
Driving Transformative Change by Empowering Student Sustainability Leaders at the University of Michigan

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and Donald Scavia

The University of Michigan-Ann Arbor (U-M) is a large public university with a total campus population of over 80,000, including over 40,000 students. Founded in 1817, U-M's campus encompasses 3,153 acres with 571 major buildings. U-M's annual research expenditures top \$1.25 billion, largest among public institutions.

At the University of Michigan, we employ an innovative strategy that directly involves students in fostering institutional change for sustainability. This chapter contains three interrelated examples of how the Graham Environmental Sustainability Institute channels student energy and creativity to effect sustainability transformations on campus, while simultaneously cultivating leadership and change management skills among our students. The first story focuses on the creation and implementation of an innovative collaborative co-curricular effort—the Student Sustainability Initiative. The second highlights the building of an operational campus sustainability master plan through an Integrated Assessment research process. The third story focuses on how the classroom can be used to spark sustainability projects while building student skills.

The Student Sustainability Initiative: Student Impact through Collaboration and Integration

In early 2008, three University of Michigan graduate students, representing our Engineering, Law, and Public Policy schools, came to our Graham Sustainability Institute offices with enthusiasm and frustration in their voices. They described how U-M had more than three dozen student groups with sustainability interests, but lamented that these groups rarely worked together and often competed for both recognition and resources. Engineering doctoral student Darshan Karwat noted that because the University of Michigan is such a large and decentralized institution, this lack of coordination held students back from effecting large-scale change.

During the meeting, Darshan and his collaborators, Melissa Forbes and Mark Shahinian, planted the seeds for a plan they thought would solve this complex problem. They laid out a concept to better organize and empower all U-M students around sustainability, while simultaneously making students more credible in the eyes of the administration. What they had in mind would ultimately transform the institution's sustainability efforts.

With guidance and support from U-M's Graham Sustainability Institute, a boundary organization (Guston 2001) that connects academics, policymakers, and practitioners by facilitating sustained and vibrant interactions to solve wicked sustainability problems, the Student Sustainability Initiative (SSI) was born. Developed with an innovative organizational structure and mission, the SSI did not seek to be *the* sustainability student group on campus, but rather to provide a mechanism to allow for more effective communication among like-minded students and the administration.

This structure empowers the SSI to chart its own course, while also providing the group with insights into the inner workings of U-M. The SSI's mission is not to advance a particular cause, but to actively engage sustainability-minded students across campus to identify common interests and pursue goals that large numbers of students and groups can rally behind. In the first year, the SSI board hit the ground running, hosting roundtable events and gathering student ideas to establish shared priorities. Original SSI board member and engineering undergraduate, Merry Walker, noted that in the early days, by leveraging social media and other broad networks, SSI was able to pass information to the student body at large and create a movement calling upon U-M's administration to make a commitment to sustainability.

Two Student Sustainability Goals

The SSI began its work by organizing, publicizing, and hosting several gatherings involving hundreds of students, which resulted in two aggressive goals for the students to pursue in the year ahead. First, they wanted U-M to establish an operations-oriented sustainability office to complement the academic role fulfilled by our institute. Second, they wanted U-M to make a binding commitment to Leadership in Energy and Environment Design (LEED) Silver certification for all new building construction.

Over the course of the next several months, the SSI continued to shape its strategy—benchmarking best practices at peer institutions and

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consulting with U-M leaders to assess receptivity and better understand institutional challenges. Finally, the SSI drafted a letter to U-M president Mary Sue Coleman, formally requesting that she endorse the group's priorities. This letter brought together a year's worth of student work and was supported by clear data and analysis, which made a strong business case for taking action.

The result? In 2009, President Coleman officially launched the U-M Office of Campus Sustainability and made a commitment that all new non-clinical U-M buildings with capital costs above \$10 million would be LEED Silver certified. But she did not stop there. President Coleman also established the U-M Sustainability Executive Council, a policymaking body that she chairs comprising U-M's most senior leaders. She also named a Special Counsel to the President for Sustainability, and she declared that sustainability would be a top priority presidential initiative.

