

SUSTAINABILITY CULTURAL INDICATORS PROGRAM: THIRD YEAR REPORT OVERVIEW

MONITORING THE CULTURE OF SUSTAINABILITY AT THE UNIVERSITY OF MICHIGAN: FALL 2014



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INTRODUCTION

The Sustainability Cultural Indicators Program (SCIP) is a multi-year project 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 administrators 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 attitudes, 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 the results from Year 3 and provide a comparison to the Year 1 results (baseline measures). The findings are largely descriptive in that all survey responses are reported for the three key groups of the University community---its students, staff, and faculty. Two separate web questionnaires are used for SCIP --- 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 2014, more than 4100 students including a panel of current undergraduate students who first completed the 2012 survey, 869 staff, and 1276 faculty participated in the survey representing a 30 percent overall response rate. Summaries of key findings,

response distribution tables for nearly all questions, and index scores for 15 key indicators are provided in this overview.¹

BACKGROUND

In October 2009, former 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. SCIP stems from the principles outlined under the CSIA theme of Community Awareness. They indicated that the U-M will “pursue evaluation strategies toward a campus-wide ethic of sustainability.” Two separate questionnaires are used for SCIP --- one for staff and faculty, and one for students. While many of the questions are similar, different time frames and sequences are used in the two versions. In 2014, most respondents completed the survey in about 15 minutes. As a primary objective of SCIP is to work closely with the goals of the CSIA, questionnaire modules were developed with questions focusing on transportation, waste prevention, the natural environment, food, climate change, as well as U-M sustainability efforts.

POPULATION AND SAMPLE

Records from the U-M's Office of the Registrar indicate that 42,844 full-time students were enrolled for classes at the Ann Arbor campus in fall 2014. At the same time, the U-M's Human Resources' Information and Data Services report that 5,855 faculty and 34,661 staff were employed at least half-time at the University. In order to ensure proportional representation from all segment of the University community and from all geographic parts of the Ann Arbor campus, the sample design aimed at obtaining relatively large numbers from the entire student body and from the population of staff and faculty. The sample design also includes a panel of individual undergraduate students who responded to the initial survey in 2012. In 2014, the targeted number of participants was exceeded in each cohort. Response rates were higher than reported in 2013. Completion of questionnaires was attributable to several factors including the personalized pre-notification email encouraging participation from President Schlissel, a series of reminder e-mails including one from women's head softball coach Carol Hutchins, and an offer of a possible monetary incentive.

¹ SCIP annual reports and other program materials can be found at: <http://graham.umich.edu/leadership/scip>

2014 FINDINGS

Climate Action

As in 2013, most respondents believe that climate change is real. ***Whereas 9 in 10 U-M respondents said that climate change is happening***, somewhat less than two thirds of the U. S. population responded in this manner. A small but significant proportion of the U-M community expressed uncertainty. When asked whether they thought climate change was happening, about 1 in 20 students and the same proportion of faculty said they “don’t know”-- one in 10 staff members gave this response. Among those who said climate change is happening, three-quarters of the faculty (77 percent), nearly two-thirds of the students (64 percent) and more than half the staff said they were “extremely sure” it was occurring. ***These numbers are significantly higher than the 2013 data with staff members showing the greatest gain (47 percent to 54 percent; $p < .01$) in those saying they were “extremely sure”.*** Students too were more certain that climate change was happening (60 percent to 64 percent; $p < .01$) although this was largely driven by graduate student responses (63 percent to 71 percent; $p < .05$).

Despite strong beliefs in climate change and feelings among many that human activity is its main cause, faculty, staff, and students varied in the manner in which they act to address the challenge. Whereas significant numbers make efforts to decrease their carbon footprint, others do not. For example, ***most faculty (85 percent) said they “always” turned off the lights when leaving their work place. Yet, three-quarters of them drive to and from work by themselves. Similarly, 90 percent of the students reported turning off lights when leaving a room and 7 in 10 “never” or “rarely” drive a car and park on campus. Yet, only half of the students living off-campus adjust their thermostats to conserve energy during cold or hot weather months.***

