

Eastern Illinois University
The Keep

Masters Theses

Student Theses & Publications

2016

Understanding the Management of Sustainability on One Public Midwestern College Campus

Eric Swinehart

Eastern Illinois University

This research is a product of the graduate program in [College Student Affairs](#) at Eastern Illinois University. [Find out more](#) about the program.

Recommended Citation

Swinehart, Eric, "Understanding the Management of Sustainability on One Public Midwestern College Campus" (2016). *Masters Theses*. 2461.

<https://thekeep.eiu.edu/theses/2461>

This is brought to you for free and open access by the Student Theses & Publications at The Keep. It has been accepted for inclusion in Masters Theses by an authorized administrator of The Keep. For more information, please contact tabruns@eiu.edu.

The Graduate School

EASTERN ILLINOIS UNIVERSITY



Thesis Maintenance and Reproduction Certificate

FOR: Graduate Candidates Completing Theses in Partial Fulfillment of the Degree
Graduate Faculty Advisors Directing the Theses


RE: Preservation, Reproduction, and Distribution of Thesis Research

Preserving, reproducing, and distributing thesis research is an important part of Booth Library's responsibility to provide access to scholarship. In order to further this goal, Booth Library makes all graduate theses completed as part of a degree program at Eastern Illinois University available for personal study, research, and other not-for-profit educational purposes. Under 17 U.S.C. § 108, the library may reproduce and distribute a copy without infringing on copyright; however, professional courtesy dictates that permission be requested from the author before doing so.

Your signatures affirm the following:

- The graduate candidate is the author of this thesis.
- The graduate candidate retains the copyright and intellectual property rights associated with the original research, creative activity, and intellectual or artistic content of the thesis.
- The graduate candidate certifies her/his compliance with federal copyright law (Title 17 of the U. S. Code) and her/his right to authorize reproduction and distribution of all copyrighted materials included in this thesis.
- The graduate candidate in consultation with the faculty advisor grants Booth Library the non-exclusive, perpetual right to make copies of the thesis freely and publicly available without restriction, by means of any current or successive technology, including by not limited to photocopying, microfilm, digitization, or internet.
- The graduate candidate acknowledges that by depositing her/his thesis with Booth Library, her/his work is available for viewing by the public and may be borrowed through the library's circulation and interlibrary loan departments, or accessed electronically.
- The graduate candidate waives the confidentiality provisions of the Family Educational Rights and Privacy Act (FERPA) (20 U. S. C. § 1232g; 34 CFR Part 99) with respect to the contents of the thesis and with respect to information concerning authorship of the thesis, including name and status as a student at Eastern Illinois University.

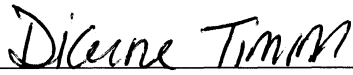
I have conferred with my graduate faculty advisor. My signature below indicates that I have read and agree with the above statements, and hereby give my permission to allow Booth Library to reproduce and distribute my thesis. My adviser's signature indicates concurrence to reproduce and distribute the thesis.



Printed Name

College Student Affairs

Graduate Degree Program

Faculty Adviser Signature _____


Printed Name

5-10-10

Date

Please submit in duplicate.

Understanding the Management of Sustainability on One Public
Midwestern College Campus

By
Eric Swinehart

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF

Master of Science in College Student Affairs

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY
CHARLESTON, ILLINOIS

2016
Year

I HEAREBY RECOMMEND THAT THIS THESIS BE ACCEPTED AS
FULFILLING THIS PART OF THE GRADUATE DEGREE CITED ABOVE

THESIS COMMITTEE CHAIR	<u>5-13-16</u> DATE	DEPARTMENT/SCHOOL HEAD	<u>5/16/15</u> DATE
THESIS COMMITTEE MEMBER	<u>5-16-16</u> DATE	THESIS COMMITTEE MEMBER	<u>5-13-16</u> DATE

ABSTRACT

Environmental sustainability is a substantial issue within our world today that is on the forefront of policy makers' minds. Implementation of sustainability initiatives on a college campus comes in many forms and different scales, which falls upon the question of who manages all the moving pieces to make these initiatives successful. This study was designed to gain an understanding of how administrators are defining and implementing environmental sustainability initiatives on their campus, to understand their role in managing these tasks. Using a qualitative approach, the researcher interviewed a purposeful sample of four higher education administrators from one public Midwestern university. The participants worked in areas of sustainability management, housing and dining services, faculty, and business affairs. Results showed that administrators have a basic knowledge and understanding to implement sustainability efforts. Participants discussed that to better manage sustainability efforts collaboration and student engagement which needs to be led by someone, thus showing the importance of a sustainability coordinator position within the university structure.

Keywords: environmental sustainability management, sustainability climate, higher education administrators, sustainability stewardship

ACKNOWLEDGEMENTS

Through my thesis process, I have been challenged and exposed to many areas of growth which have thus played a huge part in my journey as a student affairs professional. Without the dedication, support and love through this process, I would not have this completed research.

I would like to first and foremost thank my thesis advisor Dr. Dianne Timm and for spending many long hours reading over my work, and providing me with the edits and suggestions to make my research more rich and meaningful. You are all amazing mentors and I thank you for believing in me. Another thank you goes to my two other committee members Jody Stone and Dr. Dan Nadler, thank you for your support.

Secondly, I could not have made it through this process without the amazing support of my supervisor Lisa Walker, and co-workers who stood by me while I balanced my other day to day commitments. Thank you for your understanding and appreciation as it has helped in my professional development.

Next, I have to thank my close friends within my cohort, who have pushed me when I was low and celebrated with me during my times of success. Each of you have made me a better person, student, and professional and I thank you for all of the laughter and memories.

Finally, I would not be anywhere without the support from my family. This document is a result of all of your love and support throughout my life. You have been with me through the good and bad times and always helped to pick me back up. I love you all and thank you for keeping me going.

TABLE OF CONTENTS

Abstract.....	i
Acknowledgements.....	ii
Chapter I: Introduction.....	1
Personal Reflection	3
Purpose of the Study	5
Research Questions.....	7
Significance of the Study	7
Limitations of the Study.....	8
Definition of Terms.....	10
Summary.....	12
Chapter II: Review of Literature.....	13
Environmental Initiatives.....	13
Eliminate waste and recycling.....	14
Conserve and protect water resources.....	23
Increase Energy Efficiency & Reduce Greenhouse Gas Emissions	27
Design and construction of sustainability buildings	31
Measuring and Assessing Standard Campus Sustainability Efforts	33
Market use of materials.....	40
Role of Higher Education Leadership.....	42
Summary	46
Chapter III: Methodology	47
Design of Study.....	47
Instrument	48
Participants.....	48
Data Collection	50
Analyzing Data	51
Research Site.....	51
Treatment of Data	52
Summary	52
Chapter IV: Results and Analysis	53
Defining Sustainability	53
Sustainability Areas of Focus	56
Future Perceived Sustainability Efforts for the University.....	59
Impact of Sustainable Efforts on the Student Experience	64
Summary	69
Chapter V: Discussion	70
Defining sustainability.....	70
Areas of focus.....	72

Future Efforts..... 75
Recommendations for Practice..... 78
Future Research 85
Conclusion 86

References.....89

Appendix A.....101

Appendix B103

CHAPTER I

Introduction

On October 5th 2009, President Obama signed Executive Order 13,514 which set federal sustainability goals for all agencies, including colleges and universities, under the United States government (https://www.whitehouse.gov/assets/documents/2009fedleader_eo_rel.pdf). This executive order was made to promote the protection of our environment and to push the United States to become a world leader in the sustainability movement. Written in Executive Order No. 13,514 (2009),

The Federal Government must lead by example. It is therefore the policy of the United States that Federal agencies shall increase energy efficiency; measure, report, and reduce their greenhouse gas emissions from direct and indirect activities; conserve and protect water resources through efficiency, reuse, and stormwater management; eliminate waste, recycle, and prevent pollution; leverage agency acquisitions to foster markets for sustainable technologies and environmentally preferable materials, products, and services; design, construct, maintain, and operate high performance sustainable buildings in sustainable locations; strengthen the vitality and livability of the communities in which Federal facilities are located; and inform Federal employees about and involve them in the achievement of these goals.

(http://www.whitehouse.gov/assets/documents/2009fedleader_eo_rel.pdf)

With consumption at an all-time high (<http://www.worldwatch.org/node/810>) and an increase of our population predicted by the U.S. Environmental Protection Agency (EPA) to be fifty percent by the year 2050 (U.S. EPA, 2009, p. ii), it is time now for the nation to make drastic changes in the habits of our society to preserve the very earth that provides us with such wealth. Since the signing of the executive order, there have been major pushes in our society to move toward environmental sustainability. Leading the charge toward change at higher education institutions are organizations such as the US. Environmental Protection Agency (EPA), The Association for the Advancement of Sustainability in Higher Education (AASHE), American College Personnel Association (ACPA), National Association of Student Personnel Administrators (NASPA), American College & University Presidents' Climate Commitment, and Second Nature to name a few.

In accordance with President Obama's executive order, public institutions, such as colleges and universities, must set objectives and action plans to meet these new standards in hopes of meeting the national mission to reduce greenhouse gas emissions and to teach sustainability habits to faculty, staff, and students. Colleges around the country are driven by their mission statement. Mission statements are used to help institutions create initiatives to help uphold a mission for student learning. Looking at the majority of colleges across the field of higher education, citizenship, and stewardship are at the core of many of their missions. If universities are attempting to create responsible citizens of their students, they need to be taught appropriate methods of accomplishing this task.

Proper citizens are people who are members of a community and contribute to creating the best environment for themselves and others (<http://www.uscis.gov/citizenship/learners/citizenship-rights-and-responsibilities>).

By leading in areas of sustainability and making it a focus of the campus environment, colleges can help create responsible citizens that will lead the charge in creating a future sustainable focused society. To stay competitive as a higher education institution, it is important that college officials are developing plans to create more sustainable environments that will meet the future needs of society. When administrators are leading the charge in setting up important sustainability initiatives, the institution as a whole has better opportunity to make an impact on society and influence student awareness (Buttenwieser, 2008).

Personal Reflection

My experiences throughout my undergraduate education helped to open my eyes to the problem and causes of the issues in our world that contribute to the decay of our environment. Before my awareness in the collegiate environment, I was exposed to sustainability practices at a young age from my father. My father has a passion for trees and wild life and taught me the importance of recycling in our home to help cut down on our contribution to the filling of landfills. Despite being exposed to recycling, I assumed it was a normative behavior for everyone to recycle and didn't realize the true extent of sustainability or my passion of preservation of our environment until I reached college.

As a family, we traveled a lot to big cities such as London, Rome, and to natural places like the deep redwood forests of California. Despite being in love

with experiencing new cultures and going across the world, some of my favorite moments, were the time spent exploring the outdoors and experiencing the natural beauty of our environment. Getting a chance to escape the noise and busy nature of society, along with inhaling fresh clean air helped me appreciate the peace one feels in places on earth that are truly untouched by mankind. Through my education, I learned about the effects of pollution along with the human factor impacting the natural environment that I have grown to love. I realized if our society continues “eating away at our own life support systems,” the lush, rich environment will be gone and forgotten forever (<http://www.motherjones.com/environment/2015/01/humans-destroying-planet-earth>). I wanted to figure out how, as a society, we could cease the path of coal burning, plastic littering, water wasting, and food gorging habits.

When stepping foot on my undergraduate institution, it was hard not to notice or hear all the construction happening around campus. As a new student it was easy to become annoyed with the loud roar of the diesel engines of the drills and cranes outside my window at 6am every morning. I soon moved past the annoyance when I figured out Ball State University was working on a multimillion dollar project to lead the charge in the nation by being one of the first universities to run fully on sustainable geothermal energy. Geothermal energy is the process of using the natural heat from below the surface of the Earth which is a clean and sustainable resource (<http://www.renewableenergyworld.com/rea/tech/geothermal-energy>). A distinguishing piece of Ball State’s campus and many campuses across the

country, is the tall brick smokestack that is one of the tallest point on most campuses and spews a steady stream of smoke from the constant burn of coal energy. In the spring of 2014, Ball State shut down the coal burning smoke stack and cut out costs for purchasing and running coal through the plant. The geothermal energy project at Ball State University has resulted in a \$2 million annual savings (<http://cms.bsu.edu/about/geothermal>). After being educated through classes, documentaries, and news articles on the detrition of the environment and what impact and implications come from human causation, I was inspired to learn more on how I can personally make a change toward sustainability. I was also interested in learning how higher education institutions can, on a large scale, figure out ways to support the creation of a better environment.

Purpose of the Study

After analyzing environmental sustainability, the statistics show that almost 100% of the heat-trapping gases that contribute to global climate change are created by human activities (http://www.ucsusa.org/global_warming/science_and_impacts/science/human-contribution-to-gw-faq.html#.VPDWavnF9bI). Contributing to the severity of global climate change, our world population size continues to increase, bringing us closer to a fresh water supply crisis that could lead to the decrease in crops, overpopulation of major cities, and many deaths (http://www.undp.org/content/undp/en/home/ourwork/environmentandenergy/focus_areas/water_and_ocean_governance/water-supply-and-sanitation.html).

Through the numerous initiatives in place today, we still have a long way to go to correct the wrongs of the past generations of waste. Many of these factors could be immobilized if we learn to create sustainability conscious actions in our everyday thought behaviors. After thinking about a change in habit and mindset, I realized that leaders of our future are located at our higher education institutions. At our institutions, we have an ideal situation where we have four years with high achieving future leaders in our society. We need to take advantage of that time and attempt to teach and create sustainability conscious citizens. There are many initiatives in place at institutions to begin conversations around sustainability with the students and on campus population, but the actual impact needs to begin at the upper levels of our institutions who need to be prepared.

This study was done to gain administrators' knowledge of initiatives that help create a positive sustainable climate at the institution and identify knowledge and preparedness administrators have to manage and adapt to the governmental push for sustainability. The findings from the study help in assessment of what sustainability programs the institution is currently engaging in, how those are assessed, and the impact on the student experience. As a young administrator coming into the field, I was looking to analyze ways that we are able to impact the sustainability climate on campuses. Looking ahead at our current rates, we are looking at a future where nearly two billion people will lack access to clean water, our climates will continue to rise in temperature, and sea levels will rise to new heights that will threatening millions around the world. To create sustainability climates, our campuses administrators have to be the mavericks in including these

initiatives in the strategic plans, mission statements, and budgets in order to help our students and local community pay attention and care for the preservation and sustainability of the environment.

Research Questions

Due to the high importance being stressed by government to reach a high level of national sustainability by 2020 (Executive Order No. 13,514, 2009), this study strives to advance the understanding of administrators' feelings toward sustainability and their involvement with sustainability on campus and within their department. This was addressed by assessing the following research questions:

1. How do administrators define sustainability?
2. What types of sustainability efforts are administrators focusing on in their area?
3. What sustainability efforts do administrators see the institution needing to move toward?
4. How do administrators define the impact of sustainable efforts on the student experience?

Significance of the Study

With sustainability at the forefront of higher education, United States, and the world, looking at the impact one institution is making to help in creating a sustainability culture on campus, has the potential to educate other institutions on practices and actions needing to take at their specific position. Sustainability efforts are a significant part of a national initiative to help save and preserve our

environment for future generations (Executive Order No. 13,514, 2009).

Discovering what drives decision making of administrators to create more sustainable practices on campus, universities can create initiatives to help develop sustainability conscious students (Beringer & Adomssent, 2008).

Often at the institution, we focus on what activities and programs we have in place for our students to learn about the important societal issues like sustainability, but often we forget to ask ourselves, what training and programs are in place for the decision makers such as presidents and board members. This study exposed the realities regarding what the administrators at our institutions understand about initiatives they need to create an environmentally sustainable campus climates. Having university administrators, faculty, and staff engage in creating a campus culture focused around sustainability efforts, exposes students to these initiatives and could have a greater tendency to make a change in their daily lives. The three benefits that sustainability efforts can bring to a campus other than creating engaged citizens include marketing tools, long term financial saving, and increased engagement with the greater community.

Limitations of the Study

In conducting this qualitative research on administrators at the institution regarding the management of sustainability efforts occurring at the university, there were limitations to the study. The limitations in this study included the nature of the research, reality of responses by population, and the demographic of the institution where the research took place.