Could the SSI really have been responsible for all of this? The truth is that many forces—both internal and external—were at work here. For example, two of us worked closely with the SSI throughout the process, meeting with them regularly to provide insight and feedback on their strategy. These interactions helped the SSI to fine-tune their goals and messages so they aligned with other institutional priorities and resonated more clearly with U-M leaders. Our role, however, was to support the SSI in strengthening its own message and tactics. The reality is that the institutional shift would not have happened without the SSI's collaborative model, which was markedly different from prior student advocacy efforts on campus.

A New Approach

Since the 1960s, the University of Michigan has been renowned for student activism on issues ranging from civil rights to Vietnam to affirmative action. Advocacy is clearly in the DNA of our students, and the issue of sustainability is no exception. For more than a decade before the SSI existed, U-M students—either on their own or representing a student group—would regularly call on U-M leaders to advance various aspects of sustainability, with varying degrees of success. The problem was that many different, and sometimes conflicting, ideas were being voiced, greatly diluting the power of both the message and the messenger. To exacerbate the problem, messages and messengers changed regularly as students graduated or moved on to other priorities. This made it challenging for institutional leaders to prioritize and respond effectively to student requests.

The SSI alleviated these problems by establishing a clear mission, organizational structure, and succession strategy. This was critical because

it allowed U-M officials to have a point of entry to discuss sustainability interests with the student body. According to Dashan Karwat, "the institutional memory of SSI sends a smoother, more coherent voice to the administrators and student groups. Each new group of SSI leaders is thoroughly briefed about the history of the group, its past failures and successes, as well as about effective ways of communicating with students as well as administrators."

The SSI has also been successful because its leaders have functioned as "tempered radicals," people who succeed in organizations without compromising their ideological beliefs (Meyerson 2001). By wearing two hats (student organizer and U-M student employee) SSI board members effectively employ critical strategies that allow tempered radicals to succeed. For example, they initiate conversations that create connections with others who have similar values, beliefs, and identities; they develop the discipline to manage heated emotions to effectively move the agenda forward; and they frame the agenda in language that has legitimacy among those in power.

Each year, by design, the SSI board membership changes as some students rotate out and others remain on to provide continuity and organizational memory. As new student leaders emerge, priorities developed in partnership with their peers evolve. What remains unchanged, however, is the overarching purpose of the organization: to continually build and empower the U-M student community around this all-important topic and to work in partnership with U-M leaders to find common ground in advancing sustainability.

The SSI has helped to transform U-M sustainability efforts and their efforts have been publicly lauded on multiple occasions. The group's accomplishments earned them the 2009 Oikos International Student Entrepreneurship Award, and its contributions were praised in a landmark speech given by President Coleman in 2011, who stated: "The Student Sustainability Initiative, in particular, has pulled together dozens of student groups working to make the University of Michigan a more sustainable place. They are formidable, they have pushed us as an institution, and we owe them our thanks."

Campus Sustainability Integrated Assessment: Shaping the Campus by Connecting Students, Faculty, and Staff

The seeds sown in the early days of the SSI continue to bear fruit as is illustrated by a subsequent two-year project investigating sustainability efforts on campus. Shortly after the President's Sustainability Executive

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Council was established, its first action (in October 2009) was to endorse a comprehensive Campus Sustainability Integrated Assessment (CSIA). Integrated Assessment (IA) is a research framework we use at the Graham Institute to address particularly challenging topics by synthesizing natural, social, and economic information to help improve decision making. The CSIA was a comprehensive and open process to develop U-M’s operational “master plan” for campus sustainability. This complex project combined the enthusiasm of students, expertise of faculty, and experience of staff to advance U-M campus sustainability. The project also provided an opportunity for students to continue pushing the needle toward sustainability.

From the beginning, students’ interest and passion for the CSIA were clear—with nearly 300 undergraduate and graduate students applying for positions to work on the seven faculty-led analysis teams. Teams were eventually staffed by 77 student research assistants who completed over 10,000 hours of work. A significant benefit for students was the opportunity to be heard at the highest levels of the university. Ryan Smith, an engineering graduate student working on the Culture and Energy teams has observed that as his teams developed long lists of questions regarding U-M operations, staff members from the Office of Campus Sustainability were motivated and eager to serve as our source of data. In turn, “we were able to provide recommendations and analysis to help them improve their operations moving forward. We needed them and they needed us.”

