

# **SUSTAINABILITY CULTURAL INDICATORS PROGRAM: FIRST YEAR REPORT OVERVIEW**

## **MONITORING THE CULTURE OF SUSTAINABILITY AT THE UNIVERSITY OF MICHIGAN: FALL 2012**



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### **SUMMARY**

The Sustainability Cultural Indicators Program (SCIP) is a multi-year effort designed to measure and track the *culture of sustainability* on the University of Michigan's (U-M) Ann Arbor campus. It is intended to inform U-M officials and others responsible for day-to-day operations of the University including its academic programs. Furthermore, it is intended to serve as a model demonstrating how behavioral research can be used to address critical environmental issues within universities generally and in other organizational settings. Culture of sustainability is meant to reflect a set of values, behaviors, levels of understanding and commitment, degrees of engagement, and dispositions among a population such as members of a university community.

The findings presented in this report represent Year 1 or baseline measures against which data collected at the U-M in subsequent years can be compared. The findings are largely descriptive in that all survey responses are reported for the three key members of the University community---its students, faculty and staff. Two separate web questionnaires were developed --- one for staff and faculty, and one for students --- with questions built around the U-M Sustainability Goal areas - *Climate Action*, *Waste Prevention*, *Healthy Environments*, and *Community Awareness*. In fall 2012, more than 4000 students, 1000 staff, and 1000 faculty participated in the survey representing a 43.6 percent overall response rate. Summaries of key findings and index scores for 15 key indicators are provided in this overview.<sup>1</sup> The indicators represent baseline measures against which indicators for subsequent years will be compared.

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<sup>1</sup> The complete First Year Report is available at: <http://graham.umich.edu/leadership/scip>

## BACKGROUND

In October 2009, U-M President Mary Sue Coleman elevated the University's commitment to sustainability in teaching, research, operations, and engagement by creating the U-M Environmental Sustainability Executive Council. One of the first actions of the Council was endorsing a Campus Sustainability Integrated Assessment (CSIA) to analyze the U-M's sustainability efforts to date, benchmark against other institutions, and chart a course for the future through identifying long term goals for sustainable operations on the U-M Ann Arbor campus, including the Athletic Department and the Health System. The CSIA builds on a long history of sustainability commitments in U-M campus operations, such as implementing cogeneration technology at the Central Power Plant in the 1960s, adopting the EPA Green Lights and Energy Star programs in the 1990s, and more recently establishing LEED (Leadership in Energy and Environmental Design) Silver certification as the standard for new non-clinical construction projects where the construction value exceeds \$10M.

The final CSIA report outlines four high level themes – *Climate Action, Waste Prevention, Healthy Environments, and Community Awareness*. Accompanying the themes are Guiding Principles to direct the U-M's long-range strategy and 2025 Goals that are time-bound and quantifiable.<sup>2</sup> SCIP stems from the principles outlined under CSIA theme of Community Awareness. They indicate that the U-M will “pursue evaluation strategies toward a campus-wide ethic of sustainability” as articulated in President Coleman's September 2011 speech announcing the sustainability goals. Specifically, she stated that “we will scientifically measure and report our progress and behavior as a community...ISR (Institute for Social Research) researchers will measure the sustainability attitudes and activities of students, faculty and staff, as well as identify where we can improve.” Two separate questionnaires were developed --- one for staff and faculty, and one for students. While many of the questions were similar, different time frames and sequences were used in the two versions. With a primary objective of the project being to inform progress toward the CSIA goals, modules were developed with most questions focusing on transportation, waste prevention, the natural environment, food, and knowledge of U-M sustainability efforts.

## POPULATION AND SAMPLE

To ensure representation from all segments of the University community and to allow for subsequent analysis of panel data, the sample design aimed to obtain relatively large numbers from the entire student body and from the staff and faculty populations. Specifically, a stratified sample was selected by the Registrar's Office to yield approximately 1000 respondents from each undergraduate class (or cohort) and 400 graduate student respondents. At the same time, a stratified sample was selected by the University's Office of Human Resources with a target of 750 staff and 750 faculty. As noted in the summary, the overall response rate was 43.6%. Favorable response rates were attributable to several factors including a personalized invitation to participate in the survey from President Mary Sue Coleman, a series of reminder emails including one from men's basketball coach John Beilein, and a possible monetary incentive through a random drawing.

