

Grassroots participation integrated with strong administration commitment is essential to address challenges of sustainability leadership: tools for successfully meeting in the middle

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Abstract As higher education addresses the challenges of climate neutrality and sustainability, responsibilities mount on leaders of interdisciplinary environmental and sustainability academic programs (IEPs). Sustainability operations and academic programs help create cultures of sustainability, engaging students, faculty, and staff. As this culture develops, it must mesh with the planning, budgeting, and decision-making processes of senior administrators. This integration process requires an interdisciplinary approach to understand the differing missions and objectives, vocabularies and key concepts, administrative structures, and cultures not just across all academic units but also across all non-academic units. Organization of sustainability activities takes a wide range of forms, from a centralized model where academics and operations are combined within a single unit to a distributed model where sustainability curricula, co-curricula, planning, and operations take place in a variety of units, linked through campus committees and sustainability plans. This paper examines the challenges and tested solutions to address sustainability leadership at an institutional level, across the range of organization models, from centralized to distributed. One common element of these solutions is top-down commitment, combined with bottom-up participation in the development and implementation of new efforts in sustainability education and operations.

Keywords Sustainability leadership · Culture of sustainability · Solutions for sustainability leadership challenges

Introduction

Discussions in recent workshops by the Association of Environmental Studies and Sciences and the National Council for Science and the Environment's Council of Environmental Deans and Directors examined educational and operational activities, common to a wide range of institutions, used to improve campus-wide sustainability leadership. Both horizontal and vertical challenges exist: coordinating the range of activities occurring across different units on campus and integrating grassroots participation with senior-level planning. No attempt is made to comprehensively list best practices or the range of institutions practicing them, but this paper describes many of them, within the context of national trends.

A recent national survey finds that almost 700 universities have signed the American Council of University Presidents' Climate Commitment (ACUP CC), pledging support for sustainability efforts. Many have lagged in the implementation of plans to achieve those pledges (Hanover Research Institute 2011). The study reports that delayed or failed attempts are due to a lack of leadership, incentives, knowledge, and resources and concludes that support from top management in embedding sustainability within an institution is necessary. It also concludes that a bottom-up approach *may* also yield positive results.

This paper focuses on improving institutional sustainability leadership. Literature on the curricula associated with student degree and certificate programs in the field of sustainability leadership exists (e.g., review by Shriberg and MacDonald 2013), and there is even more work on academic leadership

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at senior levels. This paper focuses more upon the middle, not on individual academic programs or presidential-level leadership, and examines how to improve sustainability education and operations. Based upon discussions with dozens of sustainability professionals and academics, it is apparent that the mechanics of developing strong working relationships across institutional units charged with sustainability, with senior administration, and with students, faculty, and staff are a main focus of mid-level sustainability professionals. Building upon the work of Brinkhurst et al. (2011), this paper demonstrates that both bottom-up and top-down participations are required to effectively combine the financial and development authority of senior administrators with the expertise of sustainability faculty and staff and with the interests and energy of students.

Traditionally, interdisciplinary environmental and sustainability academic programs (IEPs) focus on the development and operation of curriculum and degree programs. With increasing recognition that IEP activities should increase the opportunities for student co-curricular, research, and internship experiences, the line between academics and operations blurs. Many institutions are developing shared programs between academics and facilities and operations, even though those units report to different senior administrators with differing priorities (Vincent et al. 2013). These initiatives, common to many institutions, are discussed in the solutions section and include campus-wide Ponderosa or Piedmont style projects (Barlett and Chase 2004), offices of sustainability, student-supported green funds, residence hall and other student mentor programs, action teams or task forces, climate commitment action plans, and a president's committee tasked to oversee it all.

Organizational models for sustainability: from the centralized to the distributed

Seldom are these disparate efforts organized within a single home in the institution and often for good reason. Offices of sustainability focus on operational activities, while degree programs focus on curriculum. To organize all these activities, two end-member models exist: the distributed model and the centralized model, with numerous examples spanning the gamut between them.