Ultimately, the CSIA led to an initial set of goals and actions under four themes (see table 10.1): Climate Action, Waste Prevention, Healthy Environments, and Community Awareness.¹ Each theme has both a guiding principle and a 2025 goal:

- Guiding Principles are broad philosophies guiding long-range strategies through changing circumstances.
- 2025 Goals are time-bound, quantifiable objectives aligned with each guiding principle where progress is measured from a 2006 baseline.

Like the SSI, the CSIA project gave students an impactful way to deepen their commitment to sustainability—this time by using the campus as a living-learning lab to help develop the goals. Amy Braun was a member on the Purchasing and Recycling Team. She came to the project as a Master’s student in Environmental Policy and Planning and after working as an intern at U-M’s Waste Management Services Recycling Program. Her team, in particular, used the campus as a “lab” to craft recommendations that helped inform the Waste Prevention goal. When reflecting on

Table 10.1
University of Michigan Campus Sustainability Integrated Assessment Themes,
Guiding Principles, and Goals

Theme	Guiding Principle	2025 Goals
Climate Action	We will pursue energy efficiency and fiscally responsible energy sourcing strategies to reduce greenhouse gas emissions toward long-term carbon neutrality.	Reduce greenhouse gas emissions (scopes 1&2) by 25%. Decrease carbon intensity of passenger trips on U-M transportation options by 30%.
Waste Prevention	We will pursue purchasing, reuse, recycling, and composting strategies toward long-term waste eradication.	Reduce waste tonnage diverted to disposal facilities by 40%.
Healthy Environments	We will pursue land and water management, built environment, and product-sourcing strategies toward improving the health of ecosystems and communities.	Purchase 20% of U-M food in accordance with U-M Sustainable Food Purchasing Guidelines. Protect Huron River water quality by reducing runoff from impervious surfaces and reducing the volume of land management chemicals used on campus by 40%.
Community Awareness	We will pursue stakeholder engagement, education, and evaluation strategies toward a campus-wide ethic of sustainability.	There is no explicit stretch goal for this theme. However, multiple actions will educate our community, track behavior, and report progress over time.

the assessment, Amy said, "Our team met with a variety of stakeholders, including a long list of staff with hands-on knowledge of U-M systems, and our recommendations were stronger as a result. We even started the project by getting our hands dirty (literally and figuratively) by sorting waste created by students."

While our goal for the CSIA was to advance institutional sustainability, it clearly promoted the growth and development of students as well as their understanding of sustainability, institutional change, and their roles as leaders. We anonymously surveyed students about their experience at the midpoint and conclusion of the project. At the midpoint, with enthusiasm still running high, nearly two-thirds of the students said they felt their individual efforts and the overall CSIA were making significant contributions to advance sustainability at U-M.

Integrated Assessment Themes,

2025 Goals

Reduce greenhouse gas emissions (scopes 1&2) by 25%.

Increase carbon intensity of passenger trips on U-M transportation options by 30%.

Reduce waste tonnage diverted to disposal facilities by 40%.

Purchase 20% of U-M food in accordance with U-M Sustainable Food Purchasing Guidelines.

Protect Huron River water quality by reducing runoff from impervious surfaces and reducing the volume of land management chemicals used on campus by 40%.

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to increase institutional sustainability through development of students as well as institutional change, and their education about their experience with the project. At the midpoint, with feedback from the students said they felt the IA were making significant

However, closer to the conclusion of the project student enthusiasm began to wane. Many student research assistants voiced concerns about whether their sustainability ideas generated through the CSIA would actually be implemented. Brennan Madden, the Transportation Team's student lead and a graduate student in the School of Natural Resources and Environment, commented that, "some decision makers were open to the overall motivation of our ideas but not supportive of some key specifics, which lowered our expectations of implementation."

