevant to the historical function of HEIF. Documents included the original HEIF initiative, three drafts of bylaws, and four annual reports. I received approval to conduct this research from the Internal Review Board (IRB) at Humboldt State University on November 14, 2011.

This study uses case study tools drawn from Creswell (2007) and Rubin and Rubin (2005). A case study:

“…is a qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information (e.g., observations, interviews, audiovisual material, and documents and reports), and reports a case description and case-based themes” (emphasis in text, Creswell 2007:73)

Specifically, this study is an intrinsic case study. An intrinsic case study is relevant to this research since “the focus is on the case itself (e.g., evaluating a program…), because the case presents an unusual or unique situation” (Creswell 2007:74). I participated in a HEIF funded student project in spring 2011 with a group of other students. This provided me with firsthand experience with the organizational process of HEIF and helped to develop my research focus.

This study involved 18 interviews with students, faculty, and staff, who participated on the HEIF committee or worked for HEIF, as well as an administrator who worked with HEIF. I selected interviewees based on their past or current involvement with the HEIF committee, with a focus on getting representatives from the three
participant groups (students, faculty and staff). Eight interviewees were students, five were faculty, four were staff, and one was an administrator. Seven interviewees were no longer participating in HEIF, the rest were currently involved. I interviewed almost the entire pool of past and current faculty and staff, except for two staff members and a new faculty member who just recently joined the HEIF committee in the spring of 2012. The largest pool of possible interviewees was students, as they only stay on the committee for a year or two before graduating and moving on. The previous student members were more difficult to get in contact with as most of them were no longer in the area. The students suggested to me for interviews were students who participated as the student co-chair or as the HEIF student coordinator. These two positions have the most responsibility and students holding these positions are most engaged in the HEIF committee. Interviewees were contacted initially by phone, email, or in person to request their participation in an interview. All interviews were done face to face, except one that was done via Skype. All interviews were recorded and then later transcribed word for word, except for one. Due to technical difficulties with the recording device, one interview was not recorded. I took notes as the interviewee talked. In this report, quotes have been edited to remove “um’s,” “you know’s,” and other repetitive words for clarity when reading. By not referring to interviewees by name or any other description that could identify them in the report, confidentiality and anonymity were assured.

I collected data using an in-depth, semi-structured interview protocol (Rubin and Rubin 2005). Interviews lasted between 30 minutes and 70 minutes. I conducted the interviews in the 2011-2012 school year. Questions on the goals and history of HEIF, its
organizational structure, the project selection and funding process, as well as challenges and successes of the program were asked (Appendix A). The interview guide was used flexibly in that topics were not discussed in any particular order. Interviewees were encouraged to discuss in more depth topics that were particularly relevant to them. Not all questions were discussed with every interviewee. I transcribed the tape recorded interviews into Atlas ti, along with relevant organization documents, including bylaws and yearly reports.

Sampling and methodology posed limitations to this research. First, the student interviews were limited to students who served as co-chair or as HEIF staff. I was not able to interview students who submitted proposals in the old or new project proposal process. To better understand the efficiencies or inadequacies of the proposal process, interviewing students who submitted proposals would have been beneficial. While many of the students I interviewed had submitted project proposals, they also had inside knowledge of the committee process, and thus their perspective was distinctive to students who simply submitted proposals. Second, a survey of the whole campus community would be useful in understanding who knows about HEIF and what is known about HEIF, as well as if the students feel that HEIF is a positive use of their fees. Due to time limitations I was not able to include a campus survey in this research.

Grounded Theory

Grounded theory is generally considered useful when studying human action and interaction. It is a micro-sociological approach to investigating social problems or
situations. Martin and Turner (1986) note that grounded theory is especially useful for those “conducting case studies of organizational behavior who wish to produce more than an impressionistic account from their inquiries… and those concerned about carrying out the detailed, locally based fact gathering and interpretation essential to conducting excellent organizational research” (Martin and Turner 1986:143). Grounded theory also helps the researcher to move from a description of what is happening to an understanding of the process by which it is happening (Cooney 2010).

**Early history of grounded theory**

Grounded theory was developed by Barney Glaser and Anselm Strauss at the University of California, San Francisco. The groundwork for this theory was in their coauthored book *The Discovery of Grounded Theory: Strategies for Qualitative Research* in 1967. It emerged out of a desire to bridge the “embarrassing gap between theory and empirical research” (Glaser and Strauss 1967 quoted in Cooney 2010:19). The authors note that at the time, there was too much emphasis on the verification of theories and not enough on the discovery of concepts and hypotheses relevant to one’s area of study. To fill this gap they proposed the methodology of grounded theory. Grounded theory is defined as the “discovery of theory from data” (Glaser and Strauss 1967:1 authors’ emphasis). As defined by Glaser and Strauss (1967), theory is a strategy of conceptualization for describing and explaining data in research. Grounded theory is an inductive and systematic method of discovering theory from social research. The benefits of grounded theory are a complex, robust theory that fits the data. Glaser and
Strauss also argue that because grounded theory is derived from the data, the layperson involved in the field of study will usually be able to understand it.

Later developments in grounded theory

In the years since the publication of their earlier statements about grounded theory, Glaser and Strauss have diverged in their approach to data analysis. Glaser remained more faithful to the original version of grounded theory in his approach to data analysis, while Strauss, coauthoring with Juliet Corbin, laid out a procedure for data analysis. Their method of analysis was severely critiqued for being “programmatic and overformulaic” (Melia 1996 quoted in Cooney 2010), while Glaser himself accused Strauss of promoting an entirely new method which he described as “forced, full, conceptual description” (Glaser 1992 quoted in Cooney 2010). In their second edition of the book, Strauss and Corbin modified their approach to data analysis and pointed out that it had not been their intention to promote rigidity, though they are rarely credited with this flexibility.

The core conflict between Glaser and Strauss is whether verification should be an outcome of grounded theory analysis or not (Cooney 2010). Strauss indicated that induction, deduction, and verification are absolutely essential, whereas Glaser maintained that grounded theory is inductive only. Glaser describes two types of coding processes (substantive and theoretical) while Strauss describes three (open, axial, and selective). In his later writing, Strauss’ writing shifted to an “abductive” reasoning approach. Glasner,
in contrast, has remained steadfast to the belief that theory simply “emerges” from the actual data.

**Critique of grounded theory**

A critique of grounded theory as a whole comes from the writings of Merilyn Annells in her review of the relation between grounded theory and “post-modern” methods of inquiry. Annells adopts a fourfold typology of inquiry paradigms – positivism, post-positivism, critical theory, and constructivism – and attempts to place grounded theory in terms of these theories (Dey 1999:17). She has difficulty placing grounded theory in terms of any particular paradigm and sees this as a weakness rather than a strength. She suggests that the way we answer the ontological question of “What is the form and nature of reality, and what can be known about it?” shapes our methodology (Dey 1999:17).

**Constructivist grounded theory**

The grounded theory approach I will be following for this research is a constructivist grounded theory expounded by Kathy Charmaz (2006). A constructivist approach “places priority on the phenomena of study and sees both data and analysis as created from shared experiences and relationships with participants and other sources of data” (Charmaz 2006:130).

Constructivist grounded theory lies within the interpretive realm of theorizing. Within this realm, theory is seen as a tool for understanding, rather than the positivist
perspective which sees the purpose of theory as explanatory. Charmaz (2006) explains that interpretive theories give priority to showing patterns and connections rather than linear reasoning. “Interpretive theory calls for imaginative understanding of the studied phenomenon. This type of theory assumes emergent, multiple realities; indeterminacy; facts and values as linked; truth as provisional’ and social life as processual” (Charmaz 2006:126). This is compatible with George Herbert Mead’s symbolic interactionism, and follows the grounded theory perspective of Strauss and Corbin towards the end of their work together. In brief, interpretive theory aims to: conceptualize the studied phenomenon to understand it in abstract terms; articulate theoretical claims pertaining to scope, depth, power, and relevance; acknowledge subjectivity in theorizing and hence the role of negotiation, dialogue, and understanding; and offer an imaginative interpretation (Charmaz 2006:127).

Returning to the application of the constructivist approach to grounded theory, constructivist theorizing means learning how, when, and to what extent the studied experience is embedded in larger positions, networks, situations, and relationships. It looks at the differences and distinctions between people, as well as the hierarchies of power, communication, and opportunity that maintain and perpetuate such differences and distinctions (Charmaz 2006). There is also an important reflective stance towards the research process and the perspective of the researcher. Constructivist grounded theorists assume that both data and analyses are “social constructions that reflect what their production entailed” (Charmaz 2006:131). Thus, the context of time, place, culture, and situation are relevant to any analysis.
Guided by Charmaz (2006) and an article by Martin and Turner (1986), which focuses specifically on the use of grounded theory in organizational research, I will explore the organizational culture of Humboldt Energy Independence Fund (HEIF) and how this culture, as well as the context in which the organization functions, has contributed to the successes and failures of HEIF as an organization.