The first limitation that impacted the study's outcome included the nature of the definition of sustainability. Sustainability has many moving parts including; waste management, energy consumption, water, food, etc.; and it was difficult to analyze the overall sustainability habits, considering personal definitions of sustainability differed between each participant (Sen, 2013). The population of participants, administrators, came with unique perspectives that limited the depth and understanding of the topic area. The information shared during the interviews came from four unique responses of sustainability on campus. The limitation learned through this study, was there is not a collaborative nature to sustainability, interviewees spoke from what they know rather than the broader picture. Limiting the results further, many of the participants lacked the education and knowledge base regarding the best practices in the field and how they impact universities.

Another limitation to the study was a singular midsized institution in the Midwest. Having one institution's perspective limited the transferability of the results to universities that may already be making strides in sustainability. The public nature of the participating institution, brought with it limitations such as being a state funded school. Funding played a role in the limitations of this study, as at the time of the study, the institution site was facing a no state funding impasse of six months. This created a lot of discussion around inability to fund projects.

Other limitations outside of the participants and institution location included researcher limitations in content knowledge, experiences, and observer bias

during the collection of data. One of the final limitations to this study included the qualitative approach to gathering data. With conducting a qualitative research, the study had a limited number of participants. Each member of the sample was purposefully chosen to provide their insight into the study. Varying amongst the participants in the study, a limited knowledge base between explicit knowledge and implicate knowledge. In qualitative studies, interpretations of what were discussed in the interviews have the potential to be biased and misguided

(<https://www.shrm.org/publications/hrmagazine/editorialcontent/2014/1214/pages/1214-hidden-bias.aspx>).

Definition of Terms

Administrator. For the purpose of this paper administrator will be defined in accordance to the definition laid out in *The professional student affairs administrator: Educator, leader and manager*. The book describes student affairs administrators as occupying many roles and lays out each role,

“some are entry-level staff members who provide direct educational service to students... many are midlevel supervisors or complex functional units such as directors of career services...others are executive-level managers with direct responsibilities for the superintendence of many other educators and staff members and of multimillion-dollar budgets such as deans or vice presidents for student affairs” (Creamer, Winston, & Miller p.7-8).

From this definition, administrators focused on within this paper were midlevel supervisors and executive-level managers. The book further describes the role of these administrators on campus to function as, “educators, leaders, and managers. The educative role must ensure that the college or university functions over which the administrator presides are actively and unswervingly engaged in promoting both individual and community development” (Creamer, Winston, & Miller p.6).

Environmental procurement. The purchase of products and services which have less impact on the environment and human health compared with competing products or services that serve the same purpose (UNDP Quality Assurance and Professionalization Unit, 2008).

Stewardship. Stewardship within this study refers to the idea of giving back to society and coming together for the common goal of bettering the society. This definition is further supported by the heuristic-systemic model of sustainability stewardship, in which HaeJung Kim, Stacy H. Lee, and Kiseol Yang describe it best stating:

“Stewardship is defined as the responsible use of resources that takes into account the interests of society, future generations and other species, as well as accepting significant accountability on the part of citizens to society” (2015).

Sustainability. Sustainability is referred to as the ability to continue a defined behavior indefinitely (<http://www.thwink.org/sustain/glossary/EnvironmentalSustainability.htm>). In terms of this study, sustainability will refer to the context of environmental

sustainability as defined by the EPA, sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations (<http://www.epa.gov/sustainability/basicinfo.htm>).

Sustainability climate. All the contributing sustainability practices factoring into the overall mission at an institution to decrease carbon emissions, food and water waste, and educating anyone under the intuition through programming and other opportunities.

Sustainability practices. Implementation of a program, idea, or action that helps to progress sustainability. Examples include, incorporating sustainability into curriculum, having green certified buildings, community gardens, recycling, water refill stations, etc.

Summary

Chapter I gave an overview of sustainability and the significance of this topic area on higher education. Through the establishment of four research questions the study intended to answer, chapter I also gave background into the potential limitations of the study. Chapter II will go into in-depth research of literature to support and validate best practices and challenges in the field to increase sustainability on college campuses.

CHAPTER II

Review of Literature

The purpose of this study was to take a look at the management of sustainability of college campuses and better understand administrators' knowledge about and responsibility for sustainability on campus. In order to understand this topic it is important to look at the various ways sustainability impacts higher education. Another important factor is identifying who is leading the campus sustainability movement. As described in *Greening of the Ivory Tower*, at our current place in time, sustainability efforts in higher education benefit from multi-level support (Buttenwieser, 2008).

Environmental Initiatives

This section will be breaking down the different sustainability focuses discussed in Executive Order 13,514. Each section will include research on successful initiatives used by institutions to effectively reduce energy, who is leading these efforts, and ways these initiatives are contributing to overall government influenced sustainability expectations. Government plays a significant role when it comes to public policy relating to the preservation and conservation of the environment (<http://www.un.org/esa/agenda21/natlinfo/countr/usa/natur.htm>). Sustainability development can be driven by public policy to help promote specific practices and initiatives that will help to maintain a healthy global environment and historically, “policy-makers have remained at arm's length from such initiatives, but as they become increasingly integrated within mainstream supply chains, policy-makers

are becoming increasingly interested in exploring ways to promote best practices and maximize results” (<https://www.iisd.org/markets/policy/>).

Executive Order 13,514 expresses a desire for change defined in different categories of sustainability. With appropriate assessment resources, college campuses have the opportunity to strategically make changes on campus that can meet the many demands of the executive order. As mentioned by Kerr and Hart-Steffer (2012), “how a college focuses on sustainability will depend on the institution culture, priorities, mission, and its resources – there is no one path” (p.11). The research included in this section, will help outline best practices happening around the nation in higher education to support and define how institutions can reduce their environmental impact.

Eliminate waste and recycling. This section will discuss programs and initiatives that institutions across the nation are using to eliminate waste. In regards to Executive Order 13,514, eliminating waste and recycling both discuss the reduction of materials in our landfills. Having similar qualities and attempting to meet the same goals, eliminating waste and recycling are discussed jointly in this section. Waste as defined in the executive order is to, “reducing printing paper use, increasing diversion of compostable and organic material from waste stream, and diverting at least 50% of non-hazardous solid waste” (Executive Order 13,514 p.3). Recycling is not defined as a main point in the Executive Order in regards to reuse for example, “consistent with state law, identifying, promoting, and implementing water reuse strategies that reduce potable water consumption” (Executive Order 13,514 p.3). Another way this order identifies

the reduction of waste, is through, “increasing diversion of compostable and organic material from the waste stream” (Executive Order 13,514 p.3).

Recycling. The task of recycling is used by universities to attempt to reduce the contributions of waste to landfills. Recycling has different components defined by the Environmental Protection agency as reducing, reusing, and recycling (<http://www2.epa.gov/recycle/>). Beginning in 2001, the national program *Recyclemania*, “provides tools and opportunities that inspire, empower, and mobilize colleges and universities to benchmark and improve efforts to reduce or eliminate waste” (<http://recyclemaniacs.org/about>). Peaking involvement in 2011 with 630 schools, and recycling 91 million pounds material and compost, the program has provided a healthy competition between universities to help in the environmental efforts. Since the competition started, new categories have been created to recognize different universities making huge accomplishments on their campuses. During the 2015 competition there were eight main categories, grand champion, per capita classic, waste minimization, gorilla, bottles & cans, cardboard, paper, and food service organics (http://recyclemaniacs.org/sites/default/files/RecycleMania_Report2015_Final.pdf). Antioch University Seattle won the grand champion category, the per capita classic winner went to Loyola Marymount University, and the waste minimization winner went to North Lake College. Loyola Marymount ended up winning the top recognition through the competition by placing first in 4 categories, waste minimization, bottles and cans, cardboard, and paper.

Antioch University was established in 1867 in Ohio, and is now a system of five different institutions nationwide that holds the mission to, “empower students with the knowledge and skills to lead meaningful lives and to advance social, economic, and environmental justice” (<http://www.antioch.edu/explore-antioch/mission-and-vision/>). Of the five private liberal arts campuses, Antioch University Seattle is located in Washington State and prides themselves on their sustainability focused initiatives on campus. The leadership is part of the ACUPCC, there are LEED certified buildings, a bike friendly campus, and has placed them in the top spot of *RecycleMania* for the last two years.

Loyola Marymount University is a private Roman Catholic institution that was founded in 1911 in Los Angeles, California serving nearly 10,000 students. *Green LMU* is the campaign that began in 1990 to start implementing more sustainability practices on their campus. Still in effect today, the university has multiple initiatives’ including curriculum integration, campus operation improvements, gardens, and student organizations dedicated to the sustainability efforts (<http://admin.lmu.edu/greenlmu/>). In regards to recycling, the university gained the highest recognition in *RecycleMania* by increasing their recycling percentage to 82.60% of all material recycled on campus and a per capita rate of 73.9 pounds of material (<http://recyclemaniacs.org/2015results>). The specific efforts were influenced by the student organizations working together and also the university building its own recycling facility on campus. They adapted the concept of airport baggage cars and used that for recycling bins across campus to collect and transport them to the new recycling plant

(http://recyclemaniacs.org/sites/default/files/Loyola%20Marymount%20University_RM2015.pdf). This has helped the university reach the top achieving level of waste management, but also their ability to keep things in house eradicating transport expenditures. These efforts on their campus have helped them in their achievement of top awards in the recycling competition.

Located in Irving, Texas and established in 1977, North Lake College is a community college that serves 10,000+ students. To achieve their award in the *RecycleMania* competition the university took specific steps to commit themselves to the mission of the program. First, the university committed to the pledge of the competition to, “Learn how to reduce waste on campus and in my community; Act to reduce personal waste on campus, including using reusable products; Share ideas for reducing waste and share actions taken on campus or at home” (<http://www.northlakecollege.edu/about-us/sustainable-campus/get-involved/Pages/RecycleMania-2015.aspx>). This commitment along with a detailed schedule calendar of events helped keep recycling at the forefront of the university and made the initiatives visible week to week to engage their students.

Other than the three top winners in the competition, there were honorable mentions in the competition in 2015 that had stand out programs that were innovative in recycle efforts on their campus. The four programs highlighted in the 2015 report, were Stanford University, Notre Dame, Florida A&M, and the University of Arkansas (<http://www.northlakecollege.edu/about-us/sustainable-campus/get-involved/Pages/RecycleMania-2015.aspx>). Stanford University created a video about no waste at the university while calling out rivals University

of California Berkley and Harvard to create a healthy competition between the schools to see who could do a better job in the year to beat one another (<https://www.youtube.com/watch?v=vKo0XXiWGVM&list=PLo4Ho2FA1TD6I9ZiDvhizTbcDw89InqOd>). Stanford services over 16,000 students and they are categorized as a private research university and “since its opening in 1891, Stanford has been dedicated to finding solutions to big challenges and to preparing students for leadership in a complex world” (<http://www.stanford.edu/>) which shows how their recycling efforts are meeting their historical values to help solve the worlds issues through their research and efforts on campus.

Another initiative highlighted by *RecyclingMania*, was at Notre Dame’s *game day recycling program*. This program takes dozens of student volunteers who go through the tailgate area to distribute blue recycle bags to the attendees (<http://green.nd.edu/programs/green-actions/gameday-recycling/>). This program also allows other student organizations to sign up to volunteer to help out. At one of their games, they had a whole halftime where they had volunteers stationed around the concourse of the stadium promoting recycling initiatives, while a video of recycling programs around campus played on the jumbotron and a demonstration of recycling efforts including audience participation took place on the field (http://recyclemaniacs.org/sites/default/files/RecycleMania_Report2015_Final.pdf). Notre Dame is a religiously affiliated private institution that serves over 12,000 students. The difference from other institutions, is that their focus of sustainability started in 2007 after the pope observed, “The environment is God’s

gift to everyone and in our use of it we have a responsibility towards the poor, towards future generations and towards humanity as a whole”

(<http://green.nd.edu/>).

Recycling efforts can look different for institutions and there are many ways in which universities have proven themselves to be top achievers in their campus efforts. One challenge that universities are facing in regards to recycling is the maintenance and coordination of pickups, sorting, and maintenance (Millard, 2015, p.44). Sustainability and energy management at the University of Puget Sound, a Washington Methodist liberal arts college that serves just over 2,500 students, discuss how their students on their campus are innovating recycling awareness efforts through the creation of mobile app. This mobile app will allow students, faculty, and staff to use a QR code, “on the side of the bin can be scanned so the facilities department can pinpoint its exact location” (Millard, 2015, p.44). In relation to Notre Dame’s green game where they created zero waste, no-waste events are gaining traction nationwide, and Elizabeth Millard argues that events like these require, “passionate and concerted effort by everyone from the president to each incoming first-year student” (p.46). Universities that have been at the top in campus efforts have relied on all parts of the university coming together to reach the goal which is why buy in is very important in getting these initiatives off the ground.

Community Gardens. According to Vinodh Valluri (2010) community gardens on campuses are becoming a growing trend, which is raising the awareness to food as an important component to sustainability

(<http://www.aashe.org/blog/campus-gardens-%E2%80%9Cgrowing%E2%80%9D-trend-campus-sustainability>). Many institutions have begun to see this as a viable option for producing some of their own produce along with eliminating waste. As mentioned by former Unity College president, “it is much cheaper and easier to grow food on a campus than it is to finance major energy retrofits...increased emphasis on local food can potentially reduce an institution’s carbon footprint, lesson its ecological impact, and minimize waste” (Thomashow 2014, p.52).

At the University of Illinois Urbana-Champaign, they have acres of land that are farmed. Used as a working laboratory, the crop fields and livestock barns provide real world experiences to students to engage in hands-on learning, while providing healthy food to on campus dining centers and food pantries in the community (<http://illinois.edu/lb/article/5510/88049>). A leading university in campus gardening and food sustainability is the University of California Davis. Run predominantly by students in the sustainable agriculture research and education program, their four gardens consist of a market garden, ecological garden, research fields, vineyard, and their greenhouse complex. These gardens show the range of balance between providing fresh produce to the university, utilize sustainable composting to help replenish their fields, experiential learning for students, and community outreach (<http://asi.ucdavis.edu/programs/sf>). The market garden on campus was started in 1980 completely by the demands of students wishing to learn more about gardening and gaining hands-on experience with organic materials. While working with campus dining services, the on

campus coffee shop, the farmers market, and food pantry; the university teaches and supports ideals for sustainable organic gardening and also saves on costs by working with vendors. One of the key factors other than sustainability, is their community outreach to local schools through the “kids in garden spring field trips,” and “school gardening program” (<http://asi.ucdavis.edu/programs/sf>).

Not all campuses have the resources to have acres of farm land, but at St. Cloud State University they have developed a small scale community garden that helps to “build bridges between the university and larger community to create a space where people can participate in planting, growing, and harvesting our own food” (<http://www.stcloudstate.edu/communitygarden/history.asp>). Northwestern University is located in an urban environment of Chicago, with not a lot of land to cultivate large scale farm operations close to campus. In light of this challenge, graduate students started the “Plant-it-Purple Graduate Gardens” and undergraduate students started a vegetable garden “Wild Roots” which are small scale community gardens, to promote sustainability and connection amongst students (<http://www.northwestern.edu/sustainability/index.html>).

Whether a large scale operation or a small scale community garden, these institutions are creating sustainable locally grown food, while educating and promoting healthy habits to the students on campus and members of the community that will help build a passion to be more conscious of their impact on our environment.

Composting. The method of composting is a “simple way to add nutrient-rich humus which fuels plant growth and restores vitality to depleted soil”

(http://eartheasy.com/grow_compost.html). University dining halls can create collaborative learning opportunities that help to develop students on our campus (Cabrera, 2002, p.21). With providing food on campus there is the expectation that there will be an abundance of food waste. The institution must take responsibility in identifying ways to eliminate food waste cost and how to give back in environmentally sustainable ways. Using composting at universities can lead to a deep decline in landfill waste, provide rich soil for healthier crops, and also contribute to reducing costs universities spend on keeping their vegetation and plants fertilized (Buttenwischer, 2008 p.36).

