Building a Public Institution Sustainability Program from the Ground Up

Rick S. Kurtz, Associate Dean, College of Humanities and Social and Behavioral Sciences
Thomas K. Rohrer, Director, Great Lakes Institute for Sustainable Systems
Central Michigan University, Mount Pleasant MI 48859, U.S.A.

Introduction

Universities have often been described as a microcosm of the larger society. A medium-sized public university, such as Central Michigan University, has as part of its campus all of the elements of a small city. Universities are large bureaucracies; change is sometimes difficult to advance. However, the relatively autonomous governance structure of a public university provides a leadership opportunity to rapidly deploy innovative approaches to sustainability throughout the campus community. By securing both top administrative support and grassroots advocates for a more sustainable university campus, an effective program can, in principle, be instituted in a relatively short period of time. This paper reviews critical elements of our developing program which advance the three sustainability goals of environmental stewardship, sound fiscal management and a better quality of life for students, faculty and staff and the larger community (Bardaglio and Putman, 2009).

Development of an effective sustainability program involves a number of key events. These include securing executive support at the level of the President and Vice-Presidents; identifying champions for the cause in diverse areas such as facilities management, athletics, student groups, and faculty; and forming both internal and external partnerships to bring about a change in the institutional culture. Civic engagement and expansion of the institution’s program into the surrounding community by developing external partnerships in teaching, research and program implementation will expand the sustainability concept beyond the campus and into the greater metropolitan area.

Publicizing sustainability efforts and showing early successes, both in terms of environmental stewardship and cost savings, are key to developing a culture of sustainability within the institution and assuring support for continuation of the program. Measuring success and documentation of progress via annual reports is also critical. Partnerships with local and regional communities and businesses will further enhance any sustainability program and foster its spread into the larger community.

This process is transferrable to a variety of different public and private institutions both large and small. Leadership challenges involved in the program formulation and implementation process may be significant, but are not insurmountable. And since sustainability involves
resource conservation, community improvement and fiscal responsibility, it is a means of operation that addresses the key environmental, social and economic concerns of our century. Given the current state of the world, public institutions have a strong role in leading the way to assuring a more healthy, just and sustainable society for present and future generations (Cortese, 2003 and 2005).

**Sustainability on Campuses**

Not since the Industrial Revolution of the late 18th and early 19th century has the general public attitude toward the role of man and nature undergone such a profound paradigm shift. Andes Edwards refers to this as the “sustainability revolution” and notes that this change permeates all areas of society from commercial enterprises to public education and family life (Edwards, 2005). Leading the way in many communities are institutions of higher learning. As noted earlier, they are a microcosm of society with the ability to react more quickly than larger governmental institutions. While not as nimble as private businesses, colleges and universities do have the ability to incorporate institutional-scale changes in operations and organizational culture more rapidly than do state and local governments.

Rappaport and Creighton (2007) noted that a credible sustainability program for a college or university must consist of at least the following components:

1. A campus master plan which considers sustainability as a key element
2. Appropriate funding for implementation and monitoring of energy efficiency projects
3. Standards for new construction and major building renovations (LEED)
4. A campus-wide recycling program
5. Integration of climate change, energy issues, and sustainability across the curriculum
6. Encouragement and support for alternative transportation
7. Establishment of a baseline of the institution’s carbon footprint and GHG emissions.
8. Monitoring and reporting of improvements

In the early years of this 21st century, a small number of colleges and universities were leaders in the sustainability arena and were early adopters of all of these components. Most schools lacked a comprehensive sustainability program but may have had recycling programs, some energy conservation projects, and a general awareness of environmental issues short of a fully institutionalized program. The bar continues to be raised for sustainability programs with both social and fiscal pressures advancing the cause in the public and private sectors. For colleges and universities, the relative “greenness” of their campuses is now a critical factor for incoming students as they decide where to pursue their higher education (Egan 2006). Institutions adopting solid sustainability programs will benefit from a competitive advantage in the academic marketplace where the pool of new students is shrinking significantly and the
recruitment and retention of the best faculty and staff is as critical as ever to the well-being of the institution (Eilperin, 2005).