Approaching my data from a constructivist grounded theory approach, the first step was to read through all of the interviews and look for recurring themes. I created some loose categories based on these impressions, and then went through the interviews a second and third time, coding words, phrases, and sentences that fell into the categories I had identified in my first read through. I also identified important statements that did not seem to fit into any category. I then reviewed the quotes in each category for fit, and reworked several categories, adding some and eliminating others that did not end up being important. I then divided the categories into more prominent and less prominent categories, based on the number of quotes in each category. I ended up with 19 categories, 14 major categories, and 5 smaller categories (Table 1.0). These categories were then combined into 5 themes; Goals, Measuring Success, Challenges, Organizational Culture, Success, and Improvements Needed.
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CHAPTER 4 FINDINGS

In this section, I discuss my finding from the 18 interviews I conducted with students, faculty, and staff of Humboldt Energy Independence Fund (HEIF) and an administrator and selected documents (See Appendix B). The focus of my analysis was on organizational form and change. My goal was to understand how HEIF is structured, functions, and deals with change. I looked for best practices, things that HEIF does well, as well as places where HEIF could improve. I used grounded theory to develop six themes from the interviews and documents. The themes that emerged were: Goals, Measuring Success, Challenges, Organizational Culture, Success, and Improvements Needed, which I will present in this chapter.

Goals

In this segment on goals, I look at the distinction between the stated goals and practical goals of HEIF, the relationship between energy saving and student learning as their two main goals, and the reasons for not adopting a broader mission of “sustainability.”

The mission statement and goals of an organization direct its activity and are used as the measuring stick for the organization’s success. HEIF has a mission statement and five goals that are subsumed under the mission statement. The mission statement of HEIF is “to reduce the environmental impact of energy use at HSU through student driven projects.” The five primary goals of HEIF are:
The HEIF will achieve its mission through projects that are developed by students and, to the extent possible, implemented, monitored, and maintained with strong student involvement.

The HEIF will require accountability by measuring and reporting quantitative and qualitative results, as well as levels of involvement by students and other participants, in all its projects.

The HEIF will strive to make its projects derive from and be connected to the curriculum of the university.

The HEIF will support dissemination of information about its projects through public outreach and educational activities.

The HEIF will seek to publicize accomplishments and experiences associated with its program and projects through a variety of media.

Something not mentioned explicitly in the mission statement or goals is the time period in which the organization would like to reach energy independence. However, the members of the committee do have a time frame in mind. The original HEIF initiative had calculations in it that predicted energy independence for HSU by 2043. However, these calculations were based on the assumptions that HEIF would fund more energy generating equipment (which they may do in the future) and that all of the savings from the projects would be returned to the HEIF fund. The start date for these projections was 2003, but HEIF didn’t start funding projects until 2008.

Despite the differences between the initial HEIF proposal and the reality of HEIF, many committee members mentioned the 2043 date of energy independence as the goal for HEIF. While this date is probably not realistic for the organization, it is a motivation to do more projects and bigger projects. Other interviewees felt that just the act of working towards the goal of energy independence, even if it was never reached, was good enough because it was a step in the right direction. One student who worked on the HEIF initiative expressed this sentiment well,
“I don’t know if any of us really thought that the whole thing would have really happened, that HSU would be completely energy-independent, but I don’t think that really mattered to any of us because, all of us were…pretty much on the same page that something’s better than nothing and we should be moving in this direction. And, like I said earlier, from the point of view of folks who were on CCAT, as long as people are learning and students are involved in this process…I think the emphasis on student learning as a main goal comes from a number of factors. First, the mission statement of the original HEIF initiative stated that “The mission of the Humboldt Energy Independence Fund is to reduce the environmental impact of energy use at Humboldt State University (HSU) through student driven projects.” The inclusion of student involvement came from the early CCAT participants, who molded the initiative to fit with the mission of their organization. When asked to describe the mission of HEIF in their own words, some interviewees only mentioned energy related goals, but the vast majority described the mission as similar to that in the original HEIF initiative, including energy goals and student learning goals as equally important. Even interviewees who did not mention...
student learning as the mission of HEIF, as the interview progressed, did put a lot of importance on student participation, leadership, and learning. A student interviewee described student learning as “the quiet, silent priority.”

A second reason student learning is seen as a main goal of HEIF is because HEIF is student funded. The HEIF committee feels responsible to not only reduce energy, but give the students "the most bang for their buck" by making student participation a priority.

Finally, since HSU is a learning institution, students expect a learning component to everything in which they participate. Students and faculty have been especially supportive of student learning as an essential part of HEIF. In an interview with a staff committee member, he described HEIF’s mission as, “I would say the highest level purpose of it is to reduce HSU's energy footprint at the campus, but because we’re a learning institution, there’s a big learning element to it too…I think [student learning] is a kind of secondary level goal.” However, at the end of the interview he reversed the importance of these goals:

“I mean at the beginning of this conversation, I said that I saw the student learning component as sort of a secondary goal of HEIF. And I think in official terms, maybe that’s the way it’s written down. But, for me, I think it’s probably the greatest accomplishment of HEIF… it’s been a great training ground for students.”

Student participation and learning has become a huge measure of the success of the organization, which will be discussed more in a later section.

Several interviewees mentioned the possible discrepancy between these two goals. High student turnover rates and frequent lack of student expertise, HEIF’s
dedication to student driven and implemented projects can be a limiting factor on the goal of energy independence. This is a place where it seems like the goal of student learning has superseded the goal of energy independence.

Another place where student involvement and energy independence collide is in the decision to move to a different project proposal process. Part of the motivation for changing the process was a need for more projects and ideas, so that the committee can spend all of its money every semester, and thus save more energy. The other energy motivation is that the committee wanted to have more control over the projects, and theoretically be able to propose their own ideas and hire students to develop and execute them. They hope that this approach will lead to a more organized advance towards energy independence, instead of piecemeal efforts. It can be seen in this situation that student envisioned projects are not seen as an organized way to achieve energy independence.

Another motivation for changing the proposal process is for student learning and participation. Several interviewees mentioned that the original RFP process was too arduous for broad student participation, only engineering and environmental science students (for the most part) had the expertise to write up a proposal. Even then, almost all of the projects went over budget. The money that funds HEIF is from the whole student body, so there is a desire to include interdisciplinary student participation. The new process allows the committee to request students from different departments and put together interdisciplinary teams that would never come together on their own.
Interdisciplinary teams may also advance the goal of energy independence by introducing new perspectives and approaches to the energy goals.

Goals are very important to the direction of the organization. Several interviewees mentioned the importance of defining the goal of the organization as "energy" independence, instead of the more broad term of sustainability. While a few interviewees felt that the definition of the goal of HEIF as energy related is limiting, most felt that the goal of energy independence was useful as a way to measure the success of the organization and the projects. Energy savings can be measured in kilowatt-hours, therms or carbon dioxide emissions. Having a quantifiable measure makes it easier to compare projects during the selection process, as well as measure success of the project after it has been implemented. If the goals were broadened to include the reduction of any environmental impact, then it would be more difficult to compare the relative benefits of projects. However, it would open up the organization to a wider variety of projects, and possibly make it easier to attract students and projects from more disciplines.

Measuring Success

In this segment on measuring success, I discuss the quantitative and qualitative measurements of success utilized by HEIF in the two areas of its goals; energy saving and student learning.

Measuring success is important to any organization, whether to evaluate the effectiveness of the organization, or to justify its existence. HEIF needs to measure its
success for both of these reasons. The committee wants to evaluate how effective it is in achieving its goals, and it must also justify to the university administration that the program deserves to continue every two years. Success of projects, and the organization as a whole, is measured in quantitative and qualitative terms in the categories of the two main goals; energy and student learning. On the energy savings side, the number of projects that have been completed since the beginning of the organization, the amount of quantifiable energy saved, and the amount of energy produced are all measures of the success of the organization. There are also less quantifiable measures of success, such as light pollution. In the project to relight the Redwood Bowl, the success of the project was measured by the number of kilowatt hours saved per year and the reduction of the number of light poles on the field from eight to four. However, as one interviewee explained “the side benefit, that we didn’t have as a real stringent criteria, was that it reduced the overall light pollution at night as well. We didn’t have a really good way to quantify that but it was easily observed during the night time.” The quantitative energy measurements are what justify the projects, even though the committee often recognizes that there are other, qualitative benefits to projects.

On the student learning side of measuring success, the quantitative measures include how many students have participated on the committee, proposed or worked on projects, and the number of student work hours. There are also the qualitative aspects, such as the skills, qualities, and ideas that students take with them beyond school from their experience with HEIF. Also, as HEIF begins to do more projects on behavior
change, there will be a global impact as the student population changes their values and behaviors towards conservation.

These less quantifiable aspects seem to be just as important as the quantitative measurements of kilowatt hours and student work hours. In an interview with a staff member who has been on the committee since the beginning, it was explained that:

“Because the committee, at least the founding group of the committee that was writing the bylaws, mission and goals, those types of things, did realize that energy and electricity use on campus will be the thing that we can measure most easily… but really what we’re looking at is affecting behaviors and other kinds of less tangible less quantifiable things to get at that reduction of energy use.”

Energy savings as a measurement tool allows for quantitative measures of success, but does not preclude side benefits which may not be used in the measurement of the project's success in a quantitative way, but in a more qualitative way.