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<sup>2</sup> More information on the CSIA process, outcomes, and evaluation can be found at: <http://graham.umich.edu/knowledge/ia/campus>. Information on progress towards the 2025 Climate Action, Waste Prevention, and Healthy Environments goals can be found at: <http://www.ocs.umich.edu/goals.html>

## FINDINGS

### Climate Action

The U-M sustainability goals place a strong emphasis on greenhouse gas emissions in an effort to combat climate change. We now know that levels of understanding about climate change and its causes vary greatly among U-M students, staff and faculty, as do personal sentiments on the issue. **Overall, about 4 in 5 respondents are convinced that climate change is happening.** When asked about the strength of their belief, about half the students said they were “completely convinced” compared to nearly three-quarters of the faculty. The proportion of staff who were “completely convinced” that climate change is happening is comparable to that of students. Graduate students were more likely than undergraduates to give this response. The number of respondents who answered “don’t know” to the question was 5 percent or less for each group.

While there are significant numbers who express concern about climate change and understand its causes, members of the University community reveal mixed behaviors through their reported activities at work and modes of travel. On the one hand, University employees and students are making major efforts to decrease the amount of greenhouse gases emitted into the atmosphere. On the other hand, they are contributing to emissions through their collective actions. For instance, **nearly 4 in 5 faculty and staff said they always turn off the lights when leaving their workplace or do so most of the time. Yet, just half regularly turn off their computer when leaving their work place, half use power-savings settings on their computers, and less than one-third use a motion-sensor power strip.**

Travel behavior among faculty, staff, and students also contributes significantly to greenhouse gas emissions. **About three-quarters of the staff and faculty said they always or mostly drove a car from home to their work place during the past year.** In contrast, the numbers of staff-faculty who said they regularly use alternative modes of travel to work during the past year is small, with less than 10 percent from each group riding a bus, and fewer than 6 percent mostly carpooling or participating in a U-M van pool. **Not surprisingly, few students said they drove from home to campus. Overall, just 1 in 10 said they always drove or did so most of the time during the past year.**

### Waste Prevention

While the U-M’s Plant Operations is responsible for managing programs aimed at reducing and preventing waste, the actions of faculty, staff, and students play a critical role in diverting waste tonnage to disposal facilities. **To a large extent, staff and faculty are behaving in an environmentally responsible manner while at work. Among faculty and staff members, 9 in 10 said they always recycled bottles, containers, and paper products during the past year or did so most of the time.** Levels of waste reduction among students are relatively high but lower than those reported by staff and faculty. For instance, **70 percent of the students (compared to nearly 90 percent of staff and faculty) said they regularly recycled bottles, containers, and paper products during the past year.**

### Healthy Environments

With respect to achieving U-M’s goals of protecting water quality in the Huron River and purchasing or obtaining food from sustainable sources, there are few direct actions that students, faculty, and staff can take, except support appropriate University initiatives. Efforts by students such as encouraging more natural landscaping on campus and purchasing locally grown foods are such examples. Nonetheless, how individuals within the University deal with these issues on a daily basis in their home environment

reflects in part on a culture of sustainability. Accordingly, questions related to protecting the natural environment at home and sustainable food practices were asked of respondents.

Staff, faculty and students were asked a series of questions about lawn care and disposing of hazardous materials during the past year. ***For faculty and staff who had lawns and did respond, about half said they water their lawns regularly or sometimes and about 1 in 8 regularly use lawn fertilizer. The number who had used commercial herbicides or pesticides was smaller; 1 in 20 said they used these substances regularly and another 20 percent said they sometimes used them.***

With respect to obtaining sustainable foods, questions were asked about household purchases. ***When asked to estimate how much of their grocery purchases during the past year were sustainable food, 4 in 10 faculty said all/most or more than half, whereas about a quarter of both staff and students gave these responses.***

### Community Awareness

As part of U-M's guiding principle within the Community Awareness theme, the University committed to pursuing strategies toward creating a campus-wide culture of sustainability. As a starting point, it was decided to first learn the extent to which people are knowledgeable about sustainability in different domains and more specifically about their understanding of the U-M's sustainability initiatives.

