Making Sustainable Behaviors the Norm at the University of Minnesota Duluth

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Abstract: Interviews with undergraduate students were conducted as part of a follow-up to a survey soliciting information about student engagement in sustainability at a small upper Great Lakes public university. The environmental psychology theoretical foundation for the study presented the potential interdependent role of social and physical conditions to support environmental behavior change. Twelve undergraduate students were interviewed with a goal of gaining additional insight into daily student engagement in sustainability. Hycner's (1985) guidelines were used for the phenomenological analysis of the interview data. Data were recorded, transcribed, and analyzed. The key finding was an affirmation of the idea that we must identify and eliminate barriers in order to support an increase in daily student participation in sustainability. Participants noted convenience as a key factor to consider. Numerous references to "back home" remind us that we need to make our campus function more like a community with systems that support engagement. Reflective analysis of all of the findings leads to a discussion of how this particular university can achieve the intent of its core value of sustainability. It is proposed that this university put more energy into changing norms than changing attitudes. Heberlein's (2012) behavior change guidelines are used to provide a strategy for addressing behavior change via an emphasis on normative behavior. Facilitating sustainability actions as normative behavior may be an effective first step in long-term attitudinal change.

Keywords: environmental psychology; environmental behavior; sustainability behavior; motivations, norms

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Background

Introduction

"Those are the things I do on a daily basis to live sustainably and it is really fulfilling I have found. It is a lifestyle and it makes so much sense…" (participant)

The above quote from a participant in this study speaks to the idea of sustainable happiness, an idea described by O'Brien (2010) as happiness that contributes to wellbeing without exploiting other people, the environment, or future generations. The quote also speaks to the core of this study, insight into the engagement of university undergraduate students in sustainability behavior. Sustainability has become an increasingly important part of the University of Minnesota Duluth's (UMD) identity as evidenced, in part, by the UMD Strategic Report of 2011 where sustainability was recognized as a university core value and a key part of the university strategic plan. For a university, both an institution and community, sustainability must be considered from multiple vantage points, from broad questions of physical infrastructure to specific behavior of community members. The idea of a campus culture of sustainability (Levy & Marans, 2012) encourages seeing the various elements of the community as a part of a dynamic system. One obvious and key part of this dynamic system is the student body.

An identified need at UMD in regard to sustainability efforts is an increased understanding of student participation. Barlow and Stone (2011) remind us that social systems, like school communities, need to bring people together in networks of support and conversation. This study presents conversations with individual students about their own engagement and perceptions of sustainability as a part of such a process. Additionally, there is concern that within university systems many people are unaware of how to incorporate sustainability into their lifestyle habits (Thomas, 2004; Nicolaides, 2006).

The everyday human choices and behaviors that affect natural processes have been referred to as environmentally significant behavior, environmentally responsible behavior, ecological behavior, etc. (Kaiser, 1998; Kaplan, 2000; Stern, 2000). Closely related, is the idea of sustainability behavior (Verdugo, Acosta, Fonllem, and Sing, 2011). Bonnes and Bonaiuto (2002) define sustainability behavior as the set of individual and collective deliberate and effective actions resulting in the conservation of the socio-physical environment for present and future generations. Sustainability behavior is both pro-ecological and pro-social and encompasses a wide variety of personal and collective actions and experiences involved in human uses of the ecologically considered environment (Bonnes and Bonaiuto, 2002; Verdugo, et al. 2011). These human factors are the focus of this study.

This study is designed to contribute broadly toward the cultural or human dimensions of environmental sustainability via a greater understanding of student engagement in sustainability behaviors. The specific questions guiding this research highlight the human behavioral factor:

1. What does student sustainability behavior look like at UMD?
2. What are the implications of current student engagement in sustainability to promote the UMD core value of sustainability?

This paper details the results of interviews conducted with UMD undergraduate students. The interview questions were developed from analysis of data from a 2012 survey of UMD undergraduate students. The initial survey was conducted in an effort to broadly assess awareness, attitudes, and behaviors regarding sustainability at UMD (Roatch, 2012). Roatch was able to demonstrate broad student interest, participation, and support for sustainability efforts on the UMD campus. The quantitative data, however, raised questions that could not be answered from the survey results. The survey results did, however, provide a quality base of descriptive data to guide development of student behavioral participation in sustainability interview questions used in this research.