Energy is a good rubric to determine the success of the projects and organization, so that its continuation can be justified. However, I got the impression from students, teachers, and administrator, that the student learning component was a more important measure of the organization's success. In the future, the committee may need to address this discrepancy between the best measures of the organization’s success; energy saving or student learning. In the next section I discuss the organization’s challenges and later I will discuss the successes of the organization.

Challenges

In any movement or organization, challenges will arise that threaten its success. In looking at the history of HEIF and its challenges, they can be broken up into two time
periods; working up to the approval of the HEIF initiative, and after HEIF was approved and became a campus organization. The challenges leading up to the adoption of the initiative included: bureaucracy, lack of support, opposition from administrators, organizational structure, and money. The challenges for HEIF after it was formed included: committee challenges, bureaucracy, high student turnover, organizational structure, time, and the project proposal process.

The HEIF initiative

As a student movement, the Sustainable Campus Task Force (SCTF) faced a number of challenges in its efforts to get the HEIF initiative approved. The greatest challenge was navigating the bureaucracy of a large university. In working to write a proposal that would be approved, there was a long series of meetings with Plant Operations, financial administrators, the Student Fee Advisory Committee, Associated Students, and the president of the university. It was a long process of editing, meetings, and getting stamps of approval.

Another challenge the student movement faced was a lack of faith in the student's ability to get this fee enacted; whether due to a lack of faith in student competency, or an understanding of the bureaucracy that would have to be overcome. A student who worked on the initiative told me in his interview about meeting with the director of Plant Operations:

“I think honestly, in those, especially in those early meetings, I didn’t think he felt that there was a chance in hell that the money would actually materialize. You know he was like, ‘Well I’ll entertain this idea because, you’re motivated students and it sounds
like a good idea.’ But I could tell in those meetings that he didn’t think anything would come of it. And it did take a while for anything to come of it.”

Fortunately, the students were supported by other faculty and staff, so this was not an insurmountable barrier.

The third challenge was that the university system had been having budget troubles, and the chancellor had pledged not to increase student fees. Tuition was a huge challenge to the movement, and while many interviewees said that they felt this fee should not apply, because the students were voting to tax themselves, it was the main barrier that kept the fee from being enacted between 2004 and 2007.

A fourth challenge was a lack of organization, especially after the fee was denied by the chancellor, between the spring of 2004 and the fall of 2007. The SCTF had very few strategies to get the Chancellor to change his mind about the new fee, so they were a bit lost and had little direction after the fee was denied. Since the initiative had stalled out, so did the organization. Leading members graduated or moved on to other projects, interest decreased, and membership in the club also decreased to the point where three or four people were keeping the dream alive. In an attempt to create more organizational structure, SCTF became an AS organization, however, this added level of bureaucracy only added challenges to the organization. There were only a few students actively involved with SCTF at this time and that put a lot of responsibility on them. A student who was active in SCTF at that time recounted that it was difficult to get students to participate;

“Yeah, it was….there was a lot of responsibility actually. And when you conceive that everything is kind of crumbling around you…it’s almost like, you don’t
necessarily want to jump on a sinking ship. Especially if you’re not entirely certain that you have like, the moxie to really like, make it a success.”

A final challenge during this period was upfront costs. In order to raise awareness about HEIF, advertising and tabling were important tactics. The club made T-shirts, ran an ad in the Lumberjack, and printed promotional materials. These costs could have been prohibitive without the financial backing of Michael Winkler. As an adult student, he was more financially stable, and able to pay for the costs of the materials needed to promote HEIF. Without his financial contribution, it is possible that the student vote on the initiative could have been lower. Without popular student support, the HEIF initiative never would have gotten approved.

All of the challenges faced by the students pushing for the initiative were mentioned in the literature (Henson et al 2007, Kurland 2011, McNamara 2008, Sharp 2002, Shriberg 2002, Velazquez et al 2005).

The HEIF committee

After the approval of the HEIF initiative in 2007, HEIF has continued to be confronted with new challenges, some of which have been addressed, and some which continue to trouble the organization.

When the president appointed the original members of the committee, the members had the challenge of creating HEIF. They had to define their goals, who they were, how they would function, write bylaws, figure out how they got access to the IRA funds, and other new organization challenges. Several interviewees mentioned that
writing bylaws is a very long, tedious process which can be made even more challenging by the diversity of the group. Having an interdisciplinary, multistakeholder committee can be a great asset as it brings a diversity of ideas and perspectives to the table, but it can also make decision making more difficult.

The most frequently mentioned challenge faced by HEIF was bureaucracy. Working within the framework of the university, which is a large, bureaucratic system, came up over and over again as a barrier to HEIF's success. Specifically, interviewees mentioned the bureaucracy of the university as a financial and temporal challenge. Since HEIF operates within the university system, projects are more expensive and take longer to complete than they would outside the system. This is because approval must be obtained to make alterations to buildings or to install energy generating equipment and the university has regulations that increase costs. These regulations are also a barrier to student involvement. The university has regulations for work safety as well as paying workers. Thus, it is often difficult to get approval for students to participate in the installation of equipment. Students also must get paid a high minimum wage, as university employees working on technical equipment, which can drive up costs.

Another challenge of bureaucracy is the short term view of the university. Many energy saving technologies cost more up front, but could save the university money over the long term. The university has money in the budget to pay high utility bills every year, but is often unwilling to invest in high upfront costs to save money and energy in the future. This is a challenge for Plant Operations, as well as HEIF, because they often
partner on large projects. The university's emphasis for short term paybacks limits the projects that Plant Operations can do with HEIF.

Another challenge mentioned quite frequently was that of high student turnover. This is a challenge on the committee and also in the project proposal process. Students have the voting majority on the committee and thus are essential to the smooth function and decision making. Student turnover every year or two can break up the organizational continuity, require educating new members on the mission, procedures, and history of the organization, which takes time away from getting things done. On the project proposal side, student turnover can be a challenge because proposals in the old process often took several semesters to get approved, thus only dedicated students who had several semesters to work on a proposal would be successful. A faculty member explained that students generally propose projects “in maybe their junior or senior year, and then they graduate, and a whole new set of students come in, so you don’t have that much institutional memory.” Also, once projects were approved, the installation and follow up was easier and more likely to happen if the original students were still around.

Students also mentioned that it was a personal challenge learning to speak up in committee meeting with faculty and staff who they looked up to and saw as experts in their fields. “Trying to be an equal. And trying to bring a different perspective to the committee was, daunting, and I think a lot of people originally struggled with that.” Also for the student chair, learning to run meetings, create schedules, and manage discussions within the meetings was another challenge.
Almost everyone I spoke with felt that time was a serious challenge for the committee. The committee meets every two weeks during the semester. Finding a time that works for everyone has been almost impossible. A busy schedule for all committee members has made scheduling meetings a challenge. It usually happens that at least one person cannot make the scheduled meeting time. The meetings are also only an hour long. Some interviewees felt that this was sufficient, but others did not feel that one hour every two weeks was sufficient to accomplish everything on the agenda. These interviewees, who thought meetings needed to be longer or more frequent, did not necessarily want to attend more meetings or extend the meetings. Faculty and staff are very busy due to budget cuts, which have resulted in adding responsibilities and limiting their time to participate in HEIF.

The last challenge mentioned by the interviewees was the original project proposal process developed by the committee. This process was described as a proposal for a granting agency. There was a detailed five page proposal that needed to be completed which outlined the energy savings, measurements for success of the project, an itemized budget and other requirements. The committee found that this proposal process was a challenge rather than an asset because it was too strenuous a process for most students to complete, projects had to be resubmitted over several semesters before they met all the guidelines, and even after all that preparation most of the projects still went over budget. The difficult process also deterred students from applying, so the committee was not receiving enough project proposals. It also limited the type of students who applied, which was generally limited to engineering and environmental science students,
and kept HEIF from being open to the social sciences and humanities. Explained well by one faculty member:

“The fact of the matter is that, aside from some of the more advanced engineering students, students didn’t have the wherewithal to do that. You know, they could have a good idea but, to get from a good idea to an installed project was something that they had never done, and they didn’t know the details of how you do that. And, it’s a long way from a good idea to an installed working system.”

The committee also felt that by simply waiting for proposals to come to them, their progress towards energy independence was too slow and piecemeal because, “it's really hard for students to think big picture… because students come in and they are just sort of coming to grips with, or becoming familiar with, what information is out there about energy on campus, what projects we might do, and then trying to come up with ideas.” Several committee members felt that their expertise was underutilized. One faculty member explained:

“…there is no reason why the committee itself can't identify priorities and say, ‘let's get a group together to hammer out the details of how we can address this thing that we know is a big problem, whatever this thing is,’ right? And we know it because the group of us collectively has a lot of experience around these kinds of issues on campus.”

However, the project proposal process was not set up in a way that utilized the expertise of the committee members, so it was apparent to the committee that the process would need to be changed.