Waste Prevention

Recycling and reuse of materials by U-M faculty, staff, and students play a critical role in the University’s efforts to divert waste to disposal facilities. Material reuse also impacts University purchasing decisions. To a large extent, staff and faculty are behaving in an environmentally responsible manner while at work. ***Significant numbers of faculty (91 percent) and staff members (84 percent) said they always “recycle bottles, containers, and paper products” during the past year or did so most of the time.*** Many students engage in waste reduction activities, but they are not as diligent as staff and faculty. For instance, ***68 percent of the students (compared to 79 percent of staff and 94 percent of faculty) said they regularly “recycle bottles, containers, and paper products” during the past year.***

Healthy Environments

Students, faculty, and staff are likely to support U-M’s goals of protecting water quality in the Huron River and purchasing or obtaining food from sustainable sources. However, there are few direct actions that students, faculty and staff can take to achieve these goals. Nonetheless, individuals who are members of the University community can act to create healthy environments through their actions at home. Accordingly, questions related to protecting the natural environment at the place where they live and purchasing sustainable foods 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, nearly 4 in 10 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; just 1 in 10 said they used these substances regularly and a quarter 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, a third of the faculty and staff said all/most or more than half. Students were less likely to purchase sustainable foods. One in 4 students purchased sustainable foods at least half of the time.*

Community Awareness

As part of the U-M’s guiding principle within the Community Awareness theme, the University intends to “pursue strategies toward creating a campus-wide culture of sustainability.” Since the initial SCIP surveys in 2012, questions have been asked about awareness of travel and transportation options, waste prevention and conservation practices, protecting the natural environment, sustainable foods, and climate change. Additionally, respondents have been asked how much they know about specific actions being taken by the U-M in each of these domains.

Sustainable Travel and Transportation. With few exceptions, 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 the AAATA a third of the staff-faculty said they know “not much or nothing”, nearly a third said “a little” and the remaining third said they know “a lot” or “a fair amount.” Students tend to know more about AAATA; nearly half (45 percent) said they know “a lot” or “a fair amount”. Graduate students know more about AAATA than undergraduates (66 percent versus 35 percent).* Whereas awareness of AAATA among faculty and staff has not changed over the 3-year period, *students in 2014 are significantly less likely to know about public transportation than students in the 2012 sample.* Staff and faculty are also uninformed about the U-M bus system; when asked how much they know about it, *about two-thirds responded “not much or nothing” or “a little” compared to less than a third (29 percent) of the student body.* Nonetheless, staff’s understanding of the campus bus system increased over the past year from 38 percent to 43 percent ($p < .05$).

Waste Prevention. Staff, faculty, and students varied in the degree to which they understand or know about recycling. *Approximately half of the respondents from each group said they knew “a lot” or “a fair amount” about recycling glass while higher proportions gave these responses when asked about recycling plastic. Even more respondents expressed an awareness of paper recycling.* In 2014, awareness of composting was added to the questionnaires for student, faculty and staff. For each group, about one in 7 said they know “a lot” or “a fair amount” while the majority from each group said they know “a little” or “not much/nothing” about composting. *As in previous years, the 2014 respondents knew considerably little about recycling electronic waste and the U-M’s Property Disposition services.*

Protecting the Natural Environment. Knowing about ways to protect the natural environment differs greatly within each group. *For instance, nearly half of the 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; yet one in 7 responded “not much or nothing”. Students know even less; a quarter said they know “not much or nothing” and more than a third said they know “a little”.* These levels of understanding were comparable to those found in the 2013 sample.

Sustainable Foods. Within the context of SCIP, Sustainable foods is defined as foods that were organic, locally-grown, or were fair-trade foods, food 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.*

GOING FORWARD

The relatively large numbers of student, faculty and staff respondents each year enable the production of index scores for each of Ann Arbor's campuses, regions, and sub-regions of the most populated regions. These different geographic areas present opportunities to conduct experiments or trial programs in some places and not in others in order to determine the impact of new initiatives. Current regional outreach efforts by Plant Operations and an assessment and recommendations regarding "barriers to recycling" are two leading examples of how SCIP data can be used to gauge impact. SCIP research team members also meet frequently with units across campus to discuss survey results and ways to use SCIP results.

Ongoing analysis of panel data is also providing important insights into promoting a culture of sustainability among the undergraduate population. Findings show that contrary to expectations, there was no difference in level of engagement between sophomores, juniors, and seniors who participated in the panel. Nonetheless, engagement of individual students increased over the one year period. At the same time, students who lived for at least one year in a residence hall as well as those who lived with more people were more likely to be engaged in sustainability activities than those who lived off-campus during the two years. Finally, the analyses show that higher levels of student engagement directly increase awareness of waste prevention behavior which in turn, alter waste prevention and conservation behaviors.