As Dr. Frank Rhodes (2006), president emeritus of Cornell University, has stated, the concept of sustainability provides “…a new foundation for the liberal arts and sciences” with an ability to focus curricular coherence at a time of drift and fragmentation. He notes that the broad reach of the issues of sustainability provides opportunities for experimentation, discovery and exploration which advance transdisciplinary learning and problem solving for our modern world (Rhodes, 2006). Establishing a sustainable community (or world) is not merely a technological process. It requires changes in culture and ethics as much as it does advances in engineering and technical systems. From a social equity standpoint, the university should strive to instill in students the right of all persons to have a fair and equitable access to the public trust resources of the planet and a decent quality of life. For this reason and others, the United Nations has declared the period of 2005-2014 as the Decade of Education for Sustainable Development (UNESCO, 2004).

A strong, well-integrated sustainability program is not only a boon to campus and community life, but is a significant help to the institution’s bottom line as well (Morris, 2005; Marans and Edelstein 2010). The early adoption of comprehensive sustainability programs by the Fortune 500 companies was primarily driven by the economic savings produced, with environmental and social benefits a valued but fringe benefit of the package. Our University has achieved an average of $1 million per annum in energy and water savings over the first three years of our program. Currently we estimate $1.6 million in savings on energy and water costs for the 2011-2012 fiscal year (Rohrer 2010). These savings have been funneled back into the budget to support additional conservation efforts which are expected to produce additional cost reductions in facilities management well into the future.

**Leadership Support**

Support of the top leaders of an organization is crucial to the successful establishment of a sustainability program in any organization. In the academic sector there are a number of executive groups which are encouraging top management to focus on sustainability issues. Perhaps the most dynamic of these is the American College and University Presidents’ Climate Commitment (ACUPCC), an outgrowth of the “Talloires Declaration”. Composed in 1990 at an international conference in Talloires, France, this was the first official statement made by university administrators of a commitment to environmental sustainability in higher education. The Talloires Declaration (TD) is a ten-point action plan for incorporating sustainability and environmental literacy in teaching, research, operations and outreach at colleges and universities (Clugston and Calder, 1999). It has been signed by over 350 university presidents and chancellors in over 40 countries (ULSF 2011).

In the case of Central Michigan University, our then President, Dr. Michael Rao, notified university administrators in 2008 of the need to develop a sustainability program after attending
a national meeting of university presidents and chancellors and hearing of the AUCPCC. A directive was issued from his office to the University Vice-President for Finance and Administrative Services to develop a campus sustainability advisory committee and institute a sustainability program on our campus (see Appendices). Prior to this directive there had been scattered and sporadic attempts by groups ranging from student organizations to facilities managers and certain faculty to make the campus more sustainable, but they had limited success due to lack of funding and/or administrative support. With the strong support of our university president and vice-presidents, the sustainability program became an organized and dynamic force on campus.

**Organizational Partners**

When strongly embraced by a college or university, a sustainability program is an integral part of each of its core areas: facilities management and maintenance; teaching and curriculum; research; community outreach and service; student life; development; athletics; and institutional evaluation, policy, and planning. Most universities that have successfully implemented a comprehensive sustainability program have done so by establishing a working group representing all of these diverse units in the organization (Pearce and Uhl, 2003). Furthermore, they have provided the group with authority to implement suggestions for improving sustainability on campus that has been decided by group consensus.

To foster success of the overall program, all of these diverse units must work together and be aware and supportive of the efforts of other organizational units. This can be accomplished by the formation of an interdisciplinary team with the responsibility and authority to induce meaningful change on the campus. This model has been successfully implemented by a number of progressive institutions including Stanford University, Arizona State University, Portland State University, the University of Oregon, the University of Vermont, the University of Colorado at Boulder, SUNY-Buffalo and many small liberal arts colleges, notably Middlebury College in Vermont (AASHE, 2011).