Theoretical Foundations

In an acknowledgement of the potential interdependent role of social and physical conditions to support environmental behavior change at UMD, the field of environmental psychology provides a theoretical base for which to explore the noted research questions. Environmental psychology considers the range of complex interactions between people and the environment (Kollmuss & Agyeman, 2002) and "aims to study and understand people's environmental actions as localized and place-specific activities…carried out within certain contexts, with a theoretical orientation focusing on the interplay between people and their contexts" (Bonnes & Bonaiuto, 2002, p. 47). The foundation of the field of environmental psychology is based upon a deeper understanding of the spatial-physical dimension of the environment as a contributing part of human experience and behavior (Bonnes & Bonaiuto, 2002). The noted focus of environmental psychology on context, along with the emphasis of this research on UMD as a social and physical community, illuminates the need for a consideration of place when trying to gain a better understanding of environmental or sustainability behavior.

Research emphasizing norms helps to bridge the individual and collective in a greater understanding of environmental or sustainability behavior (Cialdini, 2003; Fishbein & Ajzen, 2010; Heberlein, 2012). Cialdini (2003) noted that the perception of social norms can have a significant effect on an individual's behavior. McMakin, Malone, and Lundgren (2002) included social norms as an example of a strong motivator for behavioral change; they presented a broad social-psychological model of energy conservation behavior, and noted that one of the factors of behavioral change was neighbor and friends' similar behavioral change. Fishbein and Ajzen's (2010) theory of reasoned action describes descriptive norms as perceptions about the behaviors of others and notes that the perception of social norms is one of the strongest predictors of behaviors. Heberlein (2012) identifies norms as "the most useful and powerful concept in the social psychologist's toolkit for understanding human behavior" (p. 90). Heberlein emphasizes norms as the key concept in environmental behavior given our ability to see norms, i.e. norms equal behavior. Heberlein's emphasis on norms is supported by the

literature of environmental psychology.

The process of talking to students about their own behavior and the behavior they observe speaks, in part, to this norm-based approach to environmental change. Participants in this research have identified a broad spectrum of sustainable behaviors at UMD and in doing so have also highlighted barriers to participation in sustainability behavior. Heberlein's (2012) presentation of norms as the key to changing environmental behavior will be used to help guide the analysis of the data collected. Results of this study will be considered within Heberlein's (2012) behavior change guidelines which note the following factors as essential to broad based behavior change: identification of clear and specific behaviors, engagement of high status public leadership, identification of norms consistent with institutional values and adequate time to allow for ideas to evolve and expand.

Methods

Participants

The population for this study is full time undergraduate students representing all five colleges at UMD. UMD Information Technology Systems and Services sent a request for participation to a randomly generated list of student email addresses supplied. The email to students requested up to one hour of the recipient's time to discuss sustainability on the UMD campus. All participants that showed interest via an initial response to the request email and followed up with subsequent scheduling (via email correspondence) were interviewed.

A random sample of the population was initially established (via the randomized email outreach) in an effort to seek participation from across the undergraduate population at the University of Minnesota Duluth; note, this was not done with the intent of generalizing back to the population. Participants in this sample then self identified their interest in participation via email response. Self-identification of participants was important so as to allow participants able to articulate their experience of sustainability at UMD. Hycner (1985) reminds us that an element of rigor is the ability of participants to fully describe the experience being researched, therefore it was hoped that using this selection process would combine an element of randomization with appropriate self-selection. Twelve interviews were completed.

Basic participant demographic information was collected as part of the interview process. Seven of the 12 participants were female and 5 were male. [Note, given that a majority of participants were female, and in keeping with efforts to protect anonymity, all results described will use female pronouns.] Two participants were freshmen, one was a sophomore, 3 were juniors, and 6 were seniors; two of the 12 indicated that they had transferred into UMD. Six of the participants were students in the Swenson College of Science and Engineering, 4 indicated that they were enrolled in the College of Liberal Arts (CLA), 1 of the CLA students indicated a double major with the School of Fine Arts, 1 student was enrolled in the College of Education and Human Service Professions; none

of the participants were enrolled in the Labovitz School of Business and Economics. Five of the participants lived on campus, 3 lived less than a mile from campus, 1 lived a mile from campus, 1 lived two miles from campus, 1 lived 2-3 miles from campus, and one lived 3-4 miles from campus.