One college making an impact in composting initiatives is Middlebury College in Vermont. Known as one of the oldest liberal arts school in the nation founded in 1800, this small 2,450 school expresses that, “sustainability is a fundamental way of life” (<http://www.middlebury.edu/sustainability>). Through their efforts, Middlebury College has diverted 75% of their food waste to composting operations, reduced \$100,000 in grounds costs, and has also inspired students to focus their studies toward sustainability efforts (Buttenwischer, 2008 p.36). Their dining facility is responsible also for diverting nearly 90% of their food waste to composting as well. Middlebury’s dedication to reducing and reusing materials has helped them to reduce over 300 tons of food waste per year through their collection efforts from over 85 compost bins across campus (<http://www.middlebury.edu/sustainability>). Their recycling and sustainability have given them recognition by getting involved with Real Food Challenge as

well as Recyclemania both programs that create competition between universities across the nation for sustainability success.

Conserve and protect water resources

This section will review the efforts on college campuses that are helping to improve water efficiency and management on campus. President Obama's Executive Order 13,514 includes a call to, "implement water management strategies including water-efficient and low-flow fixtures and efficient cooling towers...implementing water reuse strategies that reduce potable water consumption" (Executive Order 13,514, 2009 p.2-3). Also included in this section will be programs and initiatives to promote the reduction of bottled water usage and increase in use of refillable bottles.

Each year *Bestcolleges.com* in accordance to the Association for the Advancement of Sustainability in Higher Education's (AASHE) STARS program, lists the top greenest colleges in the nation. Listed as eighth on the 2015 list is Emory University, a private research institution in Atlanta with a student population of 15,000 (<http://www.bestcolleges.com/features/greenest-universities/>). Among being recognized as one of the leaders in LEED certification and leading many other green initiatives on their campus, they have made many strides in their water conservation efforts during the construction of buildings on their campus. In compliance with LEED certification, Emory has implemented the following features in their construction efforts as either building renovations or upgrades: dual flush valves on toilets, low flow showerheads, water-saving faucets, and rainwater harvest systems (Trinklein, 2009 p.34). All

of these efforts contribute to the water recycling and reduction efforts, but the most attention the university is getting from their reduction efforts is from their WaterHub®.

Figure 2.1: Emory’s WaterHub® Water Management System

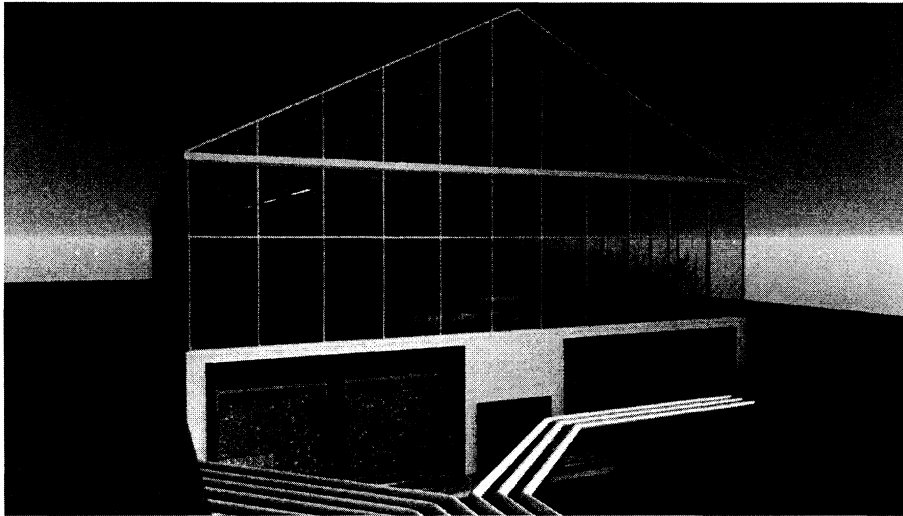


Figure 2.1. The WaterHub® Water management system used at Emory University replicates the water filtration process in nature.

This water treatment plant, is part of the university’s 2007 comprehensive water management plan and is the first of its kind to be implemented in the United States (<http://sustainablewater.com/sw-overview/the-waterhub-at-emory/>). The WaterHub®, “creates lower cost water at a long-term stable rate and is expected to save millions of dollars in water utility costs to Emory over a 20 year period” (<http://sustainablewater.com/sw-overview/the-waterhub-at-emory/>). Other than saving the university a lot of money and reducing the water usage, “the system is designed to promote research and community outreach, enhancing the concept of the campus as a ‘living laboratory’” (

Study_Emory_Print_REVQ_PRINT.pdf). This effort is a great example of how universities can take large steps to integrate water reduction at the university.

As defined by the EPA,

“The most effective way to reduce waste is to not create it in the first place. Making a new product requires a lot of materials and energy: raw materials must be extracted from the earth, and the product must be fabricated and then transported to wherever it will be sold. As a result, reduction and reuse are the most effective ways you can save natural resources, protect the environment, and save money” (<http://www2.epa.gov/recycle/reducing-and-reusing-basics>).

Relating the concepts of reducing and reusing to water conservation, bottled water creates a lot of problems that are laid out well in the 2009 documentary *Tapped*, by exposing how the water bottle industry has made billions of dollars by stealing municipal tap water, bottling it in chemical containers, and reselling it back to the members of the community (<http://www.tappedthemovie.com/>). In North Carolina, the 15,000 private research institution Duke University, strives to reduce bottled water usage on campus to increase their overall sustainability efforts. Efforts on campus have been led by policy, administrators, and students.

Duke University has made efforts to integrate environmental sustainability into the core of the institution. In 2005, the university president, Chancellor for Health Affairs, Executive Vice President and Provost all signed the *Duke Environmental Policy Statement* integrating a call for sustainability

implementation from the academic, operational, and community approach (<https://sustainability.duke.edu/about/policy.html>). They strive to,

Continue to be in the forefront of environmental research and education... comply with all relevant environmental laws and regulations and go beyond compliance by integrating the values of sustainability, stewardship, and resource conservation into activities and service... and to maintain a positive and proactive role in communicating with the surrounding community, especially the Durham community, regarding our environmental activities and performance(<https://sustainability.duke.edu/about/policy.html>).

Having the president and other supporting administration enact this policy on campus has provided a visible emphasis for sustainability on campus.

Administrators in multiple offices and colleges including the Provost's office and the Continuing Medical Education program have made the decision to eliminate single plastic water bottle usage in their offices. Taking stands against water bottle usage, the president's office provided compostable water receptacles during the new student orientation process (http://sustainability.duke.edu/campus_initiatives/water/bottledwater.html).

Using these programs seem to have helped raise awareness and help initiate water and waste conservation efforts.

Water bottle reduction efforts on the Duke University campus has sparked the students to stand up and take action to eliminate bottled water sales on campus

through the national campaign *Take Back the Tap* (http://sustainability.duke.edu/campus_initiatives/water/bottledwater.html). Take Back the Tap is a program that strives toward “rejecting bottled water on their campuses and leading the fight to protect our essential water resources for current and future generations” (<https://www.foodandwaterwatch.org/campaign/take-back-tap>). All these campaigns are student driven and through this program over 70 colleges and universities have taken full or partial bans on bottled water.

Increase Energy Efficiency & Reduce Greenhouse Gas Emissions

There is not a singular way universities are increasing energy efficiency and reducing greenhouse gas emissions. The range of initiatives that may fall under this category can include large budget construction projects (i.e. geothermal energy projects, wind turbine farms, etc.) to small example initiatives (i.e. on campus bike programs, marketing efforts, energy efficient lightbulbs), and soon to meet national sustainability goals outlined in Obama’s 2009 executive order and current “Clean Power Plan.” Much of these projects are also influenced by the budgets at each institution along with campus, local, state, and national politics. Through this section, the breakdown of initiatives at different institutions will be discussed to show examples of programs, how they may have been funded, and who initiated the projects. The examples provided work to meet Executive Order 13,514’s goal to, “increasing agency use of renewable energy and implementing renewable energy generation projects on agency property, reducing the use of fossil fuels, etc.” (Executive Order, 2009 p.2). Looking at renewable-energy installations, former Unity College president Mitchell Thomashow (2002)

identifies that, “renewable-energy installations dramatically change the physical landscape of a campus ... they convey an image of campus that is forward looking, research oriented, and engaged in thinking about its future” (p.34).

Solar energy. Solar energy, as defined by the Solar Energy Industries Association (SEIA), “is energy from the sun that is converted into thermal or electrical energy. Solar energy is the cleanest and most abundant renewable energy source abundant renewable energy source available, the U.S. has some of the richest solar resources in the world” (<http://www.seia.org/about/solar-energy>). Knowing the abundance, effectiveness, and cleanliness of solar energy universities often look into the implementation of solar panels and solar energy resources on their campuses. At Monmouth University they have “mounted the largest solar installation east of the Mississippi River, with panels covering the roofs of four campus buildings. [The panels] save the school an estimated \$150,000 per year and eliminate about one million pounds of CO2 emissions” (Buttenwiesser, 2008 p.37).

Biomass hydronic heating. Community colleges across the nation are also making large strides in saving energy and reducing greenhouse gas emissions. Mount Wachusett Community College (MWCC), is located in Garner, Massachusetts and has over 4,500 students. With the university signing the AUCUPCC commitment to making changes toward a more sustainable future, administrators at MWCC saved around \$300,000 and cut their greenhouse gas emissions by 24 percent by building a biomass hydronic heating system (Buttenwiesser, 2008). Biomass hydronic heating systems burn trees, vegetation,

or agricultural waste to heat up water helping to avoid using fossil fuels and other hazardous materials that impact the environment

(<http://biomassthermal.org/resource/faq.asp>). After the building of the biomass heating system, the university also created a \$9 million wind project, “MWCC generates nearly all of its energy needed on-site, and is near carbon neutral”

(<http://mwcc.edu/sustain/>). These costly projects were funded in conjunction by the university, state, and various bond/grant programs.

East Los Angeles [community] College is the largest of nine community colleges in the Los Angeles, California area serving just over 27,000 students. At the institution, a \$9 million photovoltaic farm anticipated to create one megawatt of electricity “estimated to provide enough energy to meet the college’s daytime electricity needs” (Buttenwieser, 2008 p.38). This large scale project is part of the larger project the Los Angeles Community College District(LACCD) has to take all of their campuses off the electrical grid creating an entirely energy independent environment. The college has used their innovation and is currently working on constructing “5,952 solar panels installed atop seven large-scale carports - which provides space for 530 vehicles” (<https://www.elac.edu/adminservices/construction/gogreen/greenmodel.htm>).

Wind energy. Students can also be the catalysts for change on college campuses as they bring in new ideas or see the campus from a different perspective. It can also be part of an academic project or program. At American University, a private research university located in Washington D.C., they focus their common purpose on “personalized teaching and experiential education, the

university provides for the direct involvement of faculty and students in the institutions and culture of the most important capital city in the world” (<http://www.american.edu/president/Statement-of-Common-Purpose.cfm>). The university has over 13,000 students and has dedicated themselves to making changes to move toward a carbon neutral campus by 2020 (<http://www.american.edu/finance/sustainability/Energy.cfm>). In terms of increase in energy efficient initiatives, a single student at American University led a campaign to increase the student fees by ten dollars in order “to help the university pay for using 50 percent wind energy by 2012” (Buttenwieser, 2008). By listening to students voices, and a dedication toward reducing their sustainability footprint, American University since 2011 “purchased renewable energy credits (RECs) equivalent to 100 percent of the university's electricity consumption...ensuring that clean, zero-emissions electricity is being generated in the same amount as the university consumes” (<http://www.american.edu/finance/sustainability/Purchase-Renewable-Energy.cfm>).

If monetary resources are tight within the state or at specific universities, large scale greenhouse gas reduction efforts may not be feasible, but there are many small changes universities are making to take steps toward saving on resources and reducing their impact on the environment. One program universities such as Wellesley College, SUNY-Cortland, and Schreiner University are taking are implementation of community bike programs (Buttenwieser, 2008 p.37). Taking simple measures, such as these biking programs, can reduce the

number of cars driving around campuses as well as promote healthy living. The Bicycle Friendly America program, started by The League of American Bicyclists, helps to create a “tool for states, communities, business and universities to make bicycling a real transportation and recreation option for all people” (<http://www.bikeleague.org/>). Universities can go through the Bicycle Friendly University (BFU) program where the organization assesses on campus resources and identifies all the areas on campus that help create a bicycle friendly environment and provides a ranking system (<http://www.bikeleague.org/>). Going through this assessment, universities can help meet the program goal to, “build on this momentum and inspire more action to build healthy, sustainable and livable institutions of higher education” (<http://www.bikeleague.org/>).

Design and construction of sustainability buildings

When the government passed the Rehabilitation Act of 1973 and the American’s with Disabilities Act, government cracked down on providing equal opportunity for those who suffer from disabilities to have an equal opportunity to be successful. In Section 504 of the Rehabilitation Act, it states “[federal agencies i.e. public universities] under Section 504 include reasonable accommodation for employees with disabilities; program accessibility; effective communication with people who have hearing or vision disabilities; and accessible new construction and alterations”

(<https://www.disability.gov/rehabilitation-act-1973/>). Public universities have been forced in to make construction alterations to buildings to help meet this mandated act passed by government to remain in compliance. As for the issue of

sustainability the U.S. Environmental Protection Agency does not have enforcement guidelines for construction of new federal facilities as of yet as long as facilities meet the Clean Air Act, Resource Conservation and Recovery Act, and Safe Drinking Water Act (<http://www2.epa.gov/enforcement/enforcement-federal-facilities>). Looking back to 1973, there was a major need to support the underrepresented population of American's with disability, in regards to today there is a major need to support and protect the earth that we live on which may bring compliance acts for federal facilities to meet a certain sustainability standard. Universities around the nation are using their creativity and making a good faith effort in construction efforts to define a new standard in constructing sustainability conscious projects on campuses.

One of the leading universities in construction and overall sustainability efforts around the nation is Unity College in Maine. Unity defines themselves as "America's Environmental College" and is a private, liberal arts, sustainability science-based institution with an environmental focus. Former president of Unity College, Mitchell Thomashow (2012), wrote *The Nine Elements of a Sustainable Campus* where he describes his philosophy transforming a campus to become sustainable. In one of their projects, the university built Unity Hall a residence hall featuring, "a hybrid of active and passive solar heating technologies, state of the art insulation engineering, zero carbon emissions, modular construction, and low waste" (Thomashow, 2012, p.33). This project received one of the first "LEED platinum" awards given by the Leadership in Energy and Environmental Design (LEED), a "green building certification program that recognizes best-in-

class building strategies and practices protocol” (<http://www.usgbc.org/leed>).

Through the efforts of Unity College, they have built a campus where sustainability is integrated into the everyday lives of students.

Measuring and Assessing Standard Campus Sustainability Efforts

From small scale efforts such as marketing posters for recycling, to large budget renewable energy projects such as geothermal energy plants, it is important to assess the effectiveness of each initiative to understand how people are buying into the initiative as well as to track environmental impact, and costs saved by the university. This section explores the LEED certification program for assessment of green building construction on campus (<http://www.usgbc.org/>), The Sustainability Endowment Institute’s “college report card” an assessment tool which has been suspended as of 2012 (<http://www.greenreportcard.org/>), and the AASHE STARS self-reporting framework for colleges and universities to measure their sustainability performance. Looking at these forms of sustainability assessment, will help meet the goals of President Obama’s Executive Order 13,514 to,

further the policy of the United States that to achieve these goals and support their respective missions, agencies shall prioritize actions based on a full accounting of both economic and social benefits and costs and shall drive continuous improvement by annually evaluating performance, extending or expanding projects that have net benefits, and reassessing or discontinuing underperforming projects (Executive Order 13,514, 2009).

LEED. Transforming the way we think about how buildings and communities are designed, constructed, maintained and operated across the globe, the Leadership in Energy and Environmental Design (LEED) is the national benchmark for green buildings (<http://www.usgbc.org/>). Created through the U.S. Green Building Council (USGBC), LEED has worked to assess more than 10.1 billion square feet of construction space globally per year (<http://www.usgbc.org/about>). LEED certification's value to higher education was explained in a white paper by Robin C. Ried (2008) on behalf of the USGBC,

LEED can play an important role in structuring and guiding the green building and planning processes. Utilizing the rating systems early in the planning and design stages of a project enables the project team to take a holistic approach to development, drives innovative and cross-cutting design solutions, and ensures environmental benefit across the full spectrum of ecological considerations. LEED also offers an opportunity to validate and recognize an institution's commitment to sustainability. Finally, it connects its participants to resources and assistance for green projects as well as other institutions undergoing similar projects to allow institutions to share and learn from each other's experiences" (p.6).

