

Introduction: Inside and Out—What’s It All About?

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In a collection of essays on the responsive university, Braskamp and Wergin state that “The academy does not often believe and act as though the campus is in the world and the world is the campus” (Braskamp & Wergin, 1998). In his examination of the University of Limerick, Dineen (1995) makes the point that in 1972 the idea that a university would have a direct interest in the economic and social development of its immediate region was “a radical departure from the existing concept and practice of university institutions both in Ireland and several other European countries” (p. 140). “Twenty years later,” he notes, “there is still a degree of skepticism about university institutions which do not operate in ‘splendid isolation’ from their environment” (p. 140). In this book we intend to challenge such skepticism and make clear the case for the importance of an “engaged university” in the economic and social development process. We contend here that a university intent on playing a catalytic role in social and economic development beyond simply the theoretical can indeed have a sustained and positive impact when its on- and off-campus efforts are guided by a reflective institution-wide and region-wide discourse (Farrant & Silka, 1999).

In this introduction, we locate the University of Massachusetts Lowell (UML) within the history of its region. There follows a description of several projects underway in Lowell that reflect the University’s efforts to broaden and deepen the discussion both between academic disciplines and in the area of what its role in the regional economy should be. The final sections sketch the content of the chapters. This book is the culmination of a series of conversations that led to a conference in the Fall of 2003 to discuss how, in and outside the classroom, universities could engage faculty, staff, students, and the wider community in the sustainable development process.

THE CITY, THE REGION, AND THE UNIVERSITY

UML is located in what at one time was a preeminent textile center. However, by the 1920s, Lowell's, and for that matter the majority of New England's textile mills, were closed. At the end of the Second World War, Lowell, a place that had offered economic hope to waves of new immigrants, was a decaying city with high unemployment and rising poverty. In 2004, with a population of 104,000, Lowell is the fourth-largest city in Massachusetts. It is located in the northeast part of the state, a region with 43 cities and towns and a population of roughly 750,000. It includes older mill cities as well as cities and towns that witnessed explosive growth tied to the expansion of high technology employment in the 1970s and again in the early 1990s. The economy is dominated by the Route 128/495 high technology and software industry corridor.

A city of immigrants in the 19th century, Lowell is still a city of immigrants today. Sizable Southeast Asian and Puerto Rican populations reside in Lowell—the second-highest concentration of Cambodian immigrants in the nation is found in Lowell. Several neighborhood census tracts contiguous to the university have minority concentrations greater than 50 percent. Economic prosperity in the early 1980s, especially in computer manufacturing, drew many of these newcomers to the city, but the sharp downturn in the late 1980s and early 1990s resulted in high unemployment. Thirty-seven percent of households in the city center are headed by females, and of these families, 62 percent live in poverty. Today the city's overall unemployment rate is approximately 4 percent; however joblessness in neighborhoods with high minority and immigrant concentrations is three times higher. Poverty, a shortage of affordable housing, and unemployment persist in immigrant neighborhoods.

UML's predecessor institutions—the Massachusetts State Normal School at Lowell and the Lowell Textile School—were established by the Massachusetts legislature in 1894 and 1895 respectively, to serve the region's industrial needs. The Lowell Textile School trained skilled workers, engineers, and supervisors for the region's mills. In 1932 the Normal School became the Lowell Teachers College, a four-year institution to prepare teachers for the Massachusetts public school system. In 1975 the institutions merged and became the University of Lowell. A sharp economic downturn in the late 1980s brought a rapid drop in state tax revenues and led to the rationalization of the state's public higher education system. As a result, in 1991 the University of Lowell became the University of Massachusetts Lowell, one part of the five-campus university system. UML was challenged to construct an explicit model of how a public university could organize its teaching, research, and outreach to help a region develop and maintain a thriving industrial economy. Realizing there was no quick technological fix, campus leaders set to work figuring out how UML could help the region avoid its historic patterns of economic boom and bust. At the same time, the University began to revamp curricula, reorganize academic departments and

research institutes, and develop new ways to work with regional industries and communities. There are approximately 6,000 undergraduate, 3,000 graduate, and 4,000 continuing education students enrolled in the university.