In the second survey, staff at the Graham Institute found fewer than half of the students believed their efforts would make a meaningful contribution. Most of this decline could be explained by the students' realization that their detailed analyses were not wholly sufficient to bring about meaningful institutional change, nor implement specific projects, as noted in the following anonymous student comment: "The Integrated Assessment has significant potential to establish U-M sustainability leadership. However, its product is a framework for action that requires political will for its promise to be fulfilled. Success depends on whether that element is present."

When we discussed preliminary goals with the student research assistants, they voiced concerns that the CSIA's proposed targets were insufficient and did not reflect U-M's potential to show leadership. Kate Harris, a graduate student in the School of Education and the School of Natural Resources and Environment who served on the Purchasing and Recycling Team, along with other campus sustainability student leaders, drafted a letter to President Coleman calling for the U-M to "set the bar higher." The letter specifically called for stronger goals based on peer institution research and institutional knowledge gained as part of the CSIA experience. The letter was circulated among student research assistants from both phases of the CSIA and edited based on their feedback. Kate felt the letter "was necessary because the IA was supposed to set the bar for what we thought we could achieve, and I thought U-M really underestimated its ability to do great things."

Ultimately, the letter was endorsed by thirty-six of the student research assistants working on the project—many because they were disappointed that their teams' more ambitious recommendations were trumped by perceived limitations of the larger institution. The need to balance research teams' visioning and recommendations with views of operations staff was a challenge that we needed to address throughout the IA. The final goals were in many cases, stronger than some staff members were comfortable with and weaker than some of the students and faculty thought were possible.

While certainly not the first student letter the president received, the experience from the CSIA gave the students more confidence, a stronger voice, and positioned them as effective change agents to help advance the project's sustainability goals. The students' words clearly showed their passion, how well versed they had become in the campus sustainability movement, and how they were now empowered by the CSIA to speak directly to U-M leaders. As a result of student input like this and continued communications with campus operations and external advisers, most of the goals were revisited and some were even changed to address student concerns.

A significant step came in September 2011, when U-M president Mary Sue Coleman and her Sustainability Executive Council used the results and analysis of the CSIA to establish sustainability goals. She made it abundantly clear that sustainability is a deep, underlying theme that will guide U-M into the future. Importantly, given the student work that occurred, she also highlighted the essential role of students in defining U-M's sustainability path. "Students," she said, "shape the University of Michigan in unexpected and profound ways. They plant seeds of ideas, they forge new trails, and they take us in exciting new directions. We would not be here today if not for our students' persistence, their enthusiasm, and their deep concern about the future . . . sustainability defines the University of Michigan." Progress toward the goals is reported annually in the U-M Sustainability Report, and the goals will be revisited every five years to gauge success, review project ideas, and examine the need to make revisions.

The CSIA and the subsequent goal setting did not end with President Coleman's speech. Given the high degree of student involvement in the project, the CSIA continues to seed innovative student-focused sustainability initiatives. Key ideas identified through the CSIA include a new \$50,000 annual Planet Blue Student Innovation Fund, which will be used to support the best and most innovative student-developed campus sustainability ideas and the new Planet Blue Ambassadors program. The ambassadors program, similar to successful peer-to-peer Eco-Rep initiatives on other campuses, is being implemented in dorms and other campus buildings as a partnership of the Graham Institute, University Housing, Office of Campus Sustainability, Student Sustainability Initiative, and the Voices of the Staff Environmental Stewardship Team.

Through her involvement in the CSIA, Kate Harris describes how she has learned to navigate the institution more easily: "Now, I walk into a meeting and speak the same language—being able to reference 'powerful' people in the organization, as well as offices, documents, and basic

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institutional knowledge has gotten me further than I could otherwise. The lesson there is that you have to know a system before you can change it."

Sustainability and the Campus: Building Leadership Skills through Campus-Based Projects

With students continuing to push for sustainability through the SSI, and new operational goals resulting from the CSIA, the Graham Institute felt an increasing need to engage students systematically and directly in campus sustainability efforts in a structured way, while simultaneously developing their leadership and change agent skills. The Sustainability & the Campus 3-credit, undergraduate course helps fill this need with a dual mission: 1) getting students' "hands dirty" through leading campus sustainability projects in conjunction with U-M staff sponsors; and 2) developing change management and sustainability leadership skills that move beyond the classroom into the professional arena. The intellectual framework for the course is derived from the organizational change and systems thinking for sustainability literature, with the core content derived from a deep study of U-M's sustainability efforts.