With all the benefits LEED can provide to universities, many schools have chosen to not only incorporate LEED certification to construction efforts on campus, but also to strive to set a precedent for other universities by reaching the

highest level of certification, the LEED platinum standards (Martin & Samels, 2012). One of the schools leading the way is Ithaca College's Park Center for Business and Sustainable Enterprise. Ithaca College, is a private college with over 6,500 students in upstate New York. By working with LEED they have been defined as, "a sustainability leader among peers" (Martin & Samels, 2012, p.181). With LEED buildings being built around campus the university has gained national attention and many awards recognizing their sustainability efforts on campus.

LEED certification is not for every institution. Despite the national attention received and the positive steps the construction has to reduce emissions and waste, some universities also argue that going through certification may not always be the best option for their school. The University of Michigan is one institution that has decided to skip the LEED certification to build green buildings. A former dean of the College of Architecture and Urban Planning, "persuaded administrators not to get LEED certification for an addition to the architecture school building, arguing that 'it makes more sense to spend that \$100,000[estimated certification cost] on photovoltaics or better windows or insulation'" (Martin & Samels, 2012 p.187). Despite national recognition from the widely used LEED program, the university still implemented green practices and was able to use the money elsewhere. The counter argument from Robert Koester, professor and Director of the Center for Energy Research/Education/Service at Ball State University, is that "A certification cost of \$100,000 might sound significant to a chief financial officer who is watching

every dollar on a project, but that amount is nothing compared to the overall cost of the building” (Martin & Semels, 2012 p.188).

Utilizing LEED standards for construction and maintenance of green buildings may be what works for most campuses to incorporate green initiatives on campus and promote sustainability, but may not be for every campus. The important take away from the LEED certification program argued by Robert Koesters (2012) is, “whether colleges build to meet LEED Standards, or another standard, or even their own, their green building practices should follow some standard best practices” (p.188).

STARS. The Association for the Advancement of Sustainability in Higher Education (AASHE) in an attempt to hold universities accountable for their sustainability efforts on campus, created the Sustainability Tracking, Assessment & Rating System™ (STARS). This self-reporting system has helped all types of institutions come together to track their sustainability efforts (<https://stars.aashe.org/pages/about/stars-overview.html>). In designing STARS the goals of the program are to,

Provide a framework for understanding sustainability in all sectors of higher education; Enable meaningful comparisons over time and across institutions using a common set of measurements developed with broad participation from the international campus sustainability community; Create incentives for continual improvement toward sustainability; Facilitate information sharing about higher education sustainability practices and performance; Build a stronger, more diverse campus

sustainability community (<https://stars.aashe.org/pages/about/stars-overview.html>).

Through these designed goals, participating universities, “pursue credits and may earn points in order to achieve a STARS Bronze, Silver, Gold or Platinum rating or recognition as a STARS Reporter” (<https://stars.aashe.org/pages/about/stars-overview.html>). Each of these levels are assessed by categories of academics, engagement, operations, and planning & administration.

Grand Valley State University (GVSU) in Allendale, Michigan is a public liberal arts school with a student population of 25,000 students. GVSU took proper steps to involve themselves with sustainability and report to the STARS program earning the university a gold rating status in 2013. Their dedication to their STARS success started in 2008 when the university president set a mission for sustainable future of GVSU by signing the President’s Climate Action Plan, a national action plan calling for major reductions in greenhouse gas emissions (<https://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf>). Through this dedication, the president challenged the university to push for carbon neutrality by 2043. Having a large goal set for the university, the campus started implementing the four categories of STARS program on campus through their campus sustainability management (<http://www.grbj.com/articles/76596-gvsus-commitment-to-sustainability-earns-it-top-national-honors>). Academic achievements helping GVSU reach their gold STARS rank include, offering courses with sustainability focus, incorporating majors and minors, and incorporating sustainability issues and themes into certain

curriculum (<http://www.gvsu.edu/sustainability/>). In terms of engagement, there are student run organizations such as the *Student Environmental Coalition* and the university is ranked 24 of 233 schools in the national *Recyclemania* competition (<http://www.gvsu.edu/sustainability/>). Operationally, the campus has 17 LEED certified buildings, high focus on public transportation through their free bus program, increase in locally purchased food, as well as implementing low flow toilets and showers to conserve water (<http://www.gvsu.edu/sustainability/>). Finally when observing the university's planning & administration, engaged president and a separate office of sustainability with a mission that promotes engagement and focus toward daily operations of the university, "To provide Grand Valley administration, faculty, staff, students, and community stakeholders with the required skills and capabilities to become better stewards and responsible global citizens in the workforce, communities, and family life" (<http://www.gvsu.edu/sustainability/>). This example gives light into how one university has taken appropriate actions and steps to reach the STARS goals on their campus to meet a larger goal of creating a sustainable environment.

The College Sustainability Report Card. In 2005, the philanthropic organization Rockefeller Philanthropy Advisors, Inc. funded the *Sustainability Endowment Institute (SEI)*. The Cambridge-based nonprofit organization, "has pioneered research and education to advance sustainability in campus operations and endowment practices" (<http://www.endowmentinstitute.org/>). Their efforts and goals to advance sustainability efforts on campuses around the nation, helped them to create and start the *College Sustainability Report Card* in 2007 which, "is

designed to identify colleges and universities that are leading by example in their commitment to sustainability” (<http://www.greenreportcard.org/>). One of the important things to note about this resource, is that the report card is a free service that universities use to report their sustainability efforts.

The organization gathers data on their website for 300 colleges and universities in the nation with the largest endowments (<http://www.greenreportcard.org/report-card-2011/methodology.html>). To report sustainability data, there are four surveys provided to fill out information in regard to campus operations, dining services, endowment investment practices and student activities. All data is self-reported and Universities can choose to complete all survey data or select the surveys they want to complete. There are specific indicators that the SEI takes into account that helps to determine the sustainable rating given to the college or university. The rating scale used to assess sustainability uses a letter scale as in the class room, A being the highest rating to F being the lowest. Each letter was calculated through a percentage of completion within each indicator on the survey. Also in the assessment of initiatives on campus, SEI adjusted their performance metrics based on school size and endowment to make the process more fair (<http://www.greenreportcard.org/report-card-2011/methodology.html>). This initiative helped universities compare and benchmark themselves against other top performing institutions in the nation. Using <http://www.greenreportcard.org/> SEI posts all the rankings and initiatives that helped universities reach their appropriate grade. *The College Sustainability Report Card*, was in effect for four

reporting years accumulating 20,000 pages of data and was the first of its kind in regards to sustainability reporting (<http://www.greenreportcard.org/media.html>).

SEI was discontinued in 2012, “to channel our efforts to helping decision-makers utilize green revolving funds to cut costs and reduce greenhouse gas emissions” (<http://www.greenreportcard.org/media.html>) as reported by the founder of SEI. After discontinuing the report card, the institute put their efforts into another program in 2012 called the *Billion Dollar Green Challenge*, which “encourages colleges, universities, and other nonprofit institutions to invest a combined total of one billion dollars in self-managed revolving funds that finance energy efficiency improvements” (<http://greenbillion.org/about/>).

Market use of materials

This section will explore the ways professional organizations in higher education are promoting the move toward sustainability change. Look at the professional organizations making a difference at higher education institutions can bring a better understanding of how involvement can help promote change on individual universities’ campuses. The two organizations making a large impact on sustainability in higher education settings are Second Nature and the Association for the Advancement of Sustainability in Higher Education (AASHE).

Association for the Advancement of Sustainability in Higher Education (AASHE).

AASHE is the coordinating agency for the Higher Education Associations Sustainability Consortium (HEASC). This organization’s purpose, is to “learn

from each other, work together on joint projects, get access to the best expertise and information on sustainability, and to keep a collective, ongoing focus on advancing education for a sustainable future over time”

(<http://heasc.aashe.org/content/about-heasc>).

Second Nature, an organization working with hundreds of colleges and universities to, “make principles of sustainability fundamental to every aspect of higher education” (<http://secondnature.org/>).

One key aspect in future success in sustainability in the higher education environment is how we market sustainability and get other universities to buy in. The American College & University Presidents’ Climate Commitment (ACUPCC) has been noticed by Anthony Cortese as the “brightest beacons of light for systematic change in U.S. higher education [for sustainability]” (Martin & Samels 2012, p.26). The ACUPCC was developed in 2006 by twelve visionary college and university presidents. This commitment to change has helped to involve presidents from around the nation to take a stand and commit to working toward climate neutrality (<http://secondnature.org/who-we-are/background/>).

Following this commitment to change from the ACUPCC, “higher education has become the only sector in the US with critical mass committed both to the scientifically necessary goal of climate neutrality and to preparing students to develop the solution for a just, healthy, and sustainable society” (<http://secondnature.org/who-we-are/background/>).

Role of Higher Education Leadership

Looking at sustainability, there is often a question of approach to projects and initiatives and who is responsible for getting projects off the ground. As observed in previous initiatives listed in this section, change was influenced by students or administrators. Despite different approaches, administrators do have a role to play toward increasing sustainability efforts on campuses. Through research conducted to find the key factors to implementing sustainability into higher education institutions, one of the key barriers found in operational areas was,

Lack of leadership and support from senior management within the university and resource constraints, particularly people.

Insufficient funding was not a barrier for operations, as operations can realize financial savings from environmental efficiencies. The difficulties of finding sufficient resources, particularly with competing priorities, together with the lack of knowledge/understanding of environmental sustainability, were barriers in all areas of universities (Ralph & Stubbs, 2013, p.86).

This lack of support and lack of knowledge or understanding of environmental sustainability leads directly back to the significance of the study in relation to sustainability efforts being promoted and implemented on campuses.

Sustainability tasks are often placed upon administrators that do not have the skill set or knowledge base to implement these initiatives. Anthony Cortese, the founding president of Second Nature stated, “[administrators] who work in the

academy, like people in any institution or profession, are socialized to operate in certain ways, and when they are called upon to alter their practices, they sometimes lack the compass to guide them” (Martin & Samels, 2012 p.25). Universities need to take steps in the administration to continue moving sustainability initiatives forward.

Mission and curriculum. One way university administrators have influence, is through the integration of sustainability focused mission statements at the institution and incorporating sustainability education in the curriculum (Martin & Samels, 2012). Editing a mission statement may seem like a small task that does not impact the whole, but it has been argued by Kevin Kiley that, “a strong mission statement, proponents say, has the potential to help set a university on a new course, solidify an institution's identity, or help faculty members, students, and others buy in to a university's goals” (https://www.insidehighered.com/news/2011/06/20/colleges_pare_down_mission_statements_to_stand_out). These mission statements play a huge role in today’s campus environment to recruitment and retention efforts of students. In the *College Hopes & Worries Survey* conducted by Princeton Review 60% of students/parents responded that their decision would be somewhat, very much, or strongly influenced by universities commitment to environmental issues (https://az589735.vo.msecnd.net/pdf/cohowosurvpt_mar182015.pdf). Creating and communicating the image of sustainability is shown to be influential in the decision making process of schools.

Developing an academic component also promotes institutional sustainability efforts. Curriculum development, is an issue the AASHE called to action in 2010 reporting the importance of faculty and administration to work toward building a curriculum because, “one of the key opportunities for curriculum change involves collaboration among these stakeholders [students, staff, administrators, employers, accreditation agencies, government agencies, foundations, and non-government organizations]” (AAHSE, 2010 p.3). By engaging in the curriculum shift, faculty members can integrate learning in the classroom to help their students become more engaged citizens and work on changing their community. As argued by Debra Rowe and Qurora Lang Winslade, “an institution-wide initiative to engage in real-world problem solving for sustainability helps foster this engagement with the larger society” (Martin & Samels, 2012 p.46). Administrators have a role to play by keeping current in the field and adapting mission and curriculum to assist in moving sustainability efforts forward and across the institution to faculty, students, staff, and administration.

Sustainability Coordinators/Managers. Many universities have created new roles on their campus to fill the void of knowledge of sustainability. Typical titles are environmental coordinator, sustainability coordinator, environmental safety technician, etc. the role has evolved over time and continues to evolve based on the institution. (NWF, 2000 p.2). These roles nationwide have different responsibilities that may be included based off of what the university may need them for. Seattle University, a Jesuit institution of 5,500 students created their

Environmental Coordinator position on their campus originally “for meeting RCRA standards, and additional aspects of workplace safety and hazardous material management” (NWF, 2000 p.18). When the need to implement recycling efforts occurred, it was absorbed into the position and added those responsibilities to this Environmental Services Office.

At Tulane University, a private university serving 10,000 students in New Orleans, Louisiana, their Environmental coordinator position began with a student on campus. An honors student on campus wrote his thesis on the need for the position on campus and how it would benefit the university. After proposing he gathered support across campus from student organizations, provost, vice-presidents which ended in a search for a candidate to fill this new role (NWF, 2000 p.21). The role was filled and she remains in the position today at Tulane and worked to create and maintain the Office of Sustainability on campus with the mission to, “understand environmental issues and collaborate on solutions” (<http://green.tulane.edu/about.html>). In regards to the new position and creation of a sustainability position on campus, Elizabeth Davey reminds other universities that,

Campus environmental programs need the experience of the staff, the critical thinking of the faculty, and the enthusiasm and idealism of students to be successful. The structure of a university makes it hard for people from these parallel worlds to work together. An environmental coordinator gets people working together (NWF, 2000 p.23).

Tulane University's story of creation of their environmental coordinator position shows how administrators are not always the ones to start the change, but their role in supporting students who want change at the university is vital for innovation and support of sustainability practices.

Summary

Chapter II helps identify best practices and ways universities across the nation are implementing sustainability on their campuses. Institutions of varying sizes and locations have the ability to make an impact on their campuses through initiatives of large or small scale. The challenge still remains as to who is responsible for these types of initiatives. This information helps to identify similarities and differences among administrators in different roles at one institution. In chapter III the methodology of how the data was collected for this study will be discussed.

CHAPTER III

Methodology

This chapter outlines the framework of the methodology that was used for this study. This qualitative study was conducted to evaluate administrators' definition of sustainability, engagement with sustainability efforts, and to identify areas still needing to be addressed on campus. This was done in an effort to understand how universities meet national goals and create initiatives to lower their environmental impact. To gather this information, a qualitative research method was used to collect data.

Design of Study

The primary purpose of this qualitative study was to gain administrators' knowledge of initiatives that help create a positive sustainable climate at the institution. The findings from the study are intended to help in assessment of what sustainability programs the institution is currently engaging in, how those are assessed, and the impact. To gather the administrators' perspective on sustainability and how they are involved, a basic qualitative research approach was used. Using the qualitative research method approach, was the best method because it helps, "reveal how all the parts work together to form a whole" (Merriam, 1998, p.6), to identify if there were defining patterns between the different administrators on campus to help in implementation of sustainability on campus. During the study, the researcher interviewed a small purposeful selection of four participants. In qualitative research, it is important the sample of participants is selective for roles with potential impact on sustainability.

“Qualitative research allowed for a selection of “nonrandom, purposeful, and small, as opposed to the larger, more random sampling of quantitative research” (Merriam, 1998, p.8).

Instrument

With the qualitative nature of the study, the primary instrument for gathering and analyzing data was the researcher (Merriam, 1998 p.20). A list of pre-determined open-ended questions (Appendix A) was also used as a secondary instrument to gather information from participants of the study. This method was selected to help gather richer in-depth data in regards to participant’s personal habits with sustainability and how in the moment participants recall the sustainability efforts in their respected area.

Participants

The participants in this study included four administrators in positions that influence and make positive change in sustainability initiatives on campus. A purposeful sample was used for this study. Using a purposeful sample allowed the researcher to select participants who best match the criteria for their study (Patton, 2001). Through the selection of the participants, there was a careful thought process in regard to analysis of their role with sustainability on campus as it relates to their specific position. All participants studied were male and were selected from one institution.

Participant 1: Participant 1 is a white male who serves as the sustainability coordinator for the campus where this study was conducted. He has been involved within the Department of Facilities Management since he was an

undergraduate student. He started his career as the recycling coordinator for campus and his title is the sustainability coordinator. The areas of focus Participant 1 is responsible for on campus is energy savings, sustainability, utility management, and recycling. Coming into his role as sustainability coordinator, Participant 1 received his bachelor's degree in business with classes also in math, music, and engineering. In his time in the position, he received an energy manager certification.