Other challenges with the projects include measuring the outcomes and successes of "soft science" projects, verifying savings on projects, and recovering investments. The issues with verifying savings and recovering investment have to do with the fact that the university does not have a very advanced or accurate measure of the energy use on
campus. Some campuses have high-tech systems that give minute to minute data on energy use by building. HSU has monthly data, so the lack of more detailed information is a problem. Beyond that however, buildings are complicated environments and energy readings cannot identify all the factors that affect the energy bill. Thus it is difficult to verify savings. This has become more important now that HEIF has an agreement with the university which allows it to recover some of the energy savings.

The challenges of organizational structure, bureaucracy, student turnover, and time were mentioned specifically in the literature (Helferty et al 2009, Henson et al 2007, Kurland 2011, McNamara 2008, Sharp 2002, Shriberg 2002, Velazquez et al 2005). The challenge of creating the organization was not mentioned. This is probably due to the static nature of the assessment of campus sustainability initiatives/organizations or because the sustainability initiatives at other campuses are more integrated into the university’s administrative system. The project proposal process was also not mentioned in the literature as a challenge. This could be due to the small size of HSU, a smaller student population means less project proposals. It could also be due to the lack of emphasis on student learning by other green funds. The project proposal process would not have been such a challenge if the HEIF committee was unconcerned with incorporating student learning into the process of energy savings.

The impact of challenges on an organization is determined by the organizational culture and how they respond to the challenges. The following section looks at the organizational structure and culture of HEIF and how they have responded to the challenges mentioned above.
Organizational Structure and Culture

In this segment I discuss the HEIF committee’s structure, culture, and tools for success. First I discuss HEIF’s committee structure as a multistakeholder, interdisciplinary, student led committee. Then I look at the committee’s culture which is made up of collaboration between faculty/staff and students and supports the development of personal connections between members and supporters. Finally, I discuss the importance of outside support and organizational learning to HEIF’s success.

The organizational structure and culture of an organization can help or hinder its success. Speaking with the members of the HEIF committee, and from my own observations, HEIF’s structure and culture are a huge asset and have been instrumental in its success. Several interviewees felt that the organization itself is a success and a testament to a style of organization unique in the bureaucratic university system. The aspects of HEIF that make it unique are its multistakeholder representation, its emphasis on an interdisciplinary approach to energy independence, its strong student leadership, and its support of collaboration on projects between students, faculty, and staff.

From an early stage, students realized that HEIF needed to include members from every aspect of the campus. “Well, the campus is a community, and it's made up of all those different groups, and so to just have one and not have the other means you haven’t included the full community.” Inclusion of multiple stakeholder groups acknowledges the importance and contribution of those groups in the everyday workings of the university, as well as in the committee. The three groups, staff, faculty, and students,
each play an essential role on the committee that is necessary for its success. As discussed in a previous section, three articles from the compilation *Sustainability on Campus*, also mentioned that a multistakeholder approach was important to the success of sustainability initiatives (Jahiel and Harper 2004, Jerman, Coull, Elzrman, and Schmidt 2004, Walker and Lawrence 2004).

Staff from Plant Operations were seen early on in the initiative process as important to include on the committee for their familiarity with the day to day workings of the university, their historical knowledge and ability to provide continuity to the organization because they generally hold their positions for a long time, and because any physical changes or additions to buildings must go through their department. A faculty member, referring back to the initial formation of the HEIF initiative, told me, “We determined that it made sense for it [the relationship with Plant Operations] to be very strong because so many other projects would need to be implemented by them if they weren’t brought in from the beginning, then there wouldn't be a way of successfully implementing those things.” The staff bring practical knowledge of the university and technical skills to the committee.

The faculty are also essential to the success of HEIF. They provide knowledge and expertise in their respective fields, they provide an interdisciplinary source of resources, and they are instrumental in providing a learning environment for students involved with HEIF. Faculty also have a connection to students through their classes, and can encourage them to turn their class work into a HEIF project.
Students are the third part of the committee and make up a majority of the voting members. Students bring youthful enthusiasm, idealism, and creativity to the committee and projects. The student majority creates a unique dynamic, different from other campus committees. According to committee members who have been on other campus organizations, the balance of faculty and staff to students on the HEIF committee is unique and allows both sides to have influence and power. “That synergy is actually really what makes HEIF, I think, really unique on campus and really effective. They each bring a really different perspective and a really valuable perspective to the community.”

While other organizations have "token" student or faculty members who have no real influence on the committee, HEIF has a balance of power written into its bylaws.

Not only is the committee made of various stakeholder groups, it is also an interdisciplinary group. The committee is structured to have a faculty representative from each college at the university, as well as from economics and an at-large faculty member. The student committee members have been primarily from environmental resource engineering and environmental science; however there have been students involved with art majors and other majors. The heavy emphasis on interdisciplinarity comes from the fact that all students pay into the HEIF fee, thus the committee feels that it should be open to all students. One student explained the interdisciplinary goals of HEIF; “this isn’t meant to be exclusive to those who have knowledge or interest in it. It’s for any student who wants to make a difference, or has an idea, or wants to help with it or, or is just curious.” An interdisciplinary approach to energy independence is important because there are both human and technical aspects to generating and conserving energy.
This is in line with Vucetich and colleagues’ (2010) discussion of the need for an interdisciplinary approach to sustainability mentioned in the literature review. Since a goal of the committee is to be open to projects from various disciplines, an interdisciplinary committee is essential to supporting that goal. Including multiple disciplines allows for the creation of more creative projects.

Student leadership is another aspect of the organizational culture that has been essential to the formation and success of HEIF. The initiative was first envisioned by a student, it was then developed and supported by students at CCAT and the Associated Students, and it was a small group of dedicated students who kept the momentum alive after the HEIF initiative passed the student vote in 2004 until its initiation in 2007.

After the committee was formed, student leadership was still important. The student majority on the committee requires a student co-chair that is driven and committed. Without this, the committee could stall out and become stagnant. When asked about what HEIF does well, a student responded; “…it’s pretty inspirational. Students came up with the idea, students drive it, students staff it, students vote on it, students make what HEIF looks like every year.”

In line with the idea that students are the true leaders of HEIF, several of the staff and faculty prefer to take a backseat approach in the committee and feel they are there simply to support the students’ creative process. Thus faculty and staff are resistant to take the lead, but would prefer to support the decisions of the student leaders. Outside the committee, students who propose projects also need to be dedicated enough to see the
project through revisions and installation. The more involved students are the better the outcome.

A natural consequence of multistakeholder participation and student learning is the collaboration between staff and faculty with students. This collaboration exists not only on the committee and as part of the project proposals, but was also apparent in the initial stages of the HEIF proposal. Early on, students realized that they would need not only buy in, but support from faculty and staff in order to be successful. Michael Winkler developed his original idea and calculations for HEIF with the help of Bob Schultz, former chief architect of the CSU system and director of fiscal services at HSU. The initiative also had support from faculty. Arne Jacobson from Environmental Resource Engineering advised students as they were negotiating with Plant Operations about the details of the initiative and Steve Hackett from Economics went to several meetings with Michael Winkler to sell the merits of the initiative to the university president.

Since the creation of the formal organization, this type of collaboration has continued. In the original project proposal process, faculty and staff were available during the initial brainstorming sessions to help develop ideas, and at a follow up meeting to review proposals for accuracy before the final submission. Now the amount of collaboration has increased with the hiring of student groups. Each interdisciplinary student group is assigned two to three faculty and staff advisors to help with the development of a proposal over the time of a semester or more. Students have also begun to work with other staff in Plant Operations, such as plumbers, electricians, and
engineers, who are not on the HEIF committee. One committee member commented on this new collaboration:

“I saw building engineers not know why students were contacting them about certain things and so I started to help facilitate that a little more and other people on the committee did as well and now when students contact Plant Operations folks or building engineers and they say they’re working on something with HEIF there’s usually an instant recognition of, ‘ok I want to provide you this information and I’ll make time to do it and I know something good will come out of it.’”

Staff, who were previously unfamiliar with working with students, are now happy to collaborate and share their ideas with students who are working for HEIF. The organization has developed credibility and rapport with the staff of Plant Operations, which helps facilitate staff/student collaboration.

Something I found to be very important to the success of HEIF is the importance of outside support; which was instrumental in the creation of the organization and in the project proposal process, and something that was mentioned repeatedly by almost everyone interviewed. This support comes in the form of support from the administration, support from Plant Operations, support from faculty, popular support of HEIF by students, and most importantly support from student organizations on campus.

Universities are bureaucratic organizations and high level administrators hold a lot of power. The HEIF initiative would never have been approved if it did not have the support of the president of the university. The chancellor of the CSU system has ultimate control over all the universities in the system and it was President Richmond's endorsement of the initiative to the chancellor, combined with a brief economic upturn, which convinced the chancellor to approve the student fee increase. His support was
instrumental in getting HEIF created, and his continued support of the organization has led to the approval of the reinvestment fund, which allows for a percentage of the savings created by HEIF projects to return to HEIF for a set time frame. This new agreement is evidence of the trust and support the university's administration has for HEIF. The importance of a supportive administration was mentioned by both Henson and colleagues (2007) and Velasquez and colleagues (2005).