Finally, following the release of the Year 1 report a program website was developed to share key results and materials. During FY 2014 there were over 1000 views of the [program website](#) and the Year 2 report was one of the top ten file downloads from the Graham website. More than 100 requests have been received for copies of the survey instruments from other institutions. Three book chapters and three journal articles have been produced and discussion of SCIP and its findings has been presented at 12 major conferences. In addition, two short animated videos have been prepared to succinctly describe SCIP. One is aimed at external audiences such as other universities, corporations, and cities while the second will be used within U-M.

INDICATORS

In order to summarize findings covering key concepts reflecting the culture of sustainability, several indicators were created for SCIP. The procedure consisted of two steps. First, conceptually related items were identified and, for each respondent, the coded or numeric values of the responses to each were combined or added together. The second step involved the creation of a common metric or scale for all indicators. This was necessary since the range of scores for each indicator varied. Some varied from one to four while others varied from eight to thirty-two. In order to make the indicators comparable and easier to understand, all the indicators were converted to common metric or a zero-to-ten scale. Table 1 provides a summary of all the indicators and any changes over time.

Table 1

***CHANGE IN SUSTAINABILITY CULTURAL INDICATORS
for STUDENTS, STAFF AND FACULTY - 2012, 2013, 2014***

(mean scores)

INDICES	Students			Staff			Faculty		
	2012	2013	2014	2012	2013	2014	2012	2013	2014
PRIMARY									
<i>Climate Action</i>									
Conservation Behavior	6.1	6.2	6.1	6.6	6.7	6.5	6.9	6.9	7.0
Travel Behavior	7.6	7.5	7.4	1.6	1.3	1.6	2.2	2.0	1.8 ↓
<i>Waste Prevention</i>									
Waste Prevention Behavior	6.6	6.6	6.7 ↑ ▲	7.0	7.0	6.5	7.3	7.3	7.4 ↑ ▲
<i>Healthy Environments</i>									
Sustainable Food Purchases	5.5	5.3	5.6 ▲	5.7	5.8	5.8 ↑	6.3	6.2	6.3
Protecting the Natural Environment	8.6	8.9 ↑	8.8	6.5	6.4	6.6	6.1	6.1	6.4 ▲
<i>Community Awareness</i>									
Sustainable Travel & Transportation	4.4	4.3	4.2 ↓	3.0	3.0	3.1	3.4	3.3	3.3
Waste Prevention	4.0	4.2 ↑	4.2 ↑	5.0	5.1	5.0	5.1	5.4 ↑	5.5 ↑
Natural Environment Protection	3.1	3.3 ↑	3.4 ↑	4.1	4.3 ↑	4.3 ↑	4.3	4.6 ↑	4.6 ↑
Sustainable Foods	4.3	4.5 ↑	4.8 ↑ ▲	4.7	5.1 ↑	5.0 ↑	5.6	5.7	5.7
U-M Sustainability Initiatives	5.1	5.1	5.0	5.4	5.6	5.3	4.9	5.1 ↑	5.0
SECONDARY									
Sustainability Engagement at U-M	1.3	1.4	1.6 ↑	0.9	0.7	0.7	0.7	0.7	0.7
Sustainability Engagement Generally	1.9	1.8 ↓	2.0 ▲	1.9	1.9	1.8	3.0	2.9	3.0
Sustainability Commitment	6.3	6.3	6.3	6.3	6.4	6.4	7.0	7.2 ↑	7.1
Sustainability Disposition	3.5	3.3 ↓	3.4	2.9	2.6 ↓	2.5 ↓	5.3	4.6 ↓	5.0 ↓
Rating U-M Sustainability Initiatives	6.6	6.4 ↓	6.5	6.7	6.8	6.6 ▼	6.4	6.5	6.4

↑ significant change from 2012 (p<.001)

↑ significant change from 2012 (p<.01)

↑ significant change from 2012 (p<.05)

▲ significant change from previous year (p<.001)

▲ significant change from previous year (p<.01)

▲ significant change from previous year (p<.05)