This contrasts with the general operation of the university wherein academic units commonly would have little interaction with facilities management, athletics or even the development office. New partnerships within the organization must be formed to assure success and integration of the program. Lines of communication must be opened to allow students, faculty, administrators and facility managers to work cooperatively toward overarching sustainability goals and objectives. All stakeholders should be involved in organizational decision-making to the greatest extent possible in order to assure that a sustainability program will be accepted and supported. At Central Michigan University this is accomplished through a Campus Sustainability Advisory Committee which meets monthly to implement our presidential directive on sustainability and to brainstorm on new initiatives to advance sustainability on campus and in the broader community. Organizational units across the university are now weaving sustainability into their core mission, goals and objectives.
Sustainability in the Curriculum

Within the American university there are many efforts underway to transform academic programs and create centers which foster interdisciplinary teaching, research and thinking, all hallmarks of education for sustainability. Thomas Friedman (2006) talks about this change to increasingly horizontal models of collaboration and creation in both the business world and academe and it is a key to developing a successful sustainability program. In the area of sustainability in higher education curricula, this means there is increased value in cross-departmental collaboration as well as in spending more time addressing real world issues and linking students and professors with the rest of the external community. This interdisciplinary or “transdisciplinary” approach to education is at odds with the historic trend toward specialization within traditional academic disciplines which we have seen over the past many decades at U.S. colleges and universities. Breaking down the barriers of traditional academic department silos and encouraging interdisciplinary cooperation is one of the requirements (and, ultimately, benefits) of infusing sustainability into the curriculum.

Central Michigan University and many other schools are responding to the needs of employers for a new workforce with operational skills in sustainability by adding to our academic offerings in this area. Programs in sustainability studies and related programs in sustainable development, sustainable agriculture, sustainability education, and sustainable business are emerging at several schools around the country. For instance, Arizona State University’s new School of Sustainability in Tempe began offering B.A., M.A., and Ph.D. programs in September 2007; Prescott College and Antioch New England began offering graduate degrees in education with a sustainability focus in 2005 and 2006, respectively. Many other colleges and universities offer undergraduate majors and minors with a sustainability component. In our own case we are revamping and rebranding our Environmental Studies -Policy curriculum to become a “Sustainability and Environmental Policy” major. We have an 18-credit hour online certificate program in Sustainability and Environmental Awareness in development which will provide training and credentialing in the field to working professionals.

Professional schools, particularly in business administration, are also responding to the sustainability challenge by offering courses and certification in sustainability. Our own College of Business Administration has added an undergraduate minor in sustainable development and a concentration in the MBA program in sustainable international development. In addition to specific programs and concentrations, we are beginning this year to work with all departments to weave principles of sustainability into diverse curricula across the university. We must remember that colleges and universities in the United States teach over 14.5 million students each year (Herman Miller, 2005) and that these future leaders will have a critical role in moving our country to a more sustainable future. Securing sustainability in the curriculum is critical.
Community Partners

Sustainable communities and a sustainable society are a significant component of sustainability programs, yet they invariably are stuck in third place behind environmental and economic issues. Public institutions can advance sustainability in local and regional communities by building partnerships with local units of government and private business. In our own case we worked with Union Township, which surrounds our campus, to develop sustainability programs which are linked to our campus activities. We were able to secure grant funding which allowed the township to perform energy audits and retrofitting of township buildings. This same grant provided demonstration funds for the erection and monitoring of a few residential-scale wind turbines. In addition to providing research opportunities for our students, the wind turbine project has helped to educate township officials and local citizens about the viability of wind turbine power in mid-Michigan. We have also assisted the township in extending curbside recycling programs and on a non-motorized pathway project. This work has helped to instill core sustainability values in the township officials and professional managers. Presentations of our work at professional conferences for state and local officials has had a role in advancing the cause of sustainability throughout Michigan. This multiplier effect continues to grow as we expand our outreach and cooperative research projects in other areas of the state and region. Securing local and regional partners to work with you has many rewards.