Plant Operations has also been an important supporter of HEIF. There have been several projects that have been made possible because of co-funding from Plant Operations. The project to relight the Redwood Bowl was co-funded by Plant Operations, with HEIF paying the premium for new bulbs that were more energy efficient. This project collaboration worked well because Plant Operations was already looking into replacing the light poles because they were decaying. With HEIF’s support Plant Operations was able to remove the old poles, replace them with half as many poles, and reduce the number of lights and the energy use. Without this collaboration, the Redwood Bowl lighting would simply have been replaced with the same fixtures and bulbs.

Another project that HEIF and Plant Operations worked on together was the retrofit to the Science D heating, ventilation, and air conditioning (HVAC) system. While this project has yet to be completed, the collaboration on funding between HEIF, Plant Operations, and PG&E is what made the project even possible.

Faculty have also been a supportive force for HEIF. Several faculty members have included HEIF projects into their class work or encouraged students to submit their
class projects to HEIF for implementation. As the old proposal process was very time consuming and detailed, it was through class work, at the undergraduate and graduate level, that several projects were developed and submitted to HEIF, including the relighting of the Redwood Bowl and the Science D HVAC retrofit. Ann Alter, from the film department, also included a HEIF video project in her curriculum one semester.

Support for HEIF by HSU students has really taken this organization from an ideal to a reality. When HEIF was an AS initiative the students voted to support it by 86%. Since that vote, continued student support of this idea has made it possible. In the time between the vote and approval, student support was the only thing that kept the initiative alive. Talking about that period before the initiative was approved, a student said, “we just had this policy that people loved and that we were kind of enchanted with. And anytime we got out and spoke to people, it was always easy to get people excited about it. So, really, we were kind of just banking on sort of the integrity of the policy.” HEIF was a popular idea and that is what gave the organizing students the encouragement and support they needed to carry it through those very tough times and on to successful creation. It was support by the student population that convinced the university president and the chancellor that HEIF was a good idea and finally got it approved.

Last, and probably most important, student campus organizations have been instrumental in the success of HEIF. In the initial stages, Michael Winkler took his idea to the Campus Center for Appropriate Technology (CCAT) because he felt it was an ideal place to find support. CCAT co-directors at the time, April Armstrong and Eddie Tanner,
helped Winkler to develop the HEIF initiative and added the student learning aspects to the initiative.

“And, Eddie and April both thought that CCAT is something that is active hands-on student involvement. So they both thought that rather than just having physical services put in the equipment of various kinds, there should be more active student involvement. And, students should actually be making proposals and designing equipment and maybe possibly being involved in installing equipment. So that it would be more of a learning experience for students.”

The CCAT mission really shaped HEIF’s mission and goals and developed the idea from a fee that would be used to invest in energy conservation and production infrastructure towards a student led committee structure focused on student learning and student led projects. They also created a place on the committee for a CCAT designee. They are currently the only student organization with a specific voting position on the HEIF committee.

After the creation of HEIF, CCAT and other student organizations were instrumental in providing the first, and often best, project proposals to the committee. The Renewable Energy Student Union (RESU) proposed the solar panel installation on the old music building, which was the first project funded by HEIF, and students from Green Campus worked on the proposal for the relighting of the Redwood Bowl. Students from these three organizations have proposed a number of projects and have dominated the proposal process. While CCAT is more interdisciplinary, RESU is made up of graduate and undergraduate engineering students, and Green Campus is made up of mostly environmental science students. These groups provide a structure for students to
get together and work on these project proposals and create the product that the HEIF committee was looking for in the original proposal process.

“Another thing that made projects really strong was collaboration. So… a really strong organization that was going to back it that we were like, ‘Ok, they already have the experience.’ Like green campus projects, we were like ‘they have all of those co-directors who have been in those positions for a while. They have a leadership structure.’ We know that, if they want to pull off a project, that they have that institutional capacity.”

Without these organizations, HEIF would have struggled, more than they have, getting project proposals, and probably would have had to reevaluate their proposal process earlier on. The existence and support from these student organizations has allowed HEIF some success in its early years and given it time to learn and evaluate its proposal process. These student organizations have also provided dedicated students for HEIF’s board.

Several interviewees mentioned that personal connections were an important part of their experience with HEIF. Personal connections are both a tool and a benefit. On the one hand, personal connections between faculty and students have helped in HEIF’s success. In the early development of the initiative, students reached out to faculty to help in the development of the initiative and to request a show of support when appealing to the president. After HEIF was created and started accepting proposals, faculty on the board were able to reach out through personal connections with students and encourage them to submit proposals.

On the other hand, faculty, staff, and students have mentioned the positive benefits of forming new connections through the committee process. Students get to
interact with faculty and staff on an equal playing field as colleagues and get to know an entirely different side of them and form strong and lasting relationships. Staff and faculty also expressed that one of the things they enjoyed the most about HEIF was the ability to meet students and form relationships with them.

“To me that’s the most rewarding part of this is interacting with the students. You’re just interacting with just wonderful, great students that are engaged and want to do something, want to make a difference… You know the campus is kind of like your home, and it’s nice when you can walk on campus, for me as a staff member, to see a student and say hi and talk to them. It really gives you a sense of being and improves your quality of life at the most basic level.”

One of the most important aspects of the HEIF organizational culture and structure is its ability to learn. Organizational learning has been very important over the years since its creation. Trying new things and changing things that don't work is what makes HEIF an organization that will be able to progress and survive long into the future. These changes would be qualified as small changes within an organizational type due to the lack of necessity and the limitations put on the organization by the university, the organization’s funding source, and its multistakeholder requirements (Greenwood and Hinnings 1993). At its inception, the appointed members of the committee had the opportunity to create their mission, bylaws, and the project proposal process. This process of organizational creation was a huge challenge and learning opportunity for everyone involved. It required balancing organization creation with actually funding projects and getting the organization moving and functioning. The committee members realized early on that this would be a learning process throughout; there were few other similar green fund programs up and running at the time, and even fewer, if any, that had
such a significant emphasis on student involvement. The HEIF committee has a structure and culture similar to the learning organizational structures mentioned earlier in the literature review (Burns and Stalker 1961, Orr 2004), this makes it capable of innovation and change. “Because it is a student led committee, as a voting majority, it can continue to evolve and change where needed and the students have that power to be able to lead that.” Going into the process with a mindset of learning, the committee members are always evaluating how the processes in the organization are working and relating that back to the goals.

This emphasis on learning has led to reviewing and updating the bylaws twice since their creation. The first revision was in 2009 and included the addition of a clause about conflict of interest in voting. This was something that the committee had been doing, but had not yet integrated into the bylaws. The most recent changes to the bylaws were initiated because of a change in personnel. One of the named staff positions on the committee is the energy manager position; however this position had been unfilled due to lack of funds when the committee was created, so the sustainability coordinator for the university was appointed to the committee to fill that position. Last year, Silas Biggin was hired as the energy manager and the committee decided that the sustainability coordinator was an important position to include on the committee, so added it as a new staff voting position. To keep a student majority they also added a student voting position. While reviewing the bylaws, the committee also began to discuss other changes that needed to be made to the bylaws. There are currently discussions going on about
term limits for faculty positions and staggering the appointment of student members by the Associated Students in order to better maintain organizational continuity.

HEIF has also gone through a huge learning process with its project proposal process. Through discussions about the success of HEIF and a review of its goals, members of the committee felt like the process was not successful and needed to be changed. There were several reasons that the committee felt a change was needed. Many members of the committee felt that the proposal process was too demanding for students. Only a small number of students had the skill set, time and motivation to create project proposals to the specifications that were laid out. As a result, the committee was not getting very many good proposals to choose from every semester. Even when they did get well laid-out projects, the costs were always an issue. One of the student co-chairs told me that the budgets of all the projects that had been approved while he was there had gone over budget. This is due to a lack of knowledge on the part of the students about the real costs of operating on a university campus. Several committee members also felt that the organization's approach to energy independence was ineffective. By waiting for projects to come to them, progress was sporadic and unorganized. They wanted bigger projects that would make bigger strides towards the goal of energy independence. Most of the proposals were for smaller projects and smaller costs than the committee wanted to approve. This is due to the possible lack of knowledge students have about the opportunities on campus for savings, as well as the time and effort it takes to develop such large proposals. A faculty member explained it as, “I just think that it is incumbent on us to think of ourselves as the people promoting energy independence rather than the
people providing money to other people who are promoting energy independence.” The committee felt that they needed more control over the proposal development because of their strategic vision, as well as wanting to assist students in the difficult task they were being asked to do. Finally, many members felt that the proposal process was limiting the types of students that could be involved. The original vision of the HEIF developers was a very open and interdisciplinary opportunity for student learning, yet almost all of the proposals had been from engineering and environmental science students. The committee wanted to be able to include more students and increase the interdisciplinarity of student participants. The change in the proposal process reflects a philosophical shift about the role of the committee members, however in its application this is still a small procedural change that did not change the structure, culture, or goals of the organization (Greenwood and Hinnings 2003).

Since the change in the project proposal process, the learning has continued. The committee has struggled to find a good balance between student leadership and mentor involvement. A faculty member on the committee discussed with me how he though the new proposal process was going.