It should also be noted that in keeping with Hycner's (1985) self selection notation of rigor, many of the participants had clearly identified associations with the experience of sustainability on campus. Two of the participants indicated that they were environmental sustainability majors; one indicated that she worked for a sustainability program on campus, and one indicated that she worked on the UMD farm with the Sustainable Agriculture Project over the previous summer.

Procedure

All participants were interviewed once during October-November of 2012. Interviews were conducted on the UMD campus. At the start of the interview session, participants were given a synopsis of the 2012 survey results and asked to read it to provide a starting point for the interview, i.e. a focus on UMD students and sustainability. Upon participant completion of the review of survey results, interviews were conducted and lasted for 20-45 minutes. Each interview consisted of a number of open-ended questions beginning with an opportunity for participants to respond to the findings of the initial survey. After the survey review, participants were asked to comment in general about anything of particular interest from the survey results. After the initial responses, participants were asked to detail the types of sustainability behavior they have observed in their day-to-day experience of campus life. Finally, participants were asked to detail their own sustainability behavior and to describe the motivations behind their personal behavior. Each interview was digitally recorded with the permission of the participant. To protect participant privacy and maintain anonymity, all participants were given an alias. The recordings were then transcribed and analyzed using Hycner's (1985) guidelines for the phenomenological analysis of survey data. The aim of the analysis process was to explore a deeper understanding of student engagement in sustainability at UMD.

Credibility, Dependability, and Transferability

Research terms including credibility, neutrality or confirmability, consistency or dependability and applicability or transferability are key criteria for qualitative quality (Lincoln & Guba, 1985). In this study, the terms credibility, dependability, and transferability are presented as concepts of quality applied to this particular process (Hoppe, 2011). Bloomberg & Volpe (2008) describe six strategies for credibility in a study; three of these strategies have been employed in this study. One, the researcher must present his bias and note any assumptions underlying the research. Two, the researcher must declare himself an observer and non-participant in the participant experience. Three, any negative or discrepant findings must be presented.

Dependability is determined, in part, though the detailed explanation of the analysis process (Bloomberg & Volpe, 2008). It is the responsibility of the researcher to carefully document procedures and demonstrate that coding and categorizing have been consistent (Bloomberg & Volpe, 2008). As previously noted, this research utilized Hycner's (1985) guidelines for phenomenological analysis.

This study does not claim to present findings generalizable to the entire undergraduate population at UMD or in other communities similar to UMD. Both the limited number of participants and the absence of a fully random sample prevent the results from being generalizable. Hycner (1986) reminds us, however, that although "…the results in a strict sense may not be generalizable, they can be phenomenologically [*sic*] informative…" (p. 295), thus providing insight and illumination about the relationship between students and sustainability within the UMD community. Closely related to the ideas of generalizability, transferability refers to "how well the study has made it possible for the reader to decide whether similar processes will be at work in their own settings and communities by understanding in depth how they occur at the research site" (Bloomberg & Volpe, 2008, p.78). It is presented that the findings here have the potential for a level of transferability given the amount of detail provided to the reader to establish relevance.

Limitations

Despite rigorous effort to eliminate bias, subjective influence of the researcher must be noted. At the beginning of each interview, the researcher presented his research bias of support for the UMD Strategic Initiative Plan as the source of this study. That said, while communicating support for the UMD identified core value of sustainability, the researcher attempted to clarify that he was not searching for any specific responses, e.g. responses of support for certain actions or ideas. The researcher attempted to stress the desire for responses detailing participant observation, opinion, and experience.

It should also be noted that use of the undergraduate student sustainability survey (Roatch, 2012) guided the development of interview questions used in this study. Additionally, each participant was given a synopsis of the 2012 survey results and asked to read it to provide a starting point for the interview. While use of the 2012 survey results was deemed as an appropriate method for creating a common interview starting point, use of the previous survey results had the potential to exert influence on participant response.

Results

Sustainability Behavior

A key finding of this study is respondent awareness and participation in sustainability efforts on the UMD campus, both on individual as well as an institutional level. See Table 1 for a list of the observed regular or daily sustainability-related behaviors noted. This information came from responses to the direct question of what sustainability

behaviors participants see and participate in on campus, as well as gleaned from responses to other questions. The list is not necessarily exhaustive, but includes the items that emerged with emphasis or repetition during the interviews. Participants indicated a high level of awareness and engagement in the behaviors noted.