The centralized model is defined here as a single unit run by a PhD academic which oversees both the academics and operations focusing on sustainability. This model exists in small and large institutions, undergraduate and graduate, with and without major external funding. Executive directors, directors, or deans run these combined units in places including Middlebury College, Western Michigan University, and the University of South Florida (USF). Major institutional reorganizations or fundraising can drive this reorganization (e.g., Arizona State University or USF); other times, internal reorganizations are made without wholesale institutional reorganization.

Centralized organizations provide more efficient communication, more focused mission and objectives, and integrated, comprehensive planning, budgeting, and implementation. They do not solve all the challenges of sustainability leadership, particularly those associated with fostering campus-wide sustainability.

In a distributed model, multiple academic and facilities/operations units, reporting to multiple vice presidents, are responsible for sustainability activities. Distributed models can provide wider campus buy-in and participation and enhance the attitude that sustainability issues are a universal responsibility. In the absence of strong drivers for change like reorganization or external fundraising, it appears that the type of organization tends to follow the historical mission and organization of the institution. The distributed model tends to occur more frequently within land grant institutions and other institutions with strong applied research foci, which have developed multiple strong nodes focusing on environmental education, research, and outreach. These are institutions without a centralized sustainability school/college, but with sustainability programs widely distributed across campus, as well as an office of sustainability (e.g., the University of California, Riverside, the University of Colorado Boulder, the University of Arizona). Smaller colleges and universities do not have the same diversity of academic units but often have separate offices of sustainability and academic programs. Almost half of 354 surveyed IEPs are unit-spanning programs, approximately a third are campus-wide programs (30 %), approximately a fifth are stand-alone departments, and only 5 % are housed in dedicated schools, colleges, or centers.

A continuum exists between the centralized and distributed models (Vincent et al. 2014). One intermediate model has colleges or Schools of the Environment and Sustainability acting as a hub for, but not the *only* source of, sustainability curricula, with offices of sustainability located in facilities management/campus operations or the office of the president (e.g., University of Vermont and Northern Arizona University). An office of sustainability may be housed in the President's Office, but that does not necessarily mean that all sustainability activities, both operations and academics, are also centralized. Where activities occur and how many units sponsor these activities determine if an institution is more centralized or more distributed.

Institution-wide challenges for sustainability

Regardless of how the sustainability enterprise is organized, there are challenges common to hundreds of institutions. The first challenge is how to meet a commitment to sustainability. Through the ACUP CC, almost 700 presidents agreed to take tangible sustainability actions and develop plans to achieve climate neutrality (President's Climate Commitment.org

2015). A detailed and effective plan requires implementing successful communication and collaboration, as well as action, across the institution. Implementation tends not to come from the top: it is commonly a primary responsibility of mid-level sustainability professionals to address institution-wide challenges. Senior administrators or line faculty and staff are not usually charged with institution-wide sustainability initiatives. It falls to those mid-level professionals whose primary responsibilities involve sustainability to implement institution-wide activities (Second Nature 2011).

One important challenge these professionals must address is the integration and implementation of a shared concept of sustainability. Wide-open, bottom-up academic activities may be far different than the approach of facilities or operations professionals, used to stricter, command-and-control operations. Balancing and integrating these different activities can be accomplished through improved communications, both formal and informal. Having approaches from both units discussed routinely in campus-wide presidential sustainability committees is one solution. Participation in voluntary sustainability groups like an environmental caucus or sustainability fellows program is another. It also helps to develop concept and power maps for an institution to display the existence and interrelationships (or lack of interrelationships) between various sustainability activities.

The effective integration of the various cultures and expertise across academics and the entire institution is often called a “culture of sustainability.” It is the vertical and lateral integration of various cultures in pursuit of improvements in sustainability which requires the skills associated with interdisciplinary programs and a commitment to cooperate from all units. Vertical integration refers to the ability to move ideas and plans upward through the institution to attain buy-in by senior administration. It also refers to senior administration seeking and utilizing appropriate expertise across the campus and getting faculty, staff, and students to implement their sustainability plans. Horizontal integration refers to interdisciplinary cooperation between academic units as well as cooperation between academic and non-academic areas. “Silo busting” is not essential to this process (and can create a high level of disturbance) but “silo bridging” certainly is. Effective cooperation is necessary but insufficient. Successful implementation of sustainability initiatives requires the necessary leadership, resources, and expertise.