“I think there have been a few growing things with just trying to figure out what exactly is the right mix of mentorship and student's freedom and creativity to take things in different directions, and I think we're settling on a role... or a framework that involves, for at least a number of the projects, a really strong role for mentorship, a pretty active role for the mentors working with a group of students, and I think that that's working a little bit better than the way that we did it last year... I think we're moving into a better way of doing that this time. And I think it's a normal process. You try something, you examine it, you make some improvements and it gets better.”
There are also some concerns from previous student HEIF leaders that the process is slower, that it can remove the development of the idea from the person who came up with it, and that hired students may be less passionate about projects than students who were willing to put their own time into developing them, as in the original process.

“And then also, I was always kind of in a little bit of mixed minds about this new process, because what ends up happening is we involve a lot more students and a lot more money in making proposals, and things like that. And it kind of just pushes it off, you know? It gets us a little bit farther away before the project actually really starts happening, you know? And you’re also getting once removed from the people who are really passionate about the idea, to the people who pulled together the proposal.”

Since the initiation of the new proposal process a lot of learning and adjusting has happened and the feeling from the committee is that it may take a few years to perfect this new process, but there are high hopes that this is an improvement on the old process. Defining the project proposal process and requirements is essential for measuring the projects’, and the organization’s, success.

Success

HEIF measures success through student participation, student learning, energy saved and energy produced. Student participation and energy savings are numbers that can be measured, however student learning is a variable that is much harder to quantify, yet is viewed as a success. Other successes include the organizational culture and structure, the reinvestment agreement with the president, and the intrinsic value organization itself as an asset to the campus. These successes ensure the continuation of
HEIF, they also bring positive attention to the organization which helps attract student, faculty, and staff participants and supporters.

Student learning and participation has been an important goal of HEIF since the beginning of the initiative. Since the HEIF committee was created in 2007 until 2011, fifty-five students have either sat on the HEIF committee or submitted projects. While it is difficult to measure the amount of learning that was a result of the students’ experience with HEIF, the feeling from students was that it was an important learning opportunity that helped to prepare them for the future. When asked about their experience with HEIF, students said:

- “I was grateful for the opportunities that HEIF provided me and has provided for so many other students.”
- “…it was a really good learning experience, and even developed my political skills in how to run a successful political campaign.”
- “Personally, it’s helped my communication. You know, not [to] be intimidated by administrators or people in authority positions.”
- “A very valuable experience for anyone.”

Faculty also felt that the student learning component of HEIF was one of its finest qualities and greatest achievements. “For me, I think it’s probably the greatest accomplishment of HEIF… it’s been a great training ground for students. I’ve seen a bunch of students come through this program and then go out into the post-college world and do great things.” Several students who worked on the original HEIF initiative also mentioned that just HEIF’s existence is a testament to the potential of students to change things on campus and make a real impact.

“Well, I think it is a good example of what is possible for students on campuses. If there's something that even one student or a group of students feel strongly about and that they want to see happen on campus, that it's possible. I mean, it's
difficult. It takes many years, it takes a lot of persistence, but it shows that it's really possible.”

The consensus from everyone interviewed was that HEIF has been extremely successful in the area of student learning, and the students who have participated, especially the student co-chairs, have done a lot of growing and have gone on to do great things.

As mentioned previously, energy saving and production is the overarching mission of HEIF and moving towards energy independence is essential to viewing the organization as successful. Numerically, HEIF has approved sixteen projects from spring 2008 to spring 2011, fourteen of which have been implemented. These fourteen projects have saved a total of 81,459 kWh of electricity and 100 therms of natural gas. To explain these numbers better, this is equivalent to running 550 refrigerators for a month and running a natural gas fireplace for eight hours, respectively. The two most frequently mentioned successful projects were the solar panels on the old music building, and the relighting of the Redwood Bowl. These projects were considered successful because they were developed from students and faculty collaboration, they save a significant amount of energy, and they were very visible projects that promoted HEIF. The solar project also allowed for student implementation and the relighting project allowed for co-funding from Plant Operations, both measures of success.

In terms of money savings, the reinvestment agreement recently signed with President Richmond is a success and a huge step towards energy independence. The reinvestment of monetary savings from HEIF projects back into the fund was a goal of
the original HEIF initiative, but was never instituted. With the signing of this agreement, 50% of the energy savings from projects with verifiable savings will be returned to the HEIF budget for a three year period. This is a great success not only because it will build momentum for the organization to invest in more projects, but it is also the realization of a goal of the original HEIF proposal.

The organizational structure and culture of the HEIF committee were also mentioned as successes. The structure provided meaningful student participation and connected diverse stakeholders from across the campus. Especially important, has been the connections made with the staff at Plant Operations. One staff member mentioned:

“I think that the thing that the HEIF committee has done really well, that I don’t know had really occurred much or had the same kind of … trust or involvement prior to HEIF being around, is the operations folks of the campus are put in contact with students now to develop projects and to seek information about how to change things on campus, and the facilities folks are asked their opinion on how to change things on campus.”

Not only has the committee empowered students to take charge, but it has also empowered staff members who were largely ignored by the rest of the campus community by treating them as experts and asking for their help and opinions.

The organizational culture on the committee is described as a positive, friendly atmosphere, where all participants treat each other as equals. This culture is based on the assumption that everyone has something important to contribute, no matter the background or experience of the individual. The organization’s willingness to learn from its mistakes and challenges is also attributed to its organizational culture. The people who were first appointed to the committee and created the bylaws really set the tone for
how the committee would function in the future. One faculty member said of the committee:

“HEIF is also about demonstrating the ability to form partnerships on campus in a non-standard organization… You know, the CSU is such a bureaucratic organization that when you see something creative like this happening, and that they’ve been successful in implementing projects, and that it was something that students demonstrated, at least at first, support for, to me that makes it really exciting. It’s really special. It’s something to be proud of.”

I found that a number of faculty and staff interviewees were similarly very proud to be a part of HEIF and believed it to be a unique and creative project.

HEIF is an asset to HSU. HSU claims to be a “green” school as well as a place where students can gain hands on experience. HEIF combines both of these goals by providing opportunities for student participation on projects that save energy. They connect learning with application. The HSU energy manager position, a relatively new position, is also assisted by HEIF. The energy manager and HEIF work on related projects and frequently assist each other in identifying energy issues and resolving them.

Overall, everyone I interviewed felt that HEIF was successful, was a good use of student funds, and deserved to continue as a program. While they were all supportive of HEIF’s continued existence, they did all have suggestions for its improvement.

Improvements Needed

While HEIF is considered a huge success in a number of ways, there are still improvements to be made. Interviewees had a number of suggestions for HEIF’s
improvement, many of which had already been part of committee discussions and are in the process of being implemented.

The first improvement is strategic thinking. Several faculty members mentioned to me that to achieve the goal of energy independence, the committee needs to take a more hands on and strategic approach towards energy saving and generation. This is congruent with the suggestions of Kurland (2011) and Henson et al (2007). Expressing this idea, one faculty member told me he thinks, “[what] we really need to do is make sure that we devote more time to sort of big picture, strategic vision, to make sure that we feel like we're headed in the right direction,” and another faculty member said, “There is no reason why the committee itself can't identify priorities… because the group of us collectively has a lot of experience around these kinds of issues on campus.” The committee has made some strides in this by taking a more hands on approach to putting teams of students together and including more faculty and staff mentoring of students, however the feeling was that this was not sufficient enough. One aspect of strategic thinking is how the committee defines itself. A committee member voiced his concern that HEIF used to, and perhaps still does, think of itself as a granting agency. He felt that “it is incumbent on us to think of ourselves as the people promoting energy independence rather than the people providing money to other people who are promoting energy independence.” Another component of how the committee defines itself is its mission. A few people informed me that they felt that HEIF’s focus on energy, as opposed to a broader term such as sustainability, limited the types of projects that they can fund and
the type of students that can participate. The level of aversion to the energy focus varied, and not all interviewees felt that the mission should be changed.

Projects are another place where improvements are needed. Follow up and evaluation of implemented projects has been something that the committee has not kept up on. This lack of oversight has been largely due to a lack of time and staffing to follow up on projects. A number of projects, such as the high pressure air hand dryers, were approved on a trial basis. These projects need to be evaluated for their level of success and then implemented campus wide. There are also a number of projects that were approved for funding, but have yet to be implemented. This is due to unforeseen challenges that arose in the implementation process. These projects need to be revisited and, hopefully, implemented. The committee has decided to hire a second student staff member whose job will hopefully be only evaluating previous projects. The key will be to keep this student focused on that task and not diverting energy to other needs.

Related to projects, the general consensus from the interviewees was that the committee would like to include more interdisciplinary faculty, students, and projects. A lack of interdisciplinary collaboration is a common challenge seen in the literature (Henson et al 2007, Kurland 2011, Shriberg 2002, Velazquez et al 2005). While this is a goal, the committee still has to work out specifically how to create a structure that facilitates behavioral science projects, and social science and humanities student involvement. One staff member also expressed concern that there was not enough racial diversity represented on the committee. Attracting female students has not been an issue
in the past, but the committee may want to think about how to attract more student from minority groups so that the organization is more representative of the student population.