Housed in the U-M's Program in the Environment, the course focuses on student team-based projects sponsored by operational staff. Serving nearly eighty students per year, the course serves as a critical training arena for students and a venue for advancing projects that already have some level of operational support.

To assess the impact of the course on student development, the Graham Institute conducted surveys, interviews, and focus groups with twenty-eight students who took the course between 2001 and 2010, the forty-two students enrolled during the winter 2011 semester, and eleven staff project sponsors. The analysis focuses on the personal transformations and institutional changes the course engenders. One notable result is that Sustainability & the Campus students feel responsible for creating institutional change—they report an increase in leadership skills and empowerment even while battling bureaucracy. More importantly, the course helps forge connections and deeper understanding between students and operational staff through the creation of structured partnerships to manage the campus more sustainably.

While confidence and empowerment can lead to strong leadership skills, they come with a powerful but potentially confusing realization for students—change is far more complex than it appears. Almost inevitably, students begin their projects without understanding how it can take a team

of four to seven students an entire semester to accomplish something that seems so basic. *Can't we just start planting the garden? We need to add recycling bins to the Union, so let's do it! Staff members don't know much about sustainability, so let's educate them!* As Lily Springsteen, a Residential College and Organizational Studies student who helped start the Planet Blue Student Innovation Fund through the course, has noted: "We learned that while an outcome seems really simple, there are so many avenues for reaching that goal, but there is always another way to look at it."

This complexity tends to hit students particularly hard at mid-semester, creating a challenge in terms of guidance. Students often find themselves falling behind initial timelines, unsure about where in the organization they should be seeking support or approval, and adjusting their project scope and ambition. At this point, co-learning with project sponsors begins in earnest. Sponsors often begin projects from the opposite perspective of the less experienced students: after years of navigating the bureaucracy of a large institution, they can sometimes overestimate barriers to progress. Students help broaden their perspectives, and as Andrew Berki, U-M Office of Campus Sustainability Manager, notes: "Students bring that level of enthusiasm and out-of-the-box thinking to projects that people on the operational side, may not have . . . because the students don't have those limits in the back of their mind, they just open it up and bring all kinds of cool ideas."

Students can open doors difficult for staff to open. Lindsey MacDonald, a project sponsor while working at U-M Outdoor Adventures program has noted: "Students have a different kind of leverage than I had as a staff person."

While students put many hours into projects, sponsors who enter the project with the idea that students will only provide free labor are quickly disavowed of that notion. What students ultimately provide is energy, creativity, and enthusiasm—in addition to the many hours of labor. Most sponsors say the projects were successful because of unique student perspectives and their ability to move sponsors out of typical modes of thinking.

The real learning and advancement for the institution and leadership development for the students in the course comes from the mutual understanding and complex interactions with staff. While difficult to quantify or assess directly, the most transformational elements appear to be the ambitions and personal transformations of students, as well as the co-learning opportunities with staff, which ultimately advance sustainability projects on campus.

Criticality of Student Empowerment

Empowering student sustainability leaders is a strategy with multiple benefits for a university. Students bring valuable ideas and energy to the institutional change process, but that force is not easily harnessed into approaches and actions that can be embraced by university leaders. This chapter highlights how empowerment is critical to advance institutional change within and beyond the classroom. Deep and meaningful student involvement leads to unexpected outcomes, broadened perspectives, and new partnerships that are critical to institutional transformation. Moreover, these efforts help develop a cadre of students who are not only "sustainability-literate" but are comfortable with complexity, organizational change, and developing relationships that span traditional boundaries.

Notes

1. The CSIA final report can be found at: <http://www.graham.umich.edu/ia/campus.php>.

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Stories and Strategies for Transformation

Edited by Peggy F. Barlett and Geoffrey W. Chase

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