Documenting Success

To ensure that the initial enthusiasm and support for an institutional sustainability program continues into the future, it is important to document and quantify the success of your program. From the beginning, we have articulated a clear set of goals and objectives for each fiscal year in fourteen key areas. At the end of each year, these goals are evaluated and successes, along with any barriers to attainment, are documented in an annual summary report. Including the actual and estimated economic savings in this report and distributing it widely to senior officers and program managers throughout the university has helped to sustain funding and support for continuing our efforts. Nothing succeeds like success and nothing supports future efforts more than publicizing current successes, especially if they have a significant financial benefit to the institution. Our annual report is posted on the worldwide web and made available in hard copy by request (http://www.cmich.edu/Sustainability_Institute.htm).

Creating a Culture of Sustainability

One of our more amorphous goals has been to create a “…culture of sustainability…” on campus and in the broader community. In addition to documenting our success and widely distributing our annual report, we continually work to engage other faculty, staff and student leaders on campus in the sustainability effort. Faculty members serve as advisors to a number of student groups including the Student Environmental Alliance, Campus Grow, Take Back the Tap, and the local chapter of PowerShift®. We publicize our campus “green cleaning” efforts by having
permanent signage in campus buildings noting that buildings are now cleaned with green cleaning products. We have also had students in the art design studio class produce posters with sustainability themes that are distributed throughout our campus.

New recycling receptacles in the university colors with the tag line, “Chip In and Recycle” are located throughout campus. Our Vice-President for facilities management has a slide show highlighting advances in sustainability which is presented to various employee groups several times per year. In various internal publications and external media, we promote our slogan that “Sustainability is Central” and have distributed wristbands with this tag line.

We have proudly been listed as one of the top 100 “Cool Schools” by the Sierra Club for the past two years. Various units have won other recognition such as being named Michigan’s institutional “Recycler of the Year” by the Michigan Recycling Coalition. We continually try to have our University Communications group publicize these successes internally and externally. All of this has helped to make everyone on campus very aware of our sustainability program and helps to encourage active participation by faculty, staff, students and visitors to Central Michigan University. A strong culture of sustainability is developing.

**Sustaining the Planet**

The case can also be made that every institution should be working on a sustainability program to assure our continued well-being on this planet. This is especially true in the management and development of energy resources. The urgency of global action to combat the effects of climate destabilization have been emphasized by hundreds of groups and summarized well by the UN’s Intergovernmental Panel on Climate Change (UNEP, 2007). Energy security is a critical issue for every country and energy costs impact every enterprise, whether for profit or not. Energy is a trillion dollar business in the United States (Pruss, 2011). A clean-energy economy which shifts us from reliance on finite fossil fuel resources to sustainable energy sources will stabilize energy costs, produce new job opportunities and reduce our impacts on atmospheric chemistry. The overall economy will be strengthened, planetary resources will be more sustainably managed and the global community will benefit from reduced environmental contamination and a lower threat of climate destabilization. In short, we can’t afford not to make this change.

**Technology Transfer**

In the field of higher education, the Association for the Advancement of Sustainability in Higher Education (AASHE). We intend to use the AASHE website and annual conference as an important venue for information exchange and technology transfer. The website of the Great Lakes Institute for Sustainable Systems will also serve as a repository to share the results of our work ([www.cmich.edu/gliss.htm](http://www.cmich.edu/gliss.htm)). We also will work with local K-12 school districts, community colleges, and other community groups to share the lessons learned from our work in energy and water conservation on our campus. The knowledge gained can be shared by performing energy audits for their facilities and recommending cost-effective changes that will reduce energy consumption and save them money. This will be done with no upfront cost to the organization.
under a contract which helps support future work by rebating to us 10% of their annual savings achieved as a result of our audit and recommendations.