A final recommendation from interviewees was the need for raising awareness of students and faculty to get the campus community more involved with HEIF. Tabling, flyers, and presentations in classrooms were all suggested to inform students about HEIF. This has been the job of the HEIF staff member, and each student who has held the position has made promotion of the organization an important goal every semester, but without a lot of resources. This improvement may need to be included in the strategic plan of the committee if it is going to be effective.
CHAPTER 5 DISCUSSION & CONCLUSION

The results, presented in the prior section, will be synthesized as general findings on the best practices of Humboldt Energy Independence Fund (HEIF). This will be followed by recommendations that summarize lessons learned by committee members and my own recommendations for HEIF in the future and a conclusion.

Best Practices

HEIF has become a successful organization since it was originally imagined in 2000. The aspects that have made it successful are student leadership, outside support, a collaborative multistakeholder approach, an organizational culture of learning, and a focus on student participation and learning.

Student leadership

Without student leadership, HEIF would never have been possible. It was envisioned by students, who carried this initiative for seven years, withstanding a lack of support from the CSU Chancellor, multiple waves of student turnover, and student uncertainty about the ultimate successful acceptance of the initiative. It was student persistence that kept the vision of HEIF alive until the time came when it was approved by the chancellor and president of the university.

Even after the creation of the committee, student leadership has continued to be essential to HEIF’s success. The faculty and staff members on the committee see HEIF
as a student led organization, and prefer to let the students, especially the student co-
chair, guide the direction of the meetings and decisions. HEIF’s recent agreement with
the president to keep a percentage of the energy savings of their projects was spearheaded
by one of the student co-chairs. The idea had been around since the beginning of HEIF;
however it took a student to bring it back to the forefront and make it happen.

Student leadership is also important in the project process. To be able to fund
projects, HEIF needs motivated students to submit projects and ideas. They want, and
need, to hire students who are passionate about saving energy and about making a
difference on their campus. Without that student dedication to make a difference, HEIF
would not be successful.

Outside support

HEIF has received support from a number of areas of campus, however three
supporters have been especially essential to HEIF’s success; the administration, Plant
Operations, and student clubs.

As mentioned in previous literature (Sharp 2002), the university is a bureaucratic
structure where administrators have power over the changes that happen on campus.
Without the agreement of the chancellor and the support of the university president, HEIF
would never have been anything more than an idea on a piece of paper. The continued
support of the president for the energy savings and student learning that occur through
HEIF are what make HEIF able to continue.
The buy-in and support of Plant Operations has been important to the success of HEIF because the department handles all physical changes and equipment installations on campus. Students realized early on that they were going to need the support of Plant Operations and that is why the head of facilities management is designated as the co-chair of the HEIF committee. The support of Plant Operations has been important in understanding how the university runs, as a source of student mentors, and as a resource for collaboration on projects.

Student clubs have been an important source of support that I did not expect when I began this research. The role of student clubs was not mentioned in any of the literature. Due to the location and environmental focus of the university, there are a number of student clubs with environmental focuses. Green Campus, the Campus Center for Appropriate Technology, and the Renewable Energy Student Union are clubs that have all been instrumental to HEIF’s success because they provide a structure for students to meet and work on project proposals. They also provide a location for students from different years of study, including graduate and undergraduate students, and different fields of study (occasionally) to work together. These groups provided most of the projects funded by HEIF since it began accepting projects in spring 2008 and without their support HEIF may not have been successful.

Organizational structure

In line with the literature (McNamara 2008, Sharp 2002), a multistakeholder committee structure has contributed to the success of HEIF. Students, faculty, and staff
each bring a different energy and expertise to the organization which helps it succeed. The emphasis on collaboration is also important. Several people I interviewed mentioned the adversarial relationship that often exists between stakeholder groups on campus, but on the committee these issues do not arise. Everyone I talked to told me that the atmosphere during meetings is very friendly and cooperative, and everyone works together. It is that collaboration which makes the projects so successful and contributes to the student learning.

Culture of learning

Organizational learning is essential to the success of HEIF. When the organization came across challenges, the committee members were able to evaluate them in reference to their mission and goals and make small changes. Without an organizational structure and culture that allowed for change, the organization would have likely failed and been disbanded (Burns and Stalker 1961, Orr 2004, Smith and Sharicz 2011). While there is not a formal reevaluation process built into the organization, many of the faculty and staff committee members have been there since the beginning of the organization and recognized at its formation that this would be a learning process. While there are now a number of green funds at other campuses, each campus is unique in its campus population, fund size, committee and organizational structure, and challenges, so there is some learning that must occur for every green fund. The constant influx of new students onto the committee also lends itself to the learning and growth of the organization by bringing new ideas into the committee.
Student learning

The goal of student learning presents unique opportunities for HEIF because it requires the committee to look at its mission of energy saving from a different perspective. Seeing energy saving through the lens of student participation and learning, HEIF is able to innovate on how to achieve both of these goals together. Being an institution of higher learning, it seems appropriate that campus programs focus on how they can increase student learning and knowledge. While these dual goals have presented a challenge to the committee on several occasions, student learning has actually been one of HEIF’s greatest achievements, according to a number of committee members. Focusing on student learning as a goal allows for another measure of success; while it may not seem like the organization has made huge advances towards energy independence, it has provided a large amount of student learning along the way. As HEIF hits its stride and settles on a project proposal process that best supports both learning and energy savings, I believe both goals will advance quickly.

Recommendations

Based on the interviews with committee members, as well as the literature, there are a number of recommendations I propose to help HEIF better achieve its goals.

The first recommendation is to include more social science and humanities faculty on the committee. The desire of the committee in changing the project proposal process was to encourage more interdisciplinary projects. However several committee members also mentioned that it has been a challenge to measure the success of the few “soft
science” projects they have received. Including more social science and humanities faculty on the committee will help in a number of ways. It will provide expertise for evaluating interdisciplinary projects, it will provide different mentors for students, and it creates a new connection to a different campus population because the new faculty will be able to encourage their students to submit projects. If the committee wants students from different disciplines to participate, they need to have faculty from different disciplines on their committee.

The second recommendation is to better educate new committee members on the history and process of HEIF. As new committee members are added to the committee, it will be important to explain the history of HEIF, where it has come from, where it is going, and how the committee process works. That way, time will not be wasted during committee meetings explaining how things work, and more will be accomplished because the new committee members will be able to contribute to the process.

The third recommendation is to have more follow-up on completed projects. This has become especially important now that HEIF can recover funds from their projects, but only if they can measure the energy savings. Some of this may already be resolved with the addition of a second HEIF staff member, which is set to be added next semester. However, as the number of projects and teams HEIF works with increases, the number of support staff may need to increase in the future.

The fourth recommendation is to increase meeting lengths or the number of meetings. HEIF has a lot of business to cover, and the number of projects approved each semester is growing. There is not always enough time to discuss everything that needs to
be covered. Increasing the meetings to once a week, or increasing the meeting length to two hours will probably be necessary in the near future.

The fifth recommendation is to pursue one of the goals of HEIF, which is to better incorporate HEIF projects into curriculums. There needs to be a push to talk with faculty and support them in doing projects in their classrooms that could be funded by HEIF. This would also encourage faculty who are not directly connected with HEIF to get involved and encourage their students to apply for jobs with HEIF and submit projects. This might be something that the HEIF support staff works on in the future.

Lastly, the sixth recommendation is to reevaluate the HEIF goal of being energy independent by 2043. This goal was based on HEIF beginning in 2004 and required that all energy savings be reinvested back into the fund. The new realities of the HEIF fund need to be taken into consideration and a new, more realistic goal needs to be set. Setting a new goal would be a good opportunity for the committee to evaluate how they are proceeding and setting a more realistic goal would allow them to see that progress. The 2043 goal may cause undue stress on the committee because it gives the impression that they are not making enough progress, but that prediction was made years before HEIF was even created.

Conclusion

In conclusion, by using organizational change theory I was able to analyze the successes, tools for success, and challenges of Humboldt Energy Independence Fund (HEIF). I was able to identify best practices for a green fund, and opportunities for
HEIF’s improvement. The results indicate that a green fund overseen by a multistakeholder organization which values interdisciplinarity, student leadership, collaboration, and organizational learning is effective at reaching its goals and overcoming obstacles. Future research could study other green funds and compare how the different size, location, history, and funding source of the fund influences the organizational structure and culture of the fund oversight entity.
REFERENCES


APPENDIX A
INTERVIEW MATERIALS

HEIF Interview Questions
Questions for students, faculty, and staff
(Depending on current or past affiliation status, some of these questions may be omitted)

Introduction
1. What is your name, job title, how are you connected to HEIF, do you have a title?
2. In your own words, what is the purpose/mission of HEIF?
   How long were you involved/have you been involved with HEIF?

History
3. What year was the student green fee first proposed? Tell me about the process it went through.
4. Was there a precedent or prior pilot projects that influenced the creation of this fee?
5. Who made the final approval of this financial mechanism in your institution (i.e. Board of Trustees, senior administration, etc.)?
6. Who was opposed to the green fee? What were the concerns? How were these overcome?
7. What year was the student fee first collected?
8. What lessons have been learned about the creation of a green fund? What worked well and what didn’t?
9. If you had it to do over again, what would you do differently?