Activities for improving effective sustainability leadership

Several sustainability leadership activities are common to many campuses. Whether sustainability efforts are centralized or distributed, the solutions discussed below have been applied successfully. A key to the success of any of these

activities is buy-in across the campus, not just in units tasked with sustainability. Several of the activities are discussed below and help to achieve this buy-in.

With hundreds of campuses tasked to develop climate action plans, this planning process is one many institutions have in common. In addition to the plan itself, tracking of progress is required and tools such as STARS reporting (<https://stars.aashe.org>) or the global reporting initiative (<https://www.globalreporting.org/information/sustainability-reporting>) are ways to track progress toward successful plan implementation. A coordinated effort to gather data across the institution can create widespread participation and buy-in and contribute to a sense of a collaborative campus-wide effort.

Other activities common to many institutions include communications such as social media and Green.X.edu websites. A campus organizer and champion of sustainability operations, usually through an office of sustainability, is another common element. Environmental and sustainability curriculum and co-curriculum development is another. Finally, regardless of organizational model, there is often a president’s sustainability committee (PSC) to oversee it all. Based upon the author’s visit to a dozen different campuses and a review of more than 30 college PSC websites, I can make a few general observations. This central committee frequently reports back directly to the institution’s president. These committees tend to be relatively small in size and in scope. They focus on and represent middle and higher administration. To improve campus-wide commitment to sustainability and to solicit broad participation and idea development, they often have selected students, faculty, and staff from across campus.

The solutions discussed below assume the existence of these common elements.

Top-down solutions from senior administration

Strong institutional commitments from presidents are critical in planning and implementing sustainability actions and in encouraging campus-wide participation. These commitments include the ACUP CC, development of institutional Climate Action Plans and Campus Sustainability Plans, and inclusion of sustainability in institutional mission and goals. Additional commitments can include campus sustainability charters like UCLA’s or system-wide policy like the University of California system sustainability practices policy (policy.ucop.edu/doc/3100155). All of these plans and policies must have clear goals, an authoritative point person for sustainability, defined resources, and persons of responsibility for each objective.

The campus or PSC, a standing committee appointed by the president, should have a carefully considered charge and composition. The author has been able to visit several PSC meetings around the country and to familiarize himself with the activities of several more. I offer the following

observations. It is critical to have some representation from units across the campus to maximize buy-in and to demonstrate that sustainability is a campus-wide priority. To be effective, the committee must have authority. It is important not to conflate the mission of a PSC with broad representation; it should have senior administrators, capable of making resource decisions and allocations, from units across the campus. Broader input from a range of students, academics, and sustainability staff can also come to a PSC from other routes (see solutions under the [Meeting in the middle](#) section). Involvement of senior leadership in sustainability action teams and task forces (see below) lends authority to the work of these specialized groups. Especially where sustainability expertise is limited or community engagement is a very high priority, an external advisory board on sustainability (e.g., Penn State University) can be tied to the PSC.

To enact these plans, resources must exist to make informed decisions about institutional priorities. Linking sustainability plans directly to institutional strategic plans and budget processes allows the PSC better access to resource decision-making. Often, the budget process is a competitive one between units and/or a zero base one. In either case, broad sustainability initiatives crossing unit boundaries have no high-level champions. The president and PSC must ensure that sustainability initiatives, whether or not they are beyond the scope of a single institutional area of responsibility, are part of the budget discussions. Sustainability initiatives could have a budget line tied to the PSC and president. Another way to tie planning to budget is by integrating sustainability guidelines into all business/budget plans (e.g., University of Calgary).