Table 1

Sustainability Behavior at UMD Reported by Participants

Use of water bottle refill stations and regular use of refillable water bottles	Reuse of food containers for transport of meals (bags, Tupperware, etc.)
Water conservation, including "short showers"	Plastic wrapping of windows for heat conservation
Recycling (numerous materials)	Monitor of electricity use and turning off of unnecessary lighting
Choice of light bulbs	Commitment to not use plastic bottles
Commitment to use as little paper as possible	Use of motorcycle for transportation (noted gas mileage)
Use of surge strips to better regulate electricity use	Local food buying, e.g. community supported agriculture, Whole Foods Coop, farmer's market
Composting	Use of the bus
Walking to campus and other destinations	Biking to campus
Ride sharing	Use of re-usable batteries
Edible gardening on campus	

Table 1

Motivations

Participants were asked to share why they participate in sustainability behavior and to describe their motivations. Similar in breadth to the sustainability behaviors, the list of emphasized and repeated motivations is also extensive, from personal health to "making the world a better place." See Table 2 for a listing of many of the motivations participants noted. Two motivations emerged with especially detailed reference: cost saving and upbringing. Five participants indicated that saving money was an important motivator for their sustainability-oriented behavior. Avoiding the cost of operating a motor vehicle to travel to and from campus and paying for parking, were provided as examples of this cost saving motivation for not driving to school. Four of the participants discussed upbringing; participants noted how they were raised was a prime motivator for current sustainability oriented behavior. Statements such as "Ah, it probably has to do with my upbringing…" and "…because that's just the way I've been brought up to do it and so, that's what I do," were common in the data.

Participant relationship to the natural world was another motivation theme of noteworthiness. While responses in this broad grouping ranged from "a love of nature," to concern for place-specific settings, e.g. "Lake Superior" and "North Shore," the common thread of connection to nature seemed to emerge. Consider the following responses to the question of motivations for sustainability behavior:

- "I am a very nature-y person…I really love nature. I hate deforestation. I hate thinking about little animals getting trapped in our waste."
- "I just want to have my children know what trees are and my grandchildren know the smell of fresh air."
- "Then I come up here and it is Lake Superior and the North Shore and there is all this beauty."
- "I like seeing Earth green."
- "We live next to one of the world's largest freshwater bodies and some of the freshest water in the world."

One unique response to the question of motivation was the respondent that used the question of "why not?" as her motivator. She stated, "Well it is kind of like the argument for global warming, why do anything about that? But like, why not? Even if global warming is a myth and nothing is going to happen why not be more sustainable in general or like helpful to the earth in general?" Another interesting response to the question of motivation had to do with the idea of efficiency. This respondent described herself as "all about efficiency" and went on to raise concerns about the irrational behavior of using more resources than necessary. She detailed a high level of awareness of built environment infrastructure efficiency and land use efficiency concerns as her motivation to behave more sustainably. For example, she commented, "If we have a yard, why do we have grass in it when we could have a garden and get food from it?"

Key Themes

Two broad or overarching themes emerged from responses to all of the interview questions with strong ramifications for the UMD community: education and convenience. Ideas about how UMD can do a better job of educating community members about sustainability and sustainability related behavior was a common strand throughout the interviews. From participants' stories of their own education to suggestions for how the community can be more effective in raising awareness and educating its own members, the idea of education as a tool to support sustainability was key. For example:

- Three participants indicated that the stickers on the lights urging energy conservation were helpful reminders to engage in sustainable behavior.
- Two students indicated a need for a course designed for freshman and transfer students to introduce them to sustainability at UMD and to encourage student participation in the various sustainability programs on campus.
- One respondent questioned the waste generated in the chemistry and biochemistry labs and stated, "If there was a way to figure out how we can make like chemistry and biochemistry labs more sustainable, I think that would be really helpful."

- One participant, confident and articulate about the proper recycling/disposal of batteries, shared a story about a battery recycling training that she participated in. She described an activity based battery sorting activity where she learned which batteries could be thrown away and how to sort other types of batteries; this experience was noted to have made a significant impact on her behavior.