Participant 2: Participant 2 is a white male who serves as the Director for Housing and Dining Services on the campus where the study took place. Through his career, Participant 2 has always had positions within housing. He spends the majority of his time on working with those who directly report to him on departmental initiatives in place. Assessment is a large part of the role in figuring out student satisfaction within their living area. Also in his role he represents student affairs collectively to make sure the voices of the department are being heard. To prepare for his role as the director, Participant 2 has a bachelor's degree in business and personnel management, and a master's degree in education and College Student Affairs. To supplement his degrees, Participant 2 has attended prominent student affairs conferences such as ACUHO-I [The Association of College and University Housing Officers – International], GLACUHO [Great Lakes Association of College & University Housing Officers], and UMAR-ACUHO [The Upper Midwest Region - Association of College and University Housing Officers] to learn more about facilities renovations and how to take established facilities and enhance them.

Participant 3: Participant 3 is an Asian American male who serves as a professor in technology and as the Director for the Center for Clean Energy Research and Education. Participant 3 received a bachelor's degree in mechanical engineering and a master's degree for material sciences and engineering. Having degrees in the technical field, he began research in 1992 working with materials recycling, which helped him gain knowledge about sustainability and led him to the institution of the study where he continued his research and started the Center for Clean Energy Research and Education.

Participant 4: Participant 4 is a white male who serves as the Interim Vice President for Business Affairs at the institution of study. He received his bachelor's degree from Augustana College in business and accounting and started his career in public accounting where he stayed for about 25 years. Through partnering with the university through the years of consulting, he decided to accept a position as the director of business services which led him to the role he serves today.

Data Collection

Data for this study was collected through structured interview sessions. Potential participants were contacted directly in person to gauge interest in participating in the study. If a participant was interested, a time was scheduled to meet with the researcher. All interviews were conducted in the 2015-2016 academic year. Before an interview could be conducted, each participant was required to fill out a consent form (Appendix B) before the study, to gain permission for participation and for consent to audio record interviews. Each

interview lasted between thirty minutes and two hours. After interviews were completed by each participant, the researcher transcribed each recording and coded the transcripts to determine themed categories. Each interview recording and transcript was saved and stored on a secure external hard drive to only be used by the researcher and advisor for analysis.

Analyzing Data

After collecting the data, each interview was transcribed and coded to help identify any common themes that could bring light to similar habits to help correlate the data (Saldana, 2013). In qualitative research, coding by the researcher generates a, “construct that symbolizes and thus attributes interpreted meaning to each individual datum for later purposes of pattern detection, categorization, theory building, and other analytic processes” (Saldana, 2013, p.4). The researcher utilized one other individual to review the transcripts to ensure that themes or codes that emerge are accurate and not biased. This other individual was the thesis advisor for the researcher.

Research Site

All interviews for this research took place at one institution site. The institution selected was a rural, public, masters granting state university with a current student body population of over 8,500. This site was selected because of being a public state institution, to assess the ability of impact administrators of the size and status of the school can make. Each interview conducted during the process took place in the participants’ office. During the interviews, confidentiality was kept by closing off the research site from any public access.

Treatment of Data

Each interview was recorded and stored on an external hard drive. The hard drive remained in the possession of the researcher at all times and was used during the transcription process. The researcher's faculty advisor was the only other person to have access to the interviews to help filter out bias. After all research was complete, the flash drive and all written transcripts were kept in a secure storage area for the required IRB time limit.

Summary

Chapter III presented the method for the proposed study. By conducting this qualitative study the researcher was able to better assess administrators' involvement with sustainability and how that involvement impacted efforts on campus. The hope is that this research helped administrators define areas that need to be better trained upon to help sustainability efforts on campus. By conducting interviews, the study could make progress in the change of the sustainability climate on campuses. Chapter IV provides an overview and analysis of the results to the study.

CHAPTER IV

Results and Analysis

This chapter discusses the findings and analysis from the study of understanding the management of sustainability. The collected results were analyzed to see how they relate to the research questions which were developed to specifically address administrators' knowledge around sustainability and implementation on campus. These questions will bring insight to their personal definition of sustainability, the types of sustainability efforts they focus on in their operation, areas they see the institution moving toward, and the impact of institutional sustainability efforts on the student experience.

Defining Sustainability

To evaluate the four participants' knowledge and use of environmental sustainability, each participant was asked to define sustainability and talk about their personal practices of sustainability utilized in their life. All four participants were able to define areas in their lives that are examples of sustainability practice.

Defining sustainability through practice. Two of the four participants described personal practices of recycling. Participant 2, who is the Director of Housing and Dining, shared

We had curbside recycling, and you know you just got into a habit and it was easy it was a three crate system. You throw things into your crate, you took them to the end of the driveway once a week or whatever, and trucks came by and took it away.

Participant 4, who works from a financial perspective on campus, spoke of recycling the materials in which the city allowed them to recycle, but in general they did not spend extra effort. The other two participants defined personal practices in relation to reduction of resources they use. As the director of a sustainability related academic program, Participant 3 described their lifestyle as not obsessed with the material goods and talked about how they work to reduce resources,

I turn off the lights before I go, I use less water, it's kind of personal kind of lifestyle that I try to practice that. It doesn't mean I will starve myself, I will still eat and will eat very healthy but I do not eat a whole lot.

Participant 1 who is the sustainability coordinator for campus spoke of reduction of energy consumption and saving resources through adjusting transportation travel to work by riding their bike, and shared, "one of the things I have got is a small thermostat that I can pull up remotely and actually make changes or even look at to see how long the furnace or air conditioning have been running."

Defining sustainability. As part of understanding their knowledge of sustainability, participants were asked to provide their definition of sustainability in an effort to understand both personal and professional knowledge and practice. All participants were able to articulate a definition of sustainability that was related to their area of experiences and expertise. With each participant working in different areas, answers ranged from reducing the carbon footprint, to economics, and effective use of resources. Participant 1 the sustainability coordinator said,

I think it's being good stewards of the resources that we are given and trying to make the best use of what we have. Resources are not limitless so it is one of those, how do we make good or even better use than we do now. That also eliminates some people's argument of you're probably one of those that believe in global warming or any of that stuff. And I am just like I want to just use resources well.

Participant 3, the Director for the Center for Clean Energy Research and Education and faculty member provided an environmental sustainability definition established by the United Nations in 1987:

I would just go back to the original definition by the UN if you go back to 1987, maybe talking about three systems; economic system, social system and environment system. So basically those are the three major pillars of sustainability. So I will follow that type of definition because I think it is still valid.

Participant 2, the Director for Housing and Dining Services defined sustainability as a process to reduce emissions, "I think you define sustainability by trying to minimize the carbon footprint that you have as an organization."

Participant 4, the Vice President of Business Affairs, is responsible for making sure the institution has balanced the finances and is using their money effectively. He defined sustainability in regards to economics as he said, "as a green eyeshade accountant, sustainability means I do not have to put any more money into something. It is just going to keep generating itself." Further defining his view on sustainability Participant 4 stated, "to me the definition of stable

sustainability, is that you can roll things over from year to year with very little effort.”

Sustainability Areas of Focus

To better understand which primary areas of sustainability participants were working on within their specific departments, each participant was asked to talk about the sustainable acts they focus on in their area. All four participants answered this question from a different perspective. Though no two responses were exactly the same the context of their responses aligned with two different sustainable efforts: energy savings and waste reduction.

Energy savings. All four participants discussed a form of energy savings. Participant 1, who is responsible for sustainable efforts on campus, discussed energy in regards to construction efforts stating, “The big thing coming down the pipeline right now for this semester is really going to be focusing in on building efficiency and building energy consumption.” He went on to discuss how the university has agreed to build all remaining buildings with a minimum of LEED Silver certification which sets guidelines for construction efforts to minimize energy usage and other sustainability factors such as recycling of materials. Participant 2 discussed the context of energy efficiency with regard to the university cooling and heating projects,

We’ve also done things like installed a more robust cooling and heating loop on campus so that the chillers and the steam plant generate a shared resource. So instead of every building having to have a chiller and cooler and heater, and all that, it’s all centralized.

Participant 3 defined his energy efforts as it relates to the curriculum and the students within the academic program, “we deal with a lot of bioenergy. We deal with a lot of solar energy. Specifically at this moment, solar energy has been a very, very big draw for our students.” Participant 4 also mentioned the use of solar energy in relation to cost reducing efforts on campus stating, “we built some transformers and some electricity handling equipment out at the renewable energy center in an attempt to reduce our overall cost of electricity. We also put in out there some solar panels.” Participant 4 also touched on Participant 2’s project of the chilled water loop and discussed some ineffective efforts on campus as, “The chilled water loop was a very cost effective thing. The windows [referring to the replacement of old windows on campus to reduce heat loss in buildings and energy savings] are not. Lightbulbs are, but there is only so much you can do.”

Waste reduction. Three out of the four participants discussed projects of waste reduction in their immediate area of influence. Participant 3, the head of the sustainability related academic program, was the only academic interviewed and only one to not mention waste reduction efforts. Waste reduction efforts were defined by the three participants in context to food, water, and recycling.

Participant 1 responded to waste reduction efforts in regards to recycling within his area of campus, Facilities Planning and Management, stating, “The main focus obviously is going to be our recycling program. Purely because it is a very visible side” Also in Participant 1’s description of waste reduction efforts, he mentioned the utilization of assessment to track the weight of materials from the dumpsters and recycling to track changes in waste consumption.

Participant 2 mentioned waste reduction in three different contexts, recycling, water, and food. Having responsibilities in housing and dining operations, recycling and water waste management was discussed in relation to the residence halls on campus, where food waste management was discussed as it related to the dining facilities on campus. Discussing waste management in context to recycling Participant 2 said, “We have tried to increase the number of recycling bins that are in the main lobby so that people can see them more easily.” Participant 2 was the only participant to discuss using students in the department to help in recycling waste reduction efforts, stating:

For years we had NRHH [National Residence Hall Honorary] do a plastic bottle collection. So, the halls would compete with each other and twice a week they would go around to keep track of how many bags they took out and do a proportional measurement from the population, and would give out prizes. It worked very well, we went to single stream recycling so that kind of changed the way they worked.

Water waste management was also discussed by Participant 2, “We’ve replaced all the washing machines on campus to high energy because of the amount of water it used.” Another area Participant 2 mentioned was an initiative in in the residence halls with the replacement of toilets, “for example, replace every toilet in every residence hall, because instead of flushing ten gallons a shot they flush two. So very significant savings.” Participant 4 had also mentioned this water waste reduction effort when he said, “we changed everything over and we

got valves and they only flush as you are standing there, same as the toilets. And we reduced the amount of water in each flush, so we cut our water usage.”

Participant 2 was the only participant to mention the management of food waste on campus stating, “we went to trayless dining in our traditional centers so that people would take less food and throw away less and certainly our research has shown that we have had a positive impact on having less waste.” Participant 2 also mentions the reuse of material in relation to reduction of food waste, said he shared, “the oil that we use in the dining centers ... now someone is actually paying us to use it because they use it in biofuels, so they take it away.”

Cost saving was mentioned by participants when discussing sustainability efforts in regards to their direct working area on campus. Participant 2 said, “flipping lights off is important, and turn the water off when brushing. All that kind of stuff saves dollars, but the big money is how efficient is your big mechanical systems so you can maximize your ongoing savings.” When discussing insulation of piping on campus he said, “Just by adding that one inch, the temperature in the tunnel dropped by thirty five degrees. Considering we had that much impact, looking at the next generation, looking at a potential fuel savings of two million dollars a year.”

Future Perceived Sustainability Efforts for the University

All participants interviewed were able to express a future sustainability effort they would like to see at the institution. They also identified sustainability efforts they believed would help in this area at the institution. Areas that emerged included strategic planning, collaboration, and student engagement.

Strategic Planning. This theme relates to participants responses toward updating systems and planning for the future. As the person responsible for sustainability efforts on campus, Participant 1 discussed a way the institution could better utilize space by reviewing the management of classroom space to avoid construction of new facilities and stated, “can I get more use out of a particular space. Could I use it for more time per day so that I don’t have to build more classroom space?” Participant 1 gave context to this question when he said:

According to us we have several classrooms that are only used four hours per day. Why can’t we use those five maybe six hours? For facilities maintaining square footage is the cost to maintain a building, it costs more [to maintain] depending on square footage than it is based on frequency of use.

As it relates to the strategic planning three of the four participants mentioned updating systems. Participant 1 and Participant 4 spoke about updating the power plants on campus. Participant 1 discussed rethinking the energy used in the renewable energy center, he said, “I think probably where we are going to end up needing to focus on long term is what we want to be and what resources that is going to take in the long term with purpose.” Participant 4 said:

We’re still fighting with the [State] EPA because you know we don’t have this new plant up. They still have a cease and desist order on the old plant. We can’t use it. But it doesn’t matter until we get something that is workable to replace it.

Participant 2 talked about expanding successful projects such as the chillers and toilets to a larger scale as he said, “things like reinsulating the piping system for the whole campus so that there’s less heat loss which makes it more efficient. I mean think about replacing all of the toilets on campus. That is no small task.”

Strategic planning takes more efforts than just the construction and Participant 2, Participant 4, and Participant 1 discuss research and assessment. Participant 2 said:

I think the ongoing of evaluations of systems that are heating and cooling and you have to do a cost benefit analysis of how much you have to put into it to verses what the return is you know if it’s a hundred year return, well that is a little hard to make work...we are forever tweaking.

Participant 4 also mentioned upgrades, “there might be some more acceptable current technology standards that would work.” Participant 1 talks about what research he would like to do if given the opportunity when he stated:

I’d be interested in looking at what is the recycling, particularly of plastics, is it environmentally beneficial? Or, do you end up with a more environmental impact trying to recapture it, run it through and recycle it then if you were to, ideally to not use it to begin with but if you do, which has a bigger environmental impact. Making the raw material? Or all the energy of trying to save it.

Collaboration. Of the four participants in this study three mentioned collaboration efforts in regards to the future success of sustainability on campus. Using the reduction of waste as a platform in discussing partnering with dining,

Participant 1 said, “the food court which is the only dining center that really gives out bags. Saying, ‘I am not giving out free bags anymore.’ I am going to charge people for them” I think I would probably see bag consumption decrease rather dramatically.” Collaboration with the sustainability coordinator (Participant 1) was mentioned by both Participant 2 and Participant 3. Participant 2 said, “I think that everyone has to partner with him and with the mission of reducing the footprint and as educators that’s what all of our responsibility is, to keep that at people’s forefront.” Participant 3 said:

We were doing things step by step, but I know the coordinator of sustainability and energy for the campus, and he is the staff. He is just one person and we support that from an academic perspective where we are just one faculty and I am just one faculty for example. We have some other a few faculty members and I know students working on those, but we may need to work on the technical issues and those are important but those do not make a huge impact from the campus wide perspective.

One idea for collaboration effort mentioned by Participant 3, came from his research of another schools website. Participant 3 said:

I saw their homepage and it says on the bottom line, students and faculty work together to build a sustainability plan. And so you see it is happening all across the entire US. Any institution, they are doing those kind of things. So I think [research institution] as an institution we are, we have seen those and are hoping the current president and vice president will see more in the future.

Student Engagement. Participant 3 believes the true change for the future is within the engagement of the students. Participant 3 said, “We have to engage the students.” Furthermore he continued:

I think the students’ needs to have more movement. And because sustainability is for our future generations, and then in a large sense in the administrative perspective, they will be willing to do anything if the students are willing to do it.

Through Participant 3’s explanation he discusses the different approaches and continues to add more to why he believes the movement starts with the students.

Participant 3 said:

I personally think that federal government could do more and then younger students need to do more because that is concerning about our futures. Politicians will not do anything unless there is a movement unless there are desires from the root. It doesn’t mean we start a movement and they will change a policy but gradually they will hear the message and then they will attack it. But if you expect only those politicians to lead, I don’t think it will be very effective.

Two participants mentioned the priority of sustainability on campus and how environmental sustainability is prioritized on campus. Participant 3 said, “the decision has to come from the top to the bottom but the initiatives can come from the bottom to the top. It has to be both ways.” Talking about the sustainability priority, Participant 2 said:

I think it should be a high priority and I think we have done a good job doing systematic things to make overall systems be better and all that. I think the bigger challenge is, you know every year you get a new crop of students and how do you get them inducted and instructed to how you best recycle.