Investment in sustainability initiatives can efficiently occur through the establishment of energy or resource revolving funds. These funds take a percentage of energy cost savings or cost avoidance and reinvest them in renewable energy and energy conservation initiatives. The Sustainable Endowments Institute (<http://www.endowmentinstitute.org/>) sponsors the billion dollar green challenge, a national initiative to set up these funds and currently has 49 participating institutions (<http://greenbillion.org/>). These funds are usually established at senior levels, but revolving funds have been established through student initiatives (e.g., <http://www.aashe.org/resources/pdf/CERF.pdf>).

Other investments build expertise: sponsoring or supporting grass roots-inspired workshops, seminars, and fellows programs for students, faculty, and staff. Curriculum-building programs like the Piedmont projects (<http://www.aashe.org/events/workshops/2015/Sustainability-Across-the-Curriculum-Jan-2015>) require administrative support. Residence hall and other student mentor programs focus on students. Cluster hires can engage multiple academic units and motivate them to focus on the interdisciplinary nature of sustainability in the natural and social sciences, arts,

humanities, health, business, and engineering professions. By giving multiple academic units the opportunity to jointly propose a cluster in sustainability, a president fosters the support of the faculty across those units and ensures that new hires meet existing as well as anticipated needs.

Bottom-up solutions from faculty, staff, and students

The energy, enthusiasm, and expertise of students can also drive sustainability improvements. Students can propel the creation of a revolving fund. Students are also responsible for the marketing, development, approval, and operation of campus Green Funds, generated by student fees. These fees, required or optional, are more popular at public institutions than private ones. Student-run committees are responsible for the soliciting and review of proposals to the funds, as well as the management of the funds.

Soliciting regular engagement from all members of the campus can be promoted through regular surveys or town halls (e.g., Western Michigan University) or in grassroots organizations. One example is the Environmental Caucus at Northern Arizona University, which reaches out across campus to students and employees interested in sustainability. Its more than 1000 members communicate and form action teams to promote and address sustainability solutions (<http://nau.edu/Environmental-Caucus/>). The caucus cooperates with both the office of sustainability and the PSC to run green websites and social media.

The development of curriculum and co-curriculum starts at the grassroots level, not just through the development of new courses but also through campus-wide initiatives. Faculty mentor faculty in Ponderosa or Piedmont type projects to develop new curricula. Curriculum development can also focus on institution-wide requirements. A sustainability course requirement is becoming an increasingly popular addition to general education requirements either as a stand alone or integrated into a more comprehensive generation education requirement. Northern Arizona University's Global Learning Initiative was developed by a Faculty Senate committee and approved by the Faculty Senate. It strives for integrated sustainability, diversity, and global engagement learning outcomes in every major.

Meeting in the middle

To better integrate the wide range of campus activities, and to incorporate grassroots and senior level participation, committed support is needed from senior administration as well as faculty, staff, and students. Where efforts to support grassroots participation exist, they commonly focus on communication (websites, meetings, and social media) and not as much on detailed collaboration, coordination, and incorporation of concepts into campus management and strategic planning. Even

where collaboration efforts have succeeded, they often had a narrow focus (e.g., on curriculum). There are three areas where integration of administrative and grassroots efforts can build broader sustainability solutions.

Building cultures

A culture of sustainability grows not just by having sustainability activities but also through communication, collaboration, and cooperation between units. Many institutions focus on communication using green websites, social media, and shared calendars of events. Collaboration and coordination can be promoted through town halls or caucuses. Forums (e.g., “hot topics café” style discussions) for debate and discussion can resolve conflicts and develop new partnerships for resolution of sustainability issues like renewable resource investments. Results of these forums, town halls, and caucuses must have a clear pathway to decision makers, for example to a PSC. Administrative support through faculty release time, internships, or graduate assistantships can assist logistics for these events. Offices of development and marketing are critical in working with sustainability experts to promote and market sustainability successes both on and off campus.