Table 2

Motivation for Sustainability Behavior Reported by Participants

Enjoyment, e.g. the joy of motorcycle use	Quality of bus system
Need for waste reduction	To benefit the local economy
To benefit the local ecosystem	Make the world a better place
Sustain what we already have	Opposition to privatized water
Relationship with Lake Superior	Give back
Personal health	Resource conservation
Avoiding hypocrisy	Love of nature
Concern about animals trapped in waste	Beauty of "up North"
Happy lifestyle	Efficiency
Convenience	Why not?
Cost saving	Upbringing

Table 2

Other education oriented suggestions/inspirations included:

- Use of the water filling stations to educate users how water station use was a positive contribution to the UMD community.
- Educational sessions needed to help students feel more comfortable using the bike racks on the bus.
- Use of a wide variety of media sources, e.g. video "No Impact Man."
- Use of quality course related textbooks, e.g. an advanced placement environmental science textbook noted.
- Peer modeling and educating, e.g. friend's high school presentation on the impacts of bottled water use providing inspiration to avoid purchase of bottled water.
- Positive role modeling of instructors sharing sustainability oriented behaviors.

The other overarching theme emerging from the interviews was convenience, with 8 participants addressing this idea from various angles. Personal convenience was often stated as a motivating factor behind certain behaviors, for example bus use was characterized as "convenient." Numerous participants urged making sustainable behavior

the convenient option. Another theme of convenience was systems-oriented, the idea that convenient systems are necessary to make sustainability behavior more widespread on the UMD campus; for example, one participant noted that if systems were "easy," she would definitely participate. Many participants noted that they engage in behavior "back home" because as one participant put it, "Everything is set up already." This "back home" vs. UMD idea was clearly evident in student description of dorm/apartment living at UMD in regard to sustainability, for example:

- Two participants indicated that composting was not possible for students living in the dorms.
- One participant noted that residents cannot easily remove leftover food from the Dining Center; she went on to suggest a system of reusable Tupperware or Gladware to prevent waste.
- One participant noted the absence of water bottle filling stations in the dorms.
- One participant noted that dish washing is difficult in some of the dorms making paper plate product use more widespread.
- Numerous participants urged development of a composting system for the apartments that is as easy as throwing garbage away.

Infrastructure

Despite the emphasis of this research upon student behavioral participation in sustainability on the UMD campus, many students wanted to discuss infrastructure-oriented aspects of sustainability on campus. Such interest reflected a high level of awareness and consideration for the broad question of sustainability. Examples of participant comments regarding UMD infrastructure include:

- One respondent noted various LEED certifications for campus buildings.
- The LEED platinum level certified Bagley building was noted by 2 participants as a part of UMD sustainability, the building was characterized by one participant "as good as it gets."
- One participant noted that solar paneling should not be used with inefficient buildings. If so, it is simply a "good feeling" type of action, but is "pretty much useless."
- The UMD steam plant was characterized as being very inefficient according to one participant based on her understanding from an engineering course on campus, "…you have one point in the process where you have high pressure steam and you have to go to low pressure steam and there is an expansion valve there and basically high pressure steam is very energetic and low pressure steam is less energetic, you have all that energy being wasted through that expansion valve…"

Discussion

"…environmental actions cannot be simply conceived as individual behavior…because they are nested in a broader social dynamic where even a single individual act seems to follow principles different from the logic of mere rational short-term interest" (Bonnes & Bonaiuto, 2002, p. 47).

One of the key findings of this research is an affirmation of the idea that "sustainable behavior is most likely when there are few barriers…" (Manning, 2009, p. 4). The findings emphasizing convenience, comparing "back home" to UMD, concerns about dorm/apartment life at UMD, and participant comments on the potential larger scale composting at UMD, are all examples of the need to consider barriers. These findings are also supportive of a deeper consideration for place as an important element of behavior; the noted UMD community compared to "back home" reminds us that place appears to be a variable in student behavior. Continual reminders that we need to address barriers (physical, social, cultural) in order to create easy access to systems that support sustainability is a key outcome of this study and supported by the sustainability/environmental behavior literature (McKenzie-Mohr, 2011; McMakin, Malone, & Lundgren, 2002). The research of environmental psychology has likewise shown that the capacity of theoretical models such as the Theory of Planned Behavior (Ajzen, 1991) regarding adoption of pro-environmental behavior relative to pro-environmental attitudes increases when external conditions make desired behaviors easier to perform (Bonnes & Bonaiuto, 2002). It may be that we do not need to emphasize attitudinal or perceptual change about sustainability per se, rather we need to prioritize the behavioral component. In other words, we need to change the social and physical default in accordance to the unique particularities of a specific place. Simply stated, we need to make sustainability behavior easy and participation accessible. The results of this study seem to support Heberlein's (2012) contention that the most successful environmental behavioral programs are those that "grew the norm rather than those that tried to educate the public" (p. 107). One participant addressed this idea of a change in the social default at UMD when she noted that, "humans are a very social species, we like to follow the group, we like to be a part of the majority if we can. So, if we have the majority doing it, there's going to be a lot more people willing to do it themselves…other people are gonna want to be a part of it too."