BECOMING EMBEDDED IN THE REGION

The University soon articulated a mission predicated on the notion that a sustainable economy depends upon a skilled and ever-replenished workforce, innovative products, environmental protection, a strong public health infrastructure, and worker safety. In addition, as an integral part of the mission, the University fostered the enhancement and protection of the historical fabric of the community, supported K-12 and continuing education, and worked to strengthen the social and cultural life in Lowell and the region. Soon, several professors worked across their academic disciplines and colleges, an interdisciplinary graduate program in regional economic and social development began, students got involved as community researchers, and relationships strengthened between regional participants and the University. More recently, emphasis was placed on figuring out how to better involve the social sciences and humanities disciplines in the process for, as historian Chad Montrie points out, “First, studying the past can (depending on the quality and intent of a given investigation or interpretation) provide a better understanding of the present. In fact, I would argue that we cannot understand who, what, and where we are without knowledge of who and what came before us” (ch. 4). A growing body of academic and action-oriented research has been produced since 2000, including this volume (see Farrant, Pyle, Lazonick, & Levenstein, 2001; Pyle & Farrant, 2003).

To extend activities into the community, in the Summer of 1996 faculty—many of whom became members of the new Department of Regional Economic and Social Development—prepared a successful application to the U.S. Department of Housing and Urban Development (HUD) and established a three-year \$400,000 Community Outreach Partnership program (COPC). Entitled The Lowell Community-University Partnership for Sustainable Development, the proposal articulated broad categories of work with numerous city partners. One objective was to promote research that provided information and analysis pertinent to the short-term resolution of significant urban problems as opposed to the more typical long-term research carried out by faculty and published in peer-reviewed journals. Under the grant, faculty engaged the community in defining research activities that centered on problem solving. The University administration agreed to institutionalize COPC-like activities by the end of the grant (Farrant & Silka, 1999).

The discussion about development and the University’s role in the development process widened to consider among other things: how firms adopt cleaner production techniques and green chemistry; how production can be designed to be mindful of worker health; how communities can reduce their waste stream;

how to develop measures of sustainable production and community development; how the social sciences and the humanities can be brought into the discussion to more broadly define sustainable social and economic development; and how Lowell residents can participate in all of these discussions and make their ideas known to the University administration on a consistent basis. Faculty-led interdisciplinary research centers carried out many of these activities (www.uml.edu/research/centers.htm). One such group, the Committee on Industrial Theory and Assessment (CITA) was established in 1993 to shape new theoretical and pragmatic ways of thinking about development and explore the changing roles and functions of UML in the process (www.uml.edu/com/CITA/).

UNIVERSITIES AND SUSTAINABLE DEVELOPMENT

Members of the University community worked with local groups, Lowell National Historical Park and the Lowell Historic Board, neighborhood associations, the Lowell Public Schools, firms, and local development organizations to stimulate a collective learning process, influence commercial activity, preserve and reuse Lowell's industrial structures as a point of community pride and efficient renewal, and participate in the collaborative knowledge-generation needed to stimulate regional development. These efforts are instructive for their focus on how old industrial areas make transitions into more sustainable economic, educational, and cultural activity and for those who are keen on understanding how universities can shake what Storper calls "institutional sclerosis" and play a part in shaping learning regions (Storper, 1995).

Not richly endowed like the Massachusetts Institute of Technology or Stanford University, UML nevertheless strives to address issues that are useful to people interested in the role that "more ordinary" regional, and especially public, universities can play in development. Its experiences reflect the larger dialogue taking place as institutions of higher education consider whether and how to play a more catalytic role in their regional economies. In 2004 city and regional development centers are situated at numerous U.S. and European universities, and there is a growing body of literature and analysis of the university's role in development (see for example: Boucher, Conway, & Van Der Meer, 2003; Cox & Richlin, 2004; Dineen, 1995; Harris 1997; Jacoby, 2