Staff, student, and faculty development

Sustainability champions, usually associated with an Office of Sustainability and charged with changing the entire campus culture from the bottom up, are usually insufficient (Hanover Institute 2011). If this office is located within a centralized sustainability unit charged with all aspects of sustainability, operational and academic, there is still a need for the champions to reach out across the campus. In a distributed model, where multiple academic and facilities/operations units, reporting to multiple vice presidents, are responsible for sustainability activities, champions are organically distributed across the institution. Buy-in and training of faculty and staff from around the university can be promoted through programs training energy mentors and green office managers and by awarding non-degree certificates (e.g., leadership distinction in professional and civic engagement, University of South Carolina) or green badges. Training programs include Sustainable Ohio University Leaders (SOUL) and the Faculty Fellows program at UVM. These require the support of the administration, not just in providing resources to run them but also in recognizing these activities in annual evaluations. In a high-level position, the champion need not necessarily be an academic; however, that champion should have Provost or vice-presidential-level authority and a clear role in operations, planning, and curricula development. It is essential to have more than one champion, either in a centralized unit or spread throughout the institutions. Because multiple cultures exist within the institution (hierarchical in operations, more

free-flowing in academics) and because of PhD snobbery common to academicians, it helps to have champions familiar with and established in both cultures.

Co-curriculum and action teams

The integration of academics with campus operations and residence life provides many co-curricular opportunities for students (Parnell et al. 2014). Opportunities for all students, not just sustainability majors, in campus sustainability activities build the sustainability culture and brings in more diverse perspectives. Top-down programs promoting internships in areas of campus operations, residence life, or purchasing can encourage skeptical staff members that students can effectively assist them. Internship coordination and promotion can be better facilitated through formal coordinators.

Ad hoc task forces or action teams can be identified through town halls, forums, and caucuses. These task-oriented groups, reporting to the PSC, focus on a particular area (e.g., waste, water, or energy conservation, behavior change, plastic bags, and water bottles). The teams must identify responsible parties with the authority to approve and fund projects and have the PSC work with them. Permanent “green teams” consisting of sustainability professionals below the senior level can set priorities for formation of these teams as well as make recommendations to the PSC.

Closer connections between academic and co-curricular activities can also be promoted. Action research teams focused on sustainability activities like energy retrofits, recycling, campus gardens, or water conservation combine classroom and campus activities and engage students even after they finish the class (e.g., UCLA, Northern Arizona University). UC Irvine’s guided research applied sustainability projects have combined experiential and classroom education in a range of class sizes and levels.

Linking it all together

Although each of these activities may produce important products and they can be implemented independently, the context and connections between them is also important. The PSC or other group should consider a concept map approach to understand the connections between these individual activities. Utilizing a power mapping exercise can substantially strengthen the impact of such a concept map by identifying pathways for efficient implementation of these activities. Such a map provides a view of the multiple ways in which sustainability efforts exist and collaborate (or do not collaborate) across the campus.

Summary

Although staff and faculty positions in sustainability are critical, effective communication across the institution is of fundamental importance in moving forward with sustainability initiatives across campus. As discussed above, these communications-based solutions have proven effective at institutions across the US:

- developing a budget mechanism to allow cross-unit, multi-vice presidential sustainability initiatives
- coordinating climate/sustainability action plans with strategic and long-term budget plans with select faculty and staff members from the PSC serving on all these committees
- ensuring a direct report for the PSC chair to the President or Chancellor
- promoting a broad-based campus-wide environmental caucus or sustainability fellows program
- coordinating across the institution internships and other co-curricular sustainability activities, involving facilities, operations, financial, and academic staff and faculty
- having student representation on the PSC and other campus sustainability action teams
- coordinating formal communication between student groups, the environmental caucus, the PSC, Green Fund, and other groups through regular “green team” meetings
- developing and publicizing a communications or organizational chart showing all sustainability and environmental activities and their interrelationships
- creating more interdisciplinary, unit-spanning sustainability positions in operations and in academics

All of these activities are being implemented on campuses across the country. Although bottom-up activities alone can have real, positive impact, especially in fostering a culture of sustainability, only with institution-wide commitment can the energy, expertise, and enthusiasm of faculty, students, and staff inform, assist, and support senior-level decision-making. Commitment from the top establishes an institutional dedication to action and a framework and resources for sustainability

planning and implementation. Even with the activities suggested here, commitment from faculty, staff, and students must be widespread for collaborative efforts to advance sustainability initiatives.

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