Impact of Sustainable Efforts on the Student Experience

When assessing the impact the participants believed sustainability had on the student experience, not all participants believed there to be an impact. Three out of the four participants were able to provide an example of how the student experience was impacted. Through this assessment, four themes were observed, promoting good behavior, reduction in cost, role modeling, and no impact.

Promoting good behavior. Three participants talked about promoting good behavior to influence student behavior. Discussing the promotion of good behavior of each individual, Participant 1, who works with campus recycling efforts said:

I've learned in my time. I am one person and I could not do it all. If everyone takes their own little piece we could move the whole university real fast. And that is something that I have seen is where if a bunch of people all of a sudden decide to move in a certain direction look out because the entire thing is moving in that direction.

Talking in general terms about effective strategies to promote this behavior, Participant 1 also said:

We don't necessarily want them to be in your face, but I mean again when looking at certain things like making the right choice the easy choice I think tends to be more of the "impact" we would be looking for.

Using assessment for student satisfaction in the residence halls, Participant 2 talks about how the efforts in his department help to promote good sustainability behaviors. Participant 2 said:

We ask questions of our students about their sustainability habits and how that has been enhanced or been effected by living on campus and I have research that I would be happy to share with you that asks those questions over like four or five survey cycles that shows that for the most part they are saying yes that I am a better recycler since I have come here because the things that I have seen happen on campus.

Talking in relation to who he believed would be the best to promote this good behavior, Participant 3 said, "I have strongly supported efforts but my thinking is that the efforts, probably the promotion, would not be very effective from a faculty perspective. But, I think it would be very very powerful coming from our students."

Driving institutional initiatives. Three of the four participants mentioned specific initiatives that were driven by the institution in regards to impacting the student experience. Participant 1 and Participant 2 both mentioned lighting initiatives on campus. Participant 1 said:

Because it's no longer the university forcing the decisions upon them. The students have to make the choice for themselves. Now hopefully, we have

over the years, set them up for success. We have kind of helped train people that hate certain things that you know, why do the lights go off when we are sitting in the class to long not moving; well that was designed to save energy. Certain things are like, have we taught people to take that next step?

Discussing the lighting cover initiative put on by the student organizations

Participant 2 said:

I think three or four years ago they did the light cover you know “conserve energy, turn off lights” and we put them on every single light switch trying to say flip them off, turn them off to try to encourage those things. They also do bulletin boards and other things to try to get people to be thinking about that.

Recycling initiatives in the residence halls on campus are run by the students and building service workers and Participant 2 mentions using this initiative to get students involved with recycling. Participant 2 said, “we still keep the students primarily involved but I want that staff to be the backup that if some bin starts over flowing, that that sub-Forman of the building is paying attention to that building.” Another institutional initiative in place discussed by Participant 2 is the mission of the student organizations. Participant 2 said, “the RHA and the NRHH I see as a student group that have that as their mission. So I think those things are all a part of it. I think keeping the students engaged is very important.”

Academic curriculum for the sustainability program are departmental initiatives Participant 3, who works as a faculty member in a sustainability

focused program mentioned influencing the student experience. Participant 3 said, “For the educational perspective, it’s much much more effective to educate students about the real situation. And a single silo is just not able to give students the big picture.”

Reduction in cost. Cost was mentioned by two of the four participants.

Both participants mention how environmental sustainability initiatives would be beneficial to lower students’ costs to attend. Participant 2 said:

I hope it is impacting them because it is making things more affordable. I think it’s something that students are exposed to passively as well as programmatically you know, so the fact you walk past recycling bins all the time; you do all of that and it’s a reminder. I think students are impacted by virtue of a little bit of the imprinting that we try to do on their consciousness

Talking about the idea behind implementation of sustainability practices on campus Participant 4 said, “our theory behind it was, it is going to reduce cost. The overall tuition won’t have to be as high because we have done these things to keep our costs low.”

Role modeling. Three of the four participant mentioned role modeling good sustainability behavior as a way to impact the student experience. Participant 1’s influence on sustainability efforts is greater as the campus sustainability coordinator. Participant 1 describes how by doing you can influence others when he mentioned he is all along and needs everyone to take responsibility of their own actions because once the university all comes together,

there is no stopping what can be done. Mentioning another role model on campus, Participant 1 said, “I know housing has worked to try to take a lead particularly in their buildings part of that is us having a little more captive audience and more impactful.” Broadly speaking Participant 2 said,

I think as a world, I think we foster everyone’s individual responsibility. Because collectively that is what is powerful. Because if they go away from here as being better people tuned into sustainability then they will continue that in their life. It is a habit.

In role modeling good sustainable practices, participants responded in regards to peers role modeling good behavior to one another, stating that students are the biggest drivers in sustainability habits on campus. Participant 2 said, “I think students are influenced by peer pressure too.” Participant 3 said:

Sometimes it may be a chicken and egg relationship but I think in this case, the university presidents and vice presidents they need to know what our students stand for. To me, that is probably the most critical piece on this campus. We have some, we have pockets of students that focus on the earth day celebration. But I think in terms of making much bigger impact, I think students need to push those.

No impact. There were participants in the study who did not believe sustainability efforts on campus impacted the student experience. When asked about how sustainability impacted the student experience Participant 1 started to mention how he was not sure it really did have an impact. Speaking about the involvement of students into the campus initiatives Participant 3 said, “I think it is

scope of involvement from students is not big enough. And the scope of all campus always needs some improvement for us.” Looking at specific projects the university implemented on campus, Participant 4 reflected on whether or not students saw the differences,

I don't know that the kids [students] necessarily realize that they are warmer than the prior group because they now have the double pane pair of windows instead of a single pane. I don't know if they know or notice the urinals or toilets flushing better but, over a period of time, we know that.

All three participants who answered no impact to students, have less contact with students in their direct role.

Summary

Chapter IV provided information and evidence of the environmental sustainability efforts being conducted on one Midwestern college campus. Participants had a basic knowledge of what sustainability is and see it from a unique perspective based on their knowledge and area of responsibility. With sustainability, cost effectiveness becomes the point of emphasis. The results found in this section will be expanded upon in the discussion section in Chapter V.

CHAPTER V

Discussion

Administrators at higher education institutions play a part in the implementation of sustainability initiatives on college campuses. Taking on many tasks, not all administrators may understand the important details in projects and planning in order to effectively meet standards of sustainability on campus. This chapter will begin by discussing the definitions of sustainability from the administrators interviewed in this study, talk about the focus of sustainability within their individual areas on campus, discuss how each participant assessed future projects, and how the efforts of sustainability effects the student experience. This chapter will also discuss implications for sustainability. The final section will provide suggestions for additional research related to the management of sustainability on a college campus.

Discussion

Defining sustainability. When looking at the management of sustainability, it is important for the administrators managing these efforts to have a clear definition and understanding of what the concept means to help in the effectiveness of project implementation within their department and on campus. When defining sustainability, it is important to note that sustainability is a very large concept and has many moving pieces large and small that make it run effectively. The sustainability initiatives promoted in the executive order 13,514, urged public entities to utilize many initiatives to help cut back on resources and to think more efficiently (Executive Order No. 13,514, 2009). Research on the

topic of sustainability has shown it to be a complex and multifaceted concept that includes conserving water, increase in energy efficiency, design and construction of sustainable buildings, eliminating waste & recycling, and so on (De Leo & Levin, 1997). Using the defined ways in which the president urges public entities to cut back, administrators at the institution should be implementing and defining efforts to meet the demand for environmental initiative, increased energy efficiency, design and construction, measuring and assessing sustainability, and market use of materials.

Looking at the participants responses to the definition of sustainability, they were able to articulate a definition of sustainability from perspective in which they were most engaged in on a day to day basis. Given the difference in areas of responsibility and previous knowledge of participants, it was not surprising to find the participants describing sustainability in various ways. Participant 1, the Sustainability Coordinator, has high access and influence on sustainability efforts on campus and practices this on a daily basis, thus his definition was based around future planning and the lasting impact of using resources wisely. Participant 2, the Director of Housing and Dining Services, who is more connected to the undergraduate student experience defined sustainability related to the efforts he most closely works with and have a greater impact on the student. Participant 3, who serves as Director for the Center for Clean Energy Research and Education on campus and serves a faculty role at the institution, provided the most formal definition and one that was also ground in the research. Participant 4 has a role that uniquely affects environmental

sustainability on campus as the VP of Business affairs who manages all budgetary spending. Through his context of sustainability it makes sense that he took a more economical approach to defining what sustainability means. As all four participants work in vastly different areas of the campus it should be no surprise that they see it through different lenses.

Areas of focus. All four participants come from differing areas on the campus of study. It was important to assess where the areas of focus were, in order to see how each area of focus align together to meet a university wide initiative. Research points to multiple examples of campus initiatives taking place across the nation at universities that are helping to meet sustainability goals. From small initiatives such as bike programs to reduce use of vehicles (Buttenwieser, 2008), to large scale high budget projects such as the \$9 million windmill project at MWCC (<http://mwcc.edu/sustain/>), it is important that no matter the scale there is a focus in some regard to working toward sustainability within each entity on campus. After looking at the results, all participants were able to talk about a project or program they have seen implemented in their department to align with sustainability. Participants were found to describe their efforts of sustainability in two areas of the sustainability framework: energy savings and waste reduction.

Energy savings. Energy saving efforts have different scales such as the obvious large changeover of campus energy systems all the way down to small efforts such as advertising to shut off lights within the common areas around campus. When the participants in this study talk about energy savings efforts in

their area, only large scale projects such as LEED certification, updating systems, and the renewable energy plant were mentioned. Research points to the importance of leadership, a focus on a common sustainability mission (Martin & Samels, 2012). Participants emphasized the renewable energy center during their interviews, highlighting an effective project on campus that helped to gain interest from differing entities at the institution. On top of being focused around the same efforts it is also important that everyone is praising the same initiatives.

Discussing the renewable energy system on campus, participants mentioned significant flaws within the system while some mentioned that it was an effective endeavor for the institution. This highlights how large overhauls could save institutions a large sum of money long-term, but the project has to work effectively from the beginning. When looking at energy savings, there is potential for disconnect between different areas on campus; being on the same page with constituents in various parts of campus is critical.

Waste reduction. Looking at waste reduction, institutions throughout the nation are using different initiatives to focus on the multiple waste reduction efforts. Recycling tends to be a large effort discussed because of the nationwide contest, Recyclemania (<http://recyclemaniacs.org/about>), and the ease of marketing and implementation. Participant 1 even mentioned that recycling is the main focus within their area due to the ease of visibility. Participants at times had a hard time distinguishing the difference between sustainability efforts and recycling efforts. This is due to the fact that recycling is a highly visible activity the institution can support and implement.

Overall, when describing focus areas of waste reduction in their areas, participants answered again in context to their direct role and responsibility in their position. They mentioned areas of waste reduction align with efforts found happening at other institutions across the nation. Some areas mentioned were reducing the waste of water through updated systems, recycling bins on campus, reusing food oils within dining, and trayless dining. Participants covered a large majority of the waste reduction efforts that help in the sustainability efforts which shows that waste reduction is a larger focus on the campus of this study. Areas not mentioned that could be looked at from the participants include community gardens and composting, which have been implemented and found to be successful at institutions such as Unity College (Thomashow 2014, p.52). The participants in this study all talked about being engaged in waste reduction efforts and would benefit from creating some centralized communication and collaboration. Waste management efforts tended to be discussed a lot more by participants, showing that these efforts are easier to overhaul and discuss. These successful smaller efforts being done to reduce waste on campus, prove that not all sustainability efforts need to be high in cost to implement.

At the institution of the research study, there were budgetary issues faced at the time of interviews which impacted sustainability, one of the largest draws for administrators to implementing change within their area, was to cut the costs. Sustainability efforts such as the Ball State University's geothermal project saved the university \$2 million a year and other schools mentioned utilized these initiatives to cut significant costs on campus. This cost cutting effort helped to

keep sustainability efforts alive and moving toward future efforts on campuses. Sustainability efforts cut a lot of cost from the bottom line at the university, and right now the dollar sign helps to send a lot of these initiatives in motion. One thing that Ralph and Stubbs (2014) remind us is,

Insufficient funding was not a barrier for operations, as operations can realize financial savings from environmental efficiencies. The difficulties of finding sufficient resources, particularly with competing priorities, together with the lack of knowledge/understanding of environmental sustainability, were barriers in all areas of universities (p.86).

Another area of interest within the responses was how the personal practices of participants influenced the knowledge and understanding of sustainability. There is no conclusive evidence to prove this within this study, but there seems to be a correlation between sustainability practices in their personal lives and bringing those practices to their position on campus.

Future Efforts. Thinking toward the future of on campus sustainability efforts, a large factor for the future will be the creation of mission statements, curriculum and developing appropriate positions to lead and maintain initiatives on campus (Martin & Samels, 2012). Participants have a good idea of what initiatives are important to work toward in the future as in their responses they mention strategic planning, collaboration and student engagement. This analysis of future efforts, shows that the participants in this study have good knowledge of the efforts needed and may not have the time to fully commit to them due to their position.

Strategic planning. Contextually looking at the responses by each participant the efforts mentioned have direct implication within their area. Participant 1 who has the most access to directing sustainability efforts, mentioned very specific tasks. Participant 2 focused on discussing more cost cutting efforts to help lower the operations costs of the Housing and Dining Services which would help his department. Participant 4 also mentioned the need for getting the renewable energy center operations running smoothly to help gain back more cost savings. These strategic planning efforts all related to projects which reduce costs.

Collaboration. In relation to the importance of a centralized mission found in the initial research (Martin & Samels, 2012), many participants mentioned the importance of collaborating with different entities on campus. Working with the Sustainability Coordinator on campus was mentioned by two of the participants as effective ways to collaborate and meet future sustainability needs at the institution. These roles of sustainability coordinators are meant to bring people from the different entities on campus together (NWF, 2000), other than just aligning to the coordinator, the concept of bringing together faculty and students to discuss the sustainability plan at the university. These collaborative efforts are important in order to ensure each entity on campus is focusing in on the same sustainability mission.

Student engagement. Research points out that sustainability efforts are not always top down or bottom up (Cromwell, Hanks, & Engel, 2009). Participants in the study discussed that future sustainability efforts on campus would be more

effective if the students were more engaged and took ownership. Administrators in this study, identified that the students who get engaged and advocate for sustainability change, are more likely to see the change than a faculty or staff member. Student engagement is mentioned for future sustainability efforts in context to participants wanting to see a more prosperous future.

Impacts on Students. In talking about future efforts, student engagement and support by the administration team is important to getting sustainability efforts on campus started. Students should be the main focus around the work being done by faculty and staff at the university, and it was important to see where the participants believed sustainability is impacting the student experiences. In getting the students to buy into the university sustainability initiatives, the administration has to become good role models proving the importance of these tasks. Managing the sustainability efforts across campus have to show and promote the good habits by all, such as individual reduction habits. By promoting good habits and role modeling within departments across campus, students not only will be able to observe good behavior, but they have opportunities to be involved and make real impact on sustainability efforts during their time at the institution.

Students are not only impacted by the sustainability efforts being put on within a specific department or college, but they are actually the ones who have the most power in making the change. As mentioned by many of the administrators in this study and the differing student led sustainability projects across the nation, those students who step up and are wanting to make a change,

have the power to drive university initiatives. These sustainability driven efforts often benefit students by lowering university costs which saves students having to worry about further debt.

No Impact. One of the most telling parts of this research has been the participants who believe that sustainability efforts on a college campus do not have an impact on the student experience. This piece of data is important, to show how there is discontent amongst the different areas on campus and that there are educational areas that need to be implemented to make sure the university is working toward getting all members of campus involved. Students were said to not be actively aware of the sustainability efforts, rather they just do not think of them. It is inconclusive in this study, but students on campus may be coming to campus with differing views and practice of sustainability habits, which impacts how visible the students may be in actively engaging in these behaviors.

Recommendations for Practice.

This study has many implications to how sustainability can be managed on a college campus. Mentioned throughout the research, successful sustainability implementation takes time effort and energy. From who decides on implementing these sustainability initiatives to the assessment of programs on campus, the management of sustainability takes collaboration and cooperation from many of the moving parts on campus.