***Sustainable Travel and Transportation.*** A significant proportion of staff, faculty, and students know relatively little about the range of options for traveling to and from campus and around Ann Arbor. ***When asked about Ann Arbor's Transportation Authority (AATA/"The Ride") a third of the staff and faculty said they know "not much/nothing" and nearly a third more said "a little".*** Students tend to know more about AATA. About half gave "not much/nothing" or "a little" with that proportion decreasing the longer students have been on campus. ***Similarly, staff and faculty are generally uninformed about the U-M bus system; when asked how much they know about it, approximately two-thirds responded "not much/ nothing" or "a little" compared to only 30 percent of the student body.***

***Waste Prevention.*** Staff, faculty and students varied in the degree to which they know about recycling. ***About half from each group said they knew "a lot" or "a fair amount" about recycling glass while somewhat more than half (56% of students and 57% of staff and faculty) gave these responses when asked about recycling plastic. Each group expressed a greater understanding about paper recycling.*** For example, 7 in 10 faculty and staff said they know "a lot" or "a fair amount" and 6 in 10 students gave these responses to the question about recycling paper.

***Protecting the Natural Environment.*** Levels of awareness about ways to protect the natural environment differ greatly within each group. ***For example, somewhat more than 4 in 10 staff and faculty said they know "a lot" or "a fair amount" about protecting rivers, streams, and lakes including their tributaries, native species, and habitat with the Huron River given as an example.*** Six in 10 staff and faculty said they only know "a little" or "not much/nothing". Students knew even less; more than two-thirds said they know "a little" or "not much/nothing".

***Sustainable Foods.*** Sustainable foods were defined as foods that are organic, locally-grown, fair-trade, from humanely-treated animals or animals that have not been given hormones or antibiotics, grass-fed beef, and fish from sustainable fisheries. ***In general, faculty tended to know more about each of these items than staff. Students were likely to know less than both groups.***

## Sustainability Indicators

Sustainability indicators are composite measures derived from one or more survey questions about a topic or concept. Numerical values were assigned to responses such that higher values represented the most sustainable forms of behavior or the highest levels of awareness, while the lower values represented the least sustainable behaviors or lowest levels of awareness. These values were then converted to a common 0-10 scale. Figure 1 on the next page summarizes the mean scores for 15 cultural sustainability indicators for students, staff, and faculty. The scores reveal several things.

*First, there is considerable room for improvement with regard to the behaviors, levels of awareness, degrees of engagement and expressed commitment to sustainability among members of the University community.*

*Second, the behaviors of students are far more in tune with the goal of greenhouse gas reduction than the behaviors of staff and faculty. This is largely due to differences in the ways each group travels to and from campus. Students are also likely to know more about transportation options available to them and are more engaged than either staff or faculty in sustainability activities on campus.*

*Third, compared to students and staff, faculty tend to act in a more sustainable manner with respect to conserving energy, preventing waste, purchasing food, and more generally, engaging in pro-environmental activities outside of the University. Faculty members also express a higher level of commitment to sustainability than others on campus.*

*Finally, students tend to be less knowledgeable than staff or faculty about protecting the natural environment, preventing waste, and sustainable foods. But they are more aware than faculty about what is happening at the U-M with regard to sustainability. Nonetheless, members of the staff are most aware of the range of the U-M's sustainability initiatives.*

## GOING FORWARD

SCIP is a multi-year effort designed to measure and track the *culture of sustainability* on the U-M's Ann Arbor campus. The Year 1 SCIP report is a culmination of the first year and based on its findings, which includes a set of cultural indicator scores, portrays U-M's culture as of 2012. In the months ahead, a second wave of data will be collected from samples of students, staff, and faculty to see if there have been changes in the culture of sustainability over the past year as a result of University initiatives (such as Earthfest or the Planet Blue Ambassadors online certification program) and other factors.

As noted above, findings covered in the Year 1 report are primarily descriptive showing differential responses among the U-M's students, staff, and faculty. It is expected that the data will be further mined in order to test hypotheses and consider factors that may be associated with indicator scores. In anticipation of such work, the Graham Institute is developing mechanisms to provide those making inquiries with access to and guidance in using the data.

Efforts are also taking place to share this work beyond the University. Over the past year, for example, we have discussed this important work in Brazil, India, Taiwan, and Ireland, in addition to venues throughout the United States. Because of the groundbreaking nature of SCIP, its relationship to the many initiatives designed to promote sustainability throughout the University, and its importance in addressing cultural issues and behavioral change when dealing with complex and pressing environmental problems, we are eager to see the program replicated elsewhere throughout the world.

Figure 1

## SUSTAINABILITY CULTURAL INDICATORS FOR STUDENTS, STAFF, AND FACULTY