A medium-sized public university, such as Central Michigan University, has as part of its campus all of the elements of a small city. Over 30,000 people live, work and learn on our campus daily. The lessons learned here can be applied to public and private institutions of all sizes as well as small to medium-sized communities. Our ecological, social and economic “footprints” are largely invisible to most of us, except in the most abstract way. It is hoped that our efforts here can help to raise awareness of the need to live more sustainably and to promote resource conservation, fiscal responsibility and healthy communities.

**Literature Cited:**


Herman Miller, Inc. 2005. Creating a Culture of Sustainability: How Campuses are Taking the Lead. 9 pp.


Great Lakes Institute for Sustainable Systems
MEMORANDUM

Office of the President
Warriner Hall 106
Central Michigan University
Mt. Pleasant, Michigan 48859
Voice: 989/774-3131
Fax: 989/774-3665

To: David Burdette

From: Mike Rao

Date: January 23, 2008

Subject: Campus Sustainability Advisory Committee Charge

David, as you are aware, the issue of campus sustainability is very important. I believe firmly that the university needs to be very proactive in moving toward sustainable efforts to ensure the long-term success of our students, employees, institution, and community. This effort should be both an opportunity to instill in the CMU community and beyond a way of life, and also model excellent examples and experiences for student, faculty, and staff learning.

As such, I request that you lead the university’s effort as Chair of a Campus Sustainability Advisory Committee. I request that you, on my behalf, issue the attached charge and oversee the efforts of this advisory group and plan.
Thank you for your leadership to this initiative. Please keep me informed on a regular schedule (of which you should inform me) regarding your progress on this critical topic.

MR/jfs

Central Michigan University
Charge to the Campus Sustainability Advisory Committee
January 23, 2008

There is an immediate need for a coordinated effort to address sustainability issues at Central Michigan University. CMU President Michael Rao has established the Campus Sustainability Advisory Committee to study and address the issues of environmental usage, energy conservation, local buying practices, climate control, and CMU’s carbon footprint to ensure that Central Michigan University is striving to be ecologically sound, socially just, and economically viable now and for future generations.

The Campus Sustainability Advisory Committee will serve as an advisory body to the President and/or his designees regarding university actions and practices that promote sustainability, with a strong focus on student and faculty involvement.

Within one year, the Campus Sustainability Advisory Committee, in concert with existing campus groups, organizations, committees, and/or offices, will:

- Complete a comprehensive inventory of CMU’s past and present energy use, greenhouse gas emissions, and building growth.
- Develop a comprehensive plan to stabilize and reduce long-term energy and utility costs while recognizing future growth needs of the university.
- Draft an energy-efficient appliance purchasing policy for adoption by the President that promotes the purchase of Energy Star® certified products.
- Formalize sustainable design and operations policies so that all new campus construction and major renovation projects are built to LEED specifications.
- Develop an institutional action plan with target dates, goals, actions, and mechanisms for tracking the progress of CMU’s sustainability efforts.
Beyond the first year, the Campus Sustainability Advisory Committee will:

- Determine the appropriate level and recommend a target percentage of electricity that should be purchased or produced from renewable energy sources. Recommend a deadline for which CMU should achieve the target.
- Determine and recommend the target percentage by which CMU should reduce greenhouse gas emissions. Recommend a deadline and strategies for achieving the target.
- Complete a comprehensive review of additional initiatives and activities that will further the university’s commitment to sustainability.
- Partner with senior leadership to model appropriate behaviors, raise public awareness, and integrate sustainability into the institutional culture.
- Engage and encourage academic leadership to integrate sustainability into the curriculum.
- Incorporate sustainability concepts into existing purchasing policies and practices.

Through the Campus Sustainability Advisory Committee, CMU will seek relationships and partnerships regionally, nationally, and internationally that will further the stated objectives for sustainability, and will strive to serve as a model institution of efforts that ensure the future sustainability of our shared planet.

©2011 All Rights Reserved