Sustainability Coordinator. To start, institutions have to define who on campus contributes to the sustainability decision making process. This study shows how important the administrators are in regard to influence on campus, and

to the implementation of sustainable practices. As evidenced from this study, several people on campus have to play a part in the sustainability efforts of the institution; however these efforts could be better coordinated through appointing someone to serve in a sustainability coordinator position. Having someone who has the specific role of coordinating efforts across campus and between departments could also help influence decision making in a more effective manner. A person in this role would have education and experience to serve in this capacity. Additionally, someone in this role could also provide management of efforts creating a long-term plan for the institution. In this role, a coordinator or director of sustainability has to be someone who brings people together and educates on sustainability and how it functions with faculty and staff and also students. This director has to play a large part in both small and large projects such as campus recycling and the management of a renewable energy plant as is mentioned in the study, but most importantly attention needs to be put on the collaboration with other campus partners.

To drive sustainability efforts, managers of sustainability (i.e. sustainability coordinators, facilities management, etc.) need to provide resources and training to campus officials in order to create and maintain a unified direction. The true driving force behind the growth and buy-in, includes the administrators (i.e. Directors, Assistant Directors, Deans, Provost, etc.), where initiatives often are strategized and implemented through the differing areas on campus. More than just the individual managers of sustainability, but it is important to note that everyone on campus is a manager of sustainability. Thinking toward

implementation, these collaborative efforts led by the appointed coordinator or directors, are what help to define responsibility within the institution to promote unified change in sustainability management.

Unified definition. To better align sustainability efforts on campus, the university needs to have a more centralized sustainability definition that all university departments work toward. Sustainability is a large all-encompassing concept that is made up of a lot of moving pieces with many different opportunities to influence change. With multiple definitions around campus and differing focuses within different departments refocusing and rethinking the universities direction toward management of sustainability efforts needs to be clearly identified. By creating a unified definition of sustainability and specifically which areas of sustainability are focused on will bring better clarity and direction to future sustainability efforts.

Creating university wide learning objectives, values, and mission of sustainability contributes to the universal definition. This collaborative effort of departments working toward the same definition of sustainability will help in building interest in what sustainability stands for at the institutional level. Collaboration within the differing partners on campus is advantageous and highly engaging to help bring the university to a brighter more clean future.

Team - collaboration. One way to collaborate in efforts of sustainability management are sustainability committees within each college, department, or division at the university. These sustainability committees help to establish strong missions, set priorities, and identify initiatives within their area which help to

contribute to the whole institution. Having a large collective university committee around sustainability would bring the right leaders from each area of campus together to contribute to university wide planning efforts. These efforts help to bring in new ideas and create strategic objectives that are going to drive the whole university to work toward the same goal.

Strategic plan. The unified definition and collaboration efforts tie into the ability to come together as a university to build and structure sustainability into the strategic planning process. When managing sustainability administrators, faculty, staff, and students need to have a larger mission they are working toward. Establishing the definition and collaborative efforts are one step in the positive direction, but each of those lead to the creation and integration of tangible goals within the strategic plan. Having a more structured sustainability management outline and goal for the university, creates outcomes and a timeline of implementation for the university to hold each entity at the institution accountable. This effort will contribute to the ongoing success and assessment of success of managing the large task of sustainability on a college campus.

Engage & empower. Student interaction and engagement is a must toward the ongoing success with sustainability management on campus. Participants mentioned that the more students are actively involved in the discussion of change around campus, the more likely there is to be motion from administrators and other decision makers. The best way to engage and empower students to gain interest in sustainability initiatives, is to engage them in institutional efforts. One way this engagement can occur, is to incorporate the student opinion into decision

making on initiatives taking place on campus. This needs to begin with the students within any of the science and technology programs and looking at student organizations who may focus their organization around sustainability or preservation. These students tend to be more passionate about the mission and can take their passion into spreading the message to other students.

Knowing students are a large part of change at institutions, it is important that advisors are educated and prepared enough to have the deeper discussions and challenge students to think more sustainably within student organizations. As students reflect and gain more knowledge in sustainability, the different advisors and departments around campus need to give ownership to tasks and projects that promote sustainable values at the institution. These responsibilities will work to empower students to begin to think on a higher level and to build upon their efforts to help others on campus see the importance. Students are a focus area in the management of sustainability, because the engagement of students will help to build the interest and knowledge of sustainability with other students on campus.

Assessment. Tracking the successes and areas of improvement of sustainability initiatives on campus are important toward improving the management of these initiatives on campus. Assessment of programs and projects is necessary to grow and continuously make improvements toward changing campus environments. In addition to assessing their efforts on campus, they should also be willing to benchmark their efforts with those occurring at other institutions. These benchmarking assessments will be able to provide feedback to administrators on which campus areas need to be built up to match

their peers, define different programs and initiatives to implement, and will also show which areas on campus are above other campuses to help with marketing.

Looking forward, decision makers at universities must take time to benchmark large scale initiatives and take more calculated risks so that projects are done right the first time around. The study shows how certain projects participants mentioned at the research site could have been planned more thoroughly the first time around to help avoid broken down equipment. Having the proper tools in place and getting the right people involved around campus to help assess new initiatives and projects ensures that projects are done correctly the first time around. Completing successful sustainability management projects the first time around helps to avoid ongoing stress and maintenance of broken down systems and inefficient processes.

Stewardship. Another way that sustainability change can happen within the campus community is through giving back to the community, and being good society members. With the help of the sustainability director, administrators' faculty, and staff, the university has a need to make sure they are being good stewards to each of these groups on campus. In the study it was found that there are some really impactful initiatives on campus that are already saving the university a lot of money. The issue comes from the members of campus not really understanding or knowing what sustainability changes have occurred. Moving forward, universities have to do a better job to educate and communicate on what is being worked on currently, and how it is impacting the environment, campus, and individuals on campus, while celebrating what the university has

already accomplished and done well with. By celebrating the universities past successes and discussing the future goals, will help to make everyone more conscious of their sustainability surroundings to help create sustainability stewards on campus and into our society.

President. Creating a campus that manages sustainability effectively requires the involvement and approval from the university president. Sustainability management can come from either the top down or bottom up approach, making the role of the college president critical to the overall success of these initiatives. Having many responsibilities on campus, the president of the institution has to have a knowledge of the concept and importance of sustainability. With the basic understanding of the importance of sustainability, university presidents' will be more inclined to support sustainability focused initiatives that are coming through the pipeline. Using the top down approach, presidents have the ability to influence large sustainability energy conservation project initiatives on campus as seen in the research. This influence from the institution's highest leaders, sets a tone for how all areas of campus are involved and invested in the efforts. More than being knowledgeable about these initiatives, presidents need to be visible in actively practicing sustainable practices to role model these good behaviors. With their direction and guidance, presidential influence amongst the different areas across campus will help in providing collaborative efforts and give the university a more universal definition. Presidents of universities do have influence when it comes to managing sustainability and are important in each stage of the process of implementation.

With a high involvement from the president, there are areas that need to be taken care of in regard to getting all professionals on board with the understanding of sustainability management. Training and development of the concept of sustainability, what sustainability initiatives look like, and how they are implemented are crucial. Presidents of colleges have to be able to develop learning outcomes and mission statements that are essential in environmental sustainability development, but the training of the professionals at the institution are also crucial. The professionals being trained have more access with the students and have the influence to encourage students to become more sustainably conscious within their lives. Presidential influence and involvement affects the how others on campus feel about sustainability importance.

Future Research

This study helps to get a management perspective of sustainability through the eyes of the campus administrators. This research needs to be conducted at different types of institutions in different parts of the country. It would be interesting to see how sustainability focused institutions assess their management to see how administrators efforts at these types of institutions are similar or different. Knowing that different sized institutions function differently in their reporting structure and positions, conducting a similar study to see the differences between small and large institutions could provide important insights.

Gaining the administrator perspective on sustainability management showed that administrators believe that students are the true stakeholders in sustainability change on a campus. I think this study would really benefit from

getting the student perspective of sustainability on campus and the management of these efforts. Both top down and bottom up approaches are proven effective, so getting the student perspective and comparing the results to how administrators respond would help to show gaps in communication of sustainability efforts.

Another interesting approach to this study would be to get presidents at multiple institutions perspectives on campus efforts toward sustainability. Getting the presidential perspective on sustainability may provide insight in to how an institution prioritizes sustainability and how it allocates funding for such efforts. Understanding how presidents view this topic would also help institutions in identifying mission statements and funding for resources toward further efforts.

Conclusion

Sustainability management on any college campus is a very large undertaking. Colleges have found different avenues both large and small that have been able to make a significant impact to campuses. This study sought to discover how administrators were prepared and qualified to manage sustainability on one Midwestern college campus. To discover the administrators' preparedness, the research assessed how administrators defined sustainability, how sustainability was used within their direct area, the direction of future sustainability initiatives, and how sustainability affects the student experience.

Significant findings in this study show that when it comes to campus sustainability, administrators are able to provide a variety of definitions of sustainability depending on role and context of their responsibilities. Research showed that energy savings and waste management were the areas of

sustainability focus at the location of the study. The future of sustainability on campus showed that there is a need for larger amount of collaboration and student engagement.

The future of sustainability is still continuing to adapt and change as the world continues to find new ways to maintain our growing population while utilizing less materials. Sustainability is a large part of the protection of our society, and university environments have great opportunities to help foster this knowledge and influence positive change. Leading this change, administrators have a big role to play within the management and stewardship of sustainability resources. Future success, will rely upon administrators' ability to continue ongoing training and development within sustainability, and to foster collaboration, cooperation, and implementation amongst different entities on campus. To keep sustainability management front and center on campus, student engagement is crucial to helping this movement push forward and get others on campus engaged.

Not one person or department is able to tackle sustainability alone. Administrators, faculty, staff, and students need to work collaboratively to be able to bring in the future of sustainability to the university environment. With higher education leading change for decades, institutions will continue to work toward meeting governmental pushes for sustainable change with the support and guidance from administrators who continue to work on unified sustainability definitions for campuses, and integrating sustainability within the campus strategic plan.

References

- A Green Model Campus. (n.d.). Retrieved from
<https://www.elac.edu/adminservices/construction/gogreen/greenmodel.htm>
- A More Resilient Campus through Water Reuse. (n.d.). Retrieved from
http://sustainablewater.com/wp-content/uploads/2015/08/20150605_Case-Study_Emory_Print_REVQ_PRINT.pdf
- About Billion Dollar Green Challenge. (n.d.). Retrieved from
<http://greenbillion.org/about/>
- About HEASC. (n.d.). Retrieved from <http://heasc.aashe.org/content/about-heasc>
- About USGBC. (n.d.). Retrieved from <http://www.usgbc.org/about>
- Antioch University. (n.d.). Mission & vision. Retrieved from
<http://www.antioch.edu/explore-antioch/mission-and-vision/>
- Association for the Advancement of Sustainability in Higher Education (AASHE). (n.d.). Retrieved November 29, 2014, from
<http://www.aashe.org/>
- Association for the Advancement of Sustainability in Higher Education. (2010). Sustainability curriculum in higher education: A call to action. *AASHE*. 1-13. Retrieved from
[http://www.aashe.org/files/A_Call_to_Action_final\(2\).pdf](http://www.aashe.org/files/A_Call_to_Action_final(2).pdf)
- Beringer, A., & Adomssent, M. (2008). Sustainable university research and development: Inspecting sustainability in higher education research.

Environmental Education Research, 14(6), 607-623. doi:

10.080/13504620802464866

Biomass Thermal Energy FAQs. (n.d.). Retrieved from

<http://biomassthermal.org/resource/faq.asp>

Buttenwieser, S. W. (2008). Greening the ivory tower. *Earth Island Journal*,

22(4), 34-38.

Cabrera, A. F. (2002). Collaborative learning: Its impact on college students.

Journal of College Student Development, 43(1), 20-34.

Campus Climate Challenge. (n.d.). Retrieved November 29, 2014, from

<http://climatechallenge.org/>

Campus Sustainability Day. (n.d.). Retrieved November 15, 2014, from

<http://campussustainabilityday.org/>

Chen, M. F., Tung, P. J. (2010). The moderating effect of perceived lack of

facilities on consumers' recycling intentions. *Environment & Behavior*,

42(6), 824-844. doi: 10.1177/0013916509352833

Collins, D., & Gannon, A. (2014). Walking the eco-talk movement: Higher

education institutions sustainability incubators. *Organization &*

Environment, 27(1), 16-24. doi: 10.1177/1086026614521629

Composting. (n.d.). Retrieved from http://eartheasy.com/grow_compost.html

Creamer, D. G., Winston, Jr., R. B., & Miller, T. K. (2001). The professional

student affairs administrator: roles and functions. In R. B. Winston, Jr., D.

G. Creamer, & T. K. Miller (Eds.), *The professional student affairs*

administrator: Educator, leader, and manager (pp. 3-38). New York: Brunner-Routledge.

Cromwell, D., Hanks, K., & Engel, S. (2009). Bottom up and top down: Making IT a key part of the campus sustainability effort. *EDUCAUSEREVIEW*. Retrieved from <http://er.educause.edu/articles/2009/10/bottom-up-and-top-down-making-it-a-key-part-of-the-campus-sustainability-effort>

De Leo, G. A., and S. Levin. (1997). The multifaceted aspects of ecosystem integrity. *Conservation Ecology [online] 1(1): 3*. Retrieved from: <http://www.consecol.org/vol1/iss1/art3/>

Deval, P., Murry, T., & Bowles, I. (2008). Campus sustainability best practices: A resource for colleges and universities. *Leading by Example Program at the Massachusetts Executive Office of Energy and Environmental Affairs*, 1-21.

Dewey, C. (2013, April 12). GVSU's commitment to sustainability earns it top national honors. *Grand Rapids Business Journal*. Retrieved from <http://www.grbj.com/articles/76596-gvsus-commitment-to-sustainability-earns-it-top-national-honors>

Duke Sustainability Policy. (n.d.). Retrieved from <https://sustainability.duke.edu/about/policy.html>

Duke Sustainability Bottled Water. (n.d.). Retrieved from http://sustainability.duke.edu/campus_initiatives/water/bottledwater.html

Energy & Climate. (n.d.). Retrieved from <http://www.american.edu/finance/sustainability/Energy.cfm>

Enforcement at Federal Facilities. (n.d.).

<http://www2.epa.gov/enforcement/enforcement-federal-facilities>

Environmental Protection Agency. (n.d). Reduce, reuse, recycle. Retrieved from

<http://www2.epa.gov/recycle/>

Reducing and Reusing Basics. (n.d). Retrieved from

<http://www2.epa.gov/recycle/reducing-and-reusing-basics>

Executive Office of the President. (2013, June). The president's climate action

plan. *The White House*. Retrieved from

<https://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf>

Executive Order No. 13,514, 3 C.F.R. 1 (2009).

Gameday Recycling. (n.d.) Retrieved from [http://green.nd.edu/programs/green-](http://green.nd.edu/programs/green-actions/gameday-recycling/)

[actions/gameday-recycling/](http://green.nd.edu/programs/green-actions/gameday-recycling/)

Geothermal Energy Technology. (n.d.). Retrieved October 29, 2015, from

<http://www.renewableenergyworld.com/rea/tech/geothermal-energy>

Gorden, R. (1992). Basic interviewing skills. Retrieved from

http://www.indiana.edu/~educy520/sec5982/week_5/qual_data_analy_ex2.pdf

Gould, K. (2014, October 9). Student sustainable farm: More than a farm stand

[blog post]. Retrieved from <http://illinois.edu/lb/article/5510/88049>

Greenest Universities. (n.d.). Retrieved from

<http://www.bestcolleges.com/features/greenest-universities/>

Green Report Card Media. (n.d.). Retrieved from

<http://www.greenreportcard.org/media.html>

Green Tulane About Us. (n.d.). Retrieved from <http://green.tulane.edu/about.html>

Howard, B. (n.d.). 10 Greenest Colleges. *Popular Mechanics*. Retrieved

November 28, 2014, from

<http://www.popularmechanics.com/science/environment/green-energy/10-greenest-colleges-460708#slide-1>

How Do We Know that Humans Are the Major Cause of Global Warming? (n.d.).

Retrieved from

http://www.ucsus.org/global_warming/science_and_impacts/science/human-contribution-to-gw-faq.html#.VlqBFHarTIV

International Institute for Sustainability Development. (n.d.). Public policy.