Decision makers
10. Who is on the HEIF committee (i.e. the number of students, staff, faculty, administrators, voting and nonvoting, involved in this group)?
11. What are the role(s) within this decision making group?
12. Are these representatives appointed and how long is their appointment?
13. How often does this decision making group meet?
14. Does this group make final decisions on projects or do they make recommendations to a senior administrator for final approval?
15. Are there any other influences on board decision making?
16. Is there a charter or bylaw that this group abides by?
17. Why were the bylaws being rewritten recently?
18. What lessons have been learned in regards to the decision making committee?
   What works well, what could be improved?

Project selection process
19. How are project proposals solicited (i.e. informational meetings, brochures, newspapers, radio, online, etc.)? How often?
20. Are applicants allowed to apply for funding that address any sustainability issue on campus? (ie. Environment, economics, culture. environmental justice issues?)
21. What are the steps involved in selecting, approving, funding, and implementing proposed projects? Please describe this process.
22. Tell me about the criterion that the board uses to select projects?
23. Has this process changed over time?
24. What were the lessons learned during the project selection process by you and/or the decision making group?

Implementation and Evaluation process
25. How is the money distributed for approved projects?
26. How is the green fund budget monitored?
27. If the projects succeed in reducing energy costs, are these savings reinvested?
28. How are project leaders held accountable for the outcome of their projects?
29. What metrics are used to evaluate these projects?
30. How often is the public informed about these projects?
31. Tell me about a very successful project, and what has been a less successful one? Why?

Concluding thoughts
32. What have been some of the challenges/learning experiences/issues HEIF has faced?
33. Do you feel that HEIF has been successful as a program? Why or why not?
34. How could HEIF be improved? What parts should be preserved in their current state?
35. What advice do you have for other groups starting student fees on their campuses?

Questions for the administrator
36. What were your initial thoughts and concerns about the HEIF proposal when it was first brought to you? Did that change after the student vote?
37. What was the cause of the delay in instituting HEIF after the student vote? Was there opposition, and where did it come from? Was there support for it, where did that come from?
38. What was the Chancellor’s stance?
39. What changed that allowed for the eventual creation of the HEIF committee?
40. How did you originally envision HEIF would function?
41. What do you feel is the purpose of HEIF?
42. What is the most successful project funded by HEIF, or which is your favorite project?
43. If you are familiar with the recent change in how HEIF asks for project proposals and manages student projects, do you feel like this is a positive change?
44. What does the signing of the savings reinvestment contract with HEIF mean for the university? I believe this was part of the original proposal, why has it taken this long to come to this agreement?
45. What kind of projects would you like to see HEIF fund in the future?
46. Do you feel like HEIF is successful? Please explain.
47. How do you feel HEIF could be improved?
48. What do you feel is HEIF’s greatest achievement?

Follow up questions (Any of the questions may be followed with one of the following)
1. What do you mean?
2. Can you explain that further?
3. Please elaborate.
4. Can you give me an example?
APPENDIX B
PRIMARY DOCUMENTS

Following is a list of documents used to develop this thesis:

- 2007 Bylaws
- 2009 Bylaws
- 2012 Bylaws
- 2007-2008 Annual Report
- 2008-2009 Annual Report
- 2009-2010 Annual Report
- 2010-2011 Annual Report
- Request For Proposal (old process)
- Idea Paper (new process)
- Reinvestment Agreement
- Press release about the 2004 student vote on the HEIF initiative
APPENDIX C
HANDOUTS

Plan for setting up a green fund

- Find out if students are interested in a green fund
  - Awareness raising
  - Tabling in the quad
  - Article in the campus newspaper
- Discuss the idea with administration
  - Find out their level of commitment
  - How is the administration willing to support the green fund?
- Share the idea with the Plant Operations/Facilities department on your campus
  - Are they supportive and willing to participate?
- Gather a “core team” of students, faculty, staff and administrators to discuss the details of the green fund
  - What is the goal(s) of the fund?
  - Where will the money come from?
  - What will the oversight committee look like?
  - What type of projects might be funded?
  - Who will propose them?
  - Who will implement them?
- The green fund will be shaped by:
  - The characteristics of your campus (size, population, location, administration’s dedication to sustainability, student support of sustainability) as well as
  - The source of funding (funds from the university, outside donations, endowment, pre-existing utility savings, student fee)
  - The funding type: (projects must repay their funding investments or not)
- If money is coming from students, a student vote should be held to determine support for the green fund
- A general proposal should be brought to the administration for approval
- Once approved, form the multistakeholder committee
  - Develop bylaws
  - Develop a process for soliciting and evaluating projects
  - Develop a process for following up on implemented projects
- For best results, your green fund should have the following characteristics:
  - A collaborative, interdisciplinary multistakeholder approach
  - An organizational structure and culture of learning
  - Student leadership
  - Support from the campus community
### Student-Driven Energy Independence: A Case Study of Humboldt Energy Independence Fund

Rachelle Irby Department of Sociology Masters Thesis, Spring 2012

<table>
<thead>
<tr>
<th>Interviews</th>
<th>Research Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews:18</td>
<td>History of HEIF</td>
</tr>
<tr>
<td>Students:8</td>
<td>Document how HEIF runs</td>
</tr>
<tr>
<td>Faculty:5</td>
<td>Its successes and challenges</td>
</tr>
<tr>
<td>Staff:4</td>
<td>Offer recommendations for its improvement</td>
</tr>
<tr>
<td>Administrators:1</td>
<td>Identify best practices for replication at other colleges and universities</td>
</tr>
</tbody>
</table>

#### Themes

1. Goals
2. Measuring Success
3. Challenges
4. Organizational Structure & Culture
5. Success
6. Improvements Needed

#### Goals
- Energy goals
- Student learning goals

#### Measuring Success
- Energy saved
- Energy produced
- Student participation
- Student learning

#### Challenges
- Fast student turnover
- Time
- University’s budget
- Measuring outcomes of “soft science” projects
- Tuition increases
- Recovering investments
- Grant proposal design/not getting enough proposals
- Bureaucracy
  - The university as a large, complex bureaucratic system
  - Barrier to sustainability efforts
  - Projects cost more and take longer on campus
  - Barrier to student involvement in implementation

#### Organizational Structure & Culture
- Student Leadership
- Multistakeholder approach
- Interdisciplinary
- Collaboration between faculty/staff and students
- Organizational Learning
  - Proposal process
  - Development of interdisciplinary projects
  - Bylaws
- Outside support
  - Administration
  - Faculty
  - Student clubs

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"But, the point is... energy is part of everyone’s lives. You can be involved in it. And, we can offer you some of the tools if you need them, but we all offer you the opportunities to try out your ideas" ~Student

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"I was grateful for the opportunities that HEIF provided me and has provided for so many other students" ~Student
<table>
<thead>
<tr>
<th>5. Success</th>
<th>“I think that the thing that the HEIF committee has done really well, that I don’t know had really occurred much or had the same kind of... trust or involvement prior to HEIF being around, is the operations folks of the campus are put in contact with students now to develop projects and to seek information about how to change things on campus, and the facilities folks are asked their opinion on how to change things on campus.” ~Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of projects approved: 16*</td>
<td></td>
</tr>
<tr>
<td>Energy saved: 81,459 kWh, 100 therms*</td>
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<tr>
<td>-Personal connections</td>
<td></td>
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<tr>
<td><strong>5. Success</strong></td>
<td><strong>6. Recommendations for Improvement</strong></td>
</tr>
<tr>
<td>Number of projects approved: 16*</td>
<td>-Include more social science and humanities faculty on the committee</td>
</tr>
<tr>
<td>Energy saved: 81,459 kWh, 100 therms*</td>
<td>-Different perspective</td>
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<tr>
<td>Student participants: 55*</td>
<td>-Personal connections to students</td>
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<tr>
<td>(*As of Spring 2011)</td>
<td>-Resources to evaluate non-engineering projects</td>
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<tr>
<td>-Testament to student’s ability to create change</td>
<td>-More follow up on completed projects</td>
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<tr>
<td>-Student learning that continues to influence their lives after graduation</td>
<td>-Better education of new committee members to the history and process of HEIF</td>
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<tr>
<td>-Opportunity for student service-learning</td>
<td>-Reevaluate the goal of energy independent by 2043, set a new goal</td>
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<tr>
<td>-A creative multistakeholder organization within a bureaucratic structure</td>
<td>-Increase meeting length or number of meetings</td>
</tr>
<tr>
<td>-Increased communication between university stakeholders</td>
<td>-Add more support staff</td>
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<tr>
<td>-Personal connections</td>
<td>-Incorporate HEIF into curriculums</td>
</tr>
<tr>
<td><strong>“I mean at the beginning of this conversation, I said that I saw the student learning component as sort of a secondary goal of HEIF. And I think in official terms, maybe that’s the way it’s written down. But, for me, I think it’s probably the greatest accomplishment of HEIF. It’s been a great training ground for students. ~Staff</strong></td>
<td><strong>“I think there’s more space for success though. There’s more that could be done, there’s more students that could be involved, there’s more projects that we can be doing, there’s more time we can be spending with the committee. As HEIF grows, as we involve more students, as we get more staff... HEIF will be only more successful” ~Student</strong></td>
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