Heberlein (2012) details how attitudes often lag in regard to social-behavioral change campaigns and uses the anti-smoking and recycling campaign histories as evidence of the relationship between behavior and attitude. An effective first step in long-term attitudinal change at UMD is facilitating sustainability behavior as the social default, the norm. For a tangible UMD example, consider a simplified food system noted by one participant that speaks to the possibility of changing the food waste norm at UMD:

- Food is prepared and consumed at UMD.
- Food related waste is both eliminated and recycled at UMD via deliberate systems—these systems can be further developed to support a reduction in non-

reusable waste and an increase in available organic matter. For example, food composting systems for consumers in the Dining Center and Food Court.
- Available food waste can be used to create organic matter to facilitate soil conditioning at the UMD Farm.
- Food is grown at the UMD Farm.
- Locally raised food from the UMD Farm can continue to be an increasing part of the food options sold in the Dining Center and Food Court.

Composting can very clearly be compared to the recycling norm via institutional structuring. This example, albeit simple, illustrates a key point in the International Talloires Declaration (a ten-point action plan for incorporating sustainability and environmental literacy in teaching, research, operations, and outreach at colleges and universities). Point 5 reads: "To set a good example of environmental responsibility by establishing programmes of resource conservation and waste reduction at all universities" (Nicolaides, 2006). This guiding principle when coupled with the research here is a reminder that infrastructure and individual behavior are interdependent. UMD has systems for the reclamation of recycle goods, and has a farm capable of the reclamation of food waste; the behavioral leap between recycling a pop can in the Student Center and composting an apple core in the Food Court is not a great stretch if the infrastructure supports it. If the action required by any one member of the UMD community is easy, in part because the infrastructure is accessible and convenient, then compliance may follow; with time, educational/administrative support, and increasing participation, a norm may change. A change in norms may ultimately help facilitate attitudinal change.

An implication for future study arising out of this research is a need for a deeper consideration of place as a variable in supporting sustainability behavior. Human place attachment, a term from environmental psychology, and sense of place, a term from human geography, refer broadly to the positive emotional bond that develops between an individual and the environment (Brown & Raymond, 2006; Ewert, Place, & Sibthorp, 2005; Jorgensen & Stedman, 2001; Stedman, 2002). Place identity refers to the emotional response regarding specific physical settings while place dependence is functional or activity-based connection related to a site-specific activity. The physical context of the university has been considered in this study; however, participant response indicates the possibility of place attachment and place identity having a specific role in the development of sustainability behavior. This possible role is worthy of investigation.

In conclusion, Using Heberlein's (2012) behavior change guidelines to consider specific sustainability behaviors, UMD is a prime candidate for positive change. See Table 3 for a consideration of behavior change guidelines coupled with an assessment of UMD's opportunity. These guidelines acknowledge that sustainability must be considered on multiple levels, from infrastructure to the individual. Further, the guidelines honor the idea that sustainability behavior is both pro-ecological and pro-social (Verdugo, et al. 2011). The example provided in Table 3 is just one example of a specific behavior that could be targeted in an effort to expand sustainable behavior opportunity on campus; many other examples exist, from waste reduction to transportation, etc.

The results presented in this study represent the type of conversations that are necessary in a community to ensure that all community members are taken into consideration when institutional change is a goal. Investigation and insight on the role of individual behavior illuminates implications for broader cultural change. Ultimately, these interviews indicate that there is much to learn and much to gain from consideration of the detailed daily experience of sustainability by UMD students.

Table 3

Behavior Change Guidelines and UMD Opportunity

Heberlein's (2012) Behavior Change Guidelines	Assessment of UMD's Opportunity
Clear and specific behavior	Systems like composting of food waste focus upon clear and specific behavior.
High-status public leadership	The UMD Chancellor champions the entire Strategic Initiative process. In addition, UMD has an office of Sustainability—providing visible and tangible leadership for sustainability on campus.
Norms consistent with values	UMD Core Value Sustainability: *We balance current environmental, economic, and social needs with those of future generations.*
Time	Great efforts on behalf of institutionalizing sustainability were taken at UMD beginning in 2009, and developing greatly since that time—this represents a significant time investment already in place.

Table 3

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