Retrieved from <https://www.iisd.org/markets/policy/>

Kerr, K. G., Hart-Steffes, J. S. (2012). Sustainability, student affairs, and

students. *New Directions for Student Services*, (137), 7-17. doi:

10.1002/ss.20010.

Kezar, A. (2010). Faculty and staff partnering with student activists: Unexplored

terrains of interaction and development. *Journal of College Student*

Kiley, K. (2011, June 20). Saying more with less. *Inside Higher Ed*. Retrieved

from

https://www.insidehighered.com/news/2011/06/20/colleges_pare_down_mission_statements_to_stand_out

- Kim, H., Lee, S. H., & Yang, K. (2015). The heuristic-systemic model of sustainability stewardship: facilitating sustainability values, beliefs and practices with corporate social responsibility drives and eco-labels/indices. *International Journal Of Consumer Studies*, 39(3), 249-260.
doi:10.1111/ijcs.12173
- Kullman, M., Kadrie, A., & Beaumont, P. (2012). Recycling, reuse, and composting program: Phase 1. *Association for the Advancement of Sustainability in Higher Education (AASHE)*. Retrieved November 16, 2014, from <http://www.aashe.org/resources/case-studies/recycling-reuse-and-composting-program-phase-1>
- Larrasquet, J., & Pilnière, V. (2012). Seeking a sustainable future – the role of university. *International Journal of Technology Management & Sustainable Development*, 11(3) 207-215. doi:10.1386/tmsd.11.3.207_1
- LEED Stands for Green Building Leadership. (n.d.). Retrieved from <http://www.usgbc.org/leed>
- Lipka, S. (2006). Students call for action on campuses. *Chronicle of Higher Education*, 53(9), 11.
- Loyola Marymount University. (n.d.). Green LMU. Retrieved from <http://admin.lmu.edu/greenlmu/>
- Martin, J. & Samels, J. E. (2012). *The sustainable university: Green goals and new challenges for higher education leaders*. Baltimore [Md.]: Johns Hopkins University Press

- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. Location: Jossey-Bass.
- Middlebury College Sustainability. (n.d.). Retrieved from <http://www.middlebury.edu/sustainability>
- Millard, E. (2015). Waste watching. *University Business*, 18(3), 43-46.
- Milman, O. (2015). We're destroying the planet in ways that are even worse than global warming. *Mother Jones*. Retrieved February 27, 2015, from <http://www.motherjones.com/environment/2015/01/humans-destroying-planet-earth>
- National Wildlife Foundation (NWF). (2000). Creating an environmental coordinator position part I: A portfolio of case studies. *NWF Campus Ecology Program*. Retrieved from November 18, 2015 from <https://www.nwf.org/pdf/Global-Warming/coordinator.pdf>
- Nation's Largest Project of Its Kind Goes Live. (n.d.). Retrieved November 28, 2015 from <http://cms.bsu.edu/about/geothermal>
- North Lake College. (n.d.). RecycleMania 2015. Retrieved from <http://www.northlakecollege.edu/about-us/sustainable-campus/get-involved/Pages/RecycleMania-2015.aspx>
- Northwestern Office of Sustainability. (n.d.). Retrieved from <http://www.northwestern.edu/sustainability/index.html>
- Office of Sustainability Practices. (n.d.). Retrieved from <http://www.gvsu.edu/sustainability/>

- Patton, M. (2001). *Qualitative Research & Evaluation Methods*. Thousand Oaks, CA: Sage Publications.
- Practice Greenhealth. (n.d.). Waste categories & types. Retrieved November 28, 2014, from <https://practicegreenhealth.org/topics/waste/waste-categories-types>
- Princeton Review 2015 College Hopes & Worries Survey Report. (n.d.). Retrieved from https://az589735.vo.msecnd.net/pdf/cohowosurvprt_mar182015.pdf
- Purchase Renewable Energy. (n.d.). Retrieved from <http://www.american.edu/finance/sustainability/Purchase-Renewable-Energy.cfm>
- Ralph, M. & Stubbs, W. (2014). Integrating environmental sustainability into universities. *Higher Education*, 67(1), 71-90.
- Rappaport, A. (2008). Campus greening. *Current*, (500), 33-38.
- RecycleMania 2015 Report. (2015). Retrieved from http://recyclemaniacs.org/sites/default/files/RecycleMania_Report2015_Final.pdf
- RecycleMania 2015 Results. (n.d.). Retrieved from <http://recyclemaniacs.org/2015results>
- RecycleMania. (2015). Loyola Marymount recyclemania 2015. Retrieved from http://recyclemaniacs.org/sites/default/files/Loyola%20Marymount%20University_RM2015.pdf
- RecycleMania About. (n.d.). Retrieved from <http://recyclemaniacs.org/about>

- Rehabilitation Act of 1973, 29 U.S.C. § 701. Retrieved from
<https://www.disability.gov/rehabilitation-act-1973/>
- Report Card Methodology. (n.d.). Retrieved from
<http://www.greenreportcard.org/report-card-2011/methodology.html>
- Ried, R. (2008). *Using LEED as a resource for campus sustainability planning: A white paper*. Retrieved from U.S. Green Building Council website:
<http://www.centerforgreenschools.org/sites/default/files/resource-files/UsingLEEDforCampusSustainability.pdf>
- Saldana, J. (2013). *The Coding Manual for Qualitative Researchers*. London, England: SAGE Publications Ltd.
- Second Nature. (n.d.). Retrieved from <http://secondnature.org/>
- Second Nature Background. (n.d.). Retrieved from <http://secondnature.org/who-we-are/background/>
- Sen, A. (2013). The ends and means of sustainability. *Journal of Human Development and Capabilities: A Multi-Disciplinary Journal for People-Centered Development*. 14:1, 6-20. doi: 10.1080/19452829.2012.747492
- Soechtig, S. (2009). *Tapped* [DVD]. Available from
<http://www.tappedthemovie.com/>
- Solar Energy. (n.d.). Retrieved from <http://www.seia.org/about/solar-energy>
- Stanford University. (n.d.). Retrieved from <http://www.stanford.edu/>
- STARS Overview. (n.d.). Retrieved from <https://stars.aashe.org/pages/about/stars-overview.html>

Statement of Common Purpose. (n.d.). Retrieved from

<http://www.american.edu/president/Statement-of-Common-Purpose.cfm>

Student Farm at UC Davis. (2010). Retrieved from

<http://asi.ucdavis.edu/programs/sf>

Sustainable Endowments Institute. (n.d.). Retrieved from

<http://www.endowmentinstitute.org/>

Sustainable Stanford. (2015). *All about no waste (Meghan Trainor - all about that bass parody)*. Retrieved from

<https://www.youtube.com/watch?v=vKo0XXiWGVM&list=PLo4Ho2FA1TD6I9ZiDvhizTbcDw89InqOd>

Sustainability at Mount Wachusett Community College. (n.d.). Retrieved from

<http://mwcc.edu/sustain/>

Sustainability University of Notre Dame. (n.d.). Retrieved from

<http://green.nd.edu/>

Take Back the Tap. (n.d.). Retrieved from

<https://www.foodandwaterwatch.org/campaign/take-back-tap>

The College Sustainability Report Card. (n.d.). Retrieved from

<http://www.greenreportcard.org/>

The History of the Community Garden Project. (n.d.). Retrieved from

<http://www.stcloudstate.edu/communitygarden/history.asp>

The League of American Bicyclists. (n.d.). Retrieved from

<http://www.bikeleague.org/>

- The State of Consumption Today. (n.d.). Retrieved from
<http://www.worldwatch.org/node/810>
- The Waterhub® at Emory. (n.d.). Retrieved from <http://sustainablewater.com/sw-overview/the-waterhub-at-emory/>
- Trinklein, A. (2009). Sustainability and Residence Hall Construction. *The Journal of College and University Student Housing*, 36(1), 24-37.
- United Nations. (2014). *Proposal for sustainable development goals: Sustainable development knowledge platform*. Retrieved November 13, 2014, from
<http://sustainabledevelopment.un.org/sdgsproposal.html>
- UNDP Quality Assurance and Professionalization Unit. (2008). Environmental procurement practice guide. *UNDP Practice Guide*, 1-23.
- United Nations Development Programme. (n.d.). Water supply and sanitation.
Retrieved from
http://www.undp.org/content/undp/en/home/ourwork/environmentandenergy/focus_areas/water_and_ocean_governance/water-supply-and-sanitation.html
- United Nations. (2014). The history of sustainable development in the United Nations. *Rio 20 - United Nations Conference on Sustainable Development*. Retrieved November 27, 2014 from
<http://www.uncsd2012.org/history.html>
- United Nations Agenda 21 – United States. (1997). Retrieved from
<http://www.un.org/esa/agenda21/natlinfo/countr/usa/natur.htm>

- USCIS (n.d). Citizen rights and responsibilities. Retrieved from
<http://www.uscis.gov/citizenship/learners/citizenship-rights-and-responsibilities>
- U.S. EPA Sustainability Information (n.d.). Retrieved November 12, 2014, from
<http://www.epa.gov/sustainability/basicinfo.htm>
- U.S. EPA, 2009. Sustainable Materials Management: The Road Ahead. (2009).
Retrieved November 12, 2014, from
<http://www.epa.gov/smm/pdf/vision2.pdf>
- United States Green Building Council. (n.d.). Retrieved from
<http://www.usgbc.org/>
- USGBC, (2013). Green building research [Fact sheet]. Retrieved from
<http://www.usgbc.org/Docs/Archive/General/Docs1991.pdf>
- Valluri, V. (2010). Campus gardens: A “growing” trend in campus sustainability
[blog post]. Retrieved from <http://www.aashe.org/blog/campus-gardens-%E2%80%9Cgrowing%E2%80%9D-trend-campus-sustainability>
- Wilkie, D. (2014). Rooting out hidden bias. *HR Magazine*. 59(12). Retrieved from
<https://www.shrm.org/publications/hrmagazine/editorialcontent/2014/1214/pages/1214-hidden-bias.aspx>

APPENDIX A

Interview Questions

Demographic Questions:

- Tell me about your current position and how you progressed in your career field to this point.
 - What type of institutions have you worked at or attended?
- What does your typical day look like?
- What areas are you responsible for?
- What sort of education and training have you received for your role?

1. How do you define sustainability?
 - How did you learn about sustainability?
 - What in your opinion is the importance of sustainability efforts?
 - When did you start hearing about sustainability?
 - What kind of personal practices of sustainability do you utilize in your life?
 - What does sustainability mean to you?
 - Has there been a big push for sustainability efforts at the university?
 - Why do you think this is?
 - What in your opinion are the main issues/areas of focus for sustainability on this campus?
 - At what level of priority do you believe sustainability efforts are on campus?
2. What type of sustainability efforts are you focusing on in their area?
 - What initiatives are you implementing in your department currently?
 - Who started these initiatives?
 - How has the process of implementing sustainable change (if any) to your department?
 - Was there any pushback from employees?
 - Why do you think this is?
 - What have you observed to be a struggle with implementing sustainability initiatives?
 - How have you individually influenced sustainability practices within the department or at the university?
 - What kind of assessment do you use to measure your efforts in sustainability?
 - How was the decision made to use this particular assessment?
 - How have you seen this assessment data provide use to the university and your specific area?

- Why is it important that you and your department implement practices of sustainability?
3. What sustainability efforts do you see the institution needing to move toward?
- What are some of the current university sustainability efforts?
 - How do these efforts impact sustainability?
 - Where have you seen the university implementing sustainable practices on campus?
 - Why were these specific initiatives started?
 - When did you see sustainability efforts become a point of conversation in higher education and at your institution?
 - When looking at sustainability on campus who do you believe to be responsible?
 - Who on your campus is responsible for maintaining sustainability efforts?
 - What factors have you seen in society or nationally that have impacted sustainability implementation on campus?
 - Are there any specific national or regional organizations that the university looks to stay current?
 - Which ones have you seen to be most effective for your university?
 - Looking at your university, what are a few efforts that you believe should be implemented?
 - Tell me more about what is holding these initiatives back?
 - Who do you believe should be starting these efforts?
4. How are sustainable efforts on campus impacting the student experience?
- What in your opinion is the importance to have sustainability on campus?
 - Who is responsible for sustainability at your university?
 - Who needs to be responsible for sustainability at your university?
 - Where have you observed students engaging in sustainability practices?
 - Where do you believe students should have involvement with sustainability?
 - How has the university efforts in sustainability impact the students attending?
 - Tell me how you have seen the university communicate and educate students on sustainability at the university?
 - How have you communicated sustainability efforts to your specific department or colleagues?

APPENDIX B

CONSENT TO PARTICIPATE IN RESEARCH

Understanding the Management of Sustainability on One Public Midwestern College Campus

You are invited to participate in a research study conducted by *Eric Swinehart under the direction of Dr. Dianne Timm*, from the *Counseling and Student Development Department* at Eastern Illinois University.

Your participation in this study is entirely voluntary. Please ask questions about anything you do not understand, before deciding whether or not to participate.

- **PURPOSE OF THE STUDY**

Sustainability is becoming a very important part of our society and there are many expectations from the national government and international society that is calling for new practices to cut the human contribution to destruction of the natural environment. This study is designed to assess the knowledge and qualification of administrators to lead and implement sustainability practices at their university and within their specific area.

- **PROCEDURES**

If you volunteer to participate in this study, you will be asked to:

Participate in an individual interview session with the primary investigator that will include open ended questions to gather data to answer the research questions of the study. Interviews are intended to last from 30min – 1 hour in length. You will be asked to share about your background in the field and how you have made it into your current role on campus. You will then be asked questions regarding sustainability practices in relationship to yourself and to your job position.

All interviews will be audio recorded digitally for record and data collection. Each interview will be transcribed to gather the data in comparison to other interviews conducted. The identity of each participant will be left confidential. After the interview is concluded the primary investigator and their faculty advisor will be the only individuals who will have access to the audio files in a secure location.

- **POTENTIAL RISKS AND DISCOMFORTS**

There are no short term or long term risks associated with this study.

- **POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY**

By participating in this study you will have the benefit of self-reflecting on your own specific sustainability habits as they relate to your personal and professional

life. The findings of the study can help to benefit how you implement new practices of sustainability in your office and how you continue to work to meet the national standards of reducing environmental impact.

- **CONFIDENTIALITY**

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of disassociating your name when referencing any quote from your interview. All digital data files will be stored on a password secured external hard drive that will stay in the possession of the primary investigator. Any physical data records will be kept in one folder and stored in a locked drawer of the primary investigator. The only two people who will have access to the digital or physical files are the primary investigator and the faculty advisor.

- **PARTICIPATION AND WITHDRAWAL**

Participation in this research study is voluntary and not a requirement or a condition for being the recipient of benefits or services from Eastern Illinois University or any other organization sponsoring the research project. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind or loss of benefits or services to which you are otherwise entitled.

There is no penalty if you withdraw from the study and you will not lose any benefits to which you are otherwise entitled.

The investigator may withdraw you from this research if circumstances arise which warrant doing so.

- **IDENTIFICATION OF INVESTIGATORS**

If you have any questions or concerns about this research, please contact:

Eric Swinehart
Work: (217) 581-7702
Cell: (224) 330-8183
Email: eswinehart@eiu.edu

Dr. Dianne Timm
Work: (217) 581-5327
Email: dtimm@eiu.edu

- **RIGHTS OF RESEARCH SUBJECTS**

If you have any questions or concerns about the treatment of human participants in this study, you may call or write:

Institutional Review Board
Eastern Illinois University

600 Lincoln Ave.
Charleston, IL 61920
Telephone: (217) 581-8576
E-mail: eiuirb@www.eiu.edu

You will be given the opportunity to discuss any questions about your rights as a research subject with a member of the IRB. The IRB is an independent committee composed of members of the University community, as well as lay members of the community not connected with EIU. The IRB has reviewed and approved this study.

I voluntarily agree to participate in this study. I understand that I am free to withdraw my consent and discontinue my participation at any time. I have been given a copy of this form.

Printed Name of Participant

Signature of Participant

Date

I hereby consent to the participation of _____, a minor/subject in the investigation herein described. I understand that I am free to withdraw my consent and discontinue my child's participation at any time.

Signature of Minor/Handicapped Subject's Parent or Guardian

Date

I, the undersigned, have defined and fully explained the investigation to the above subject.

Signature of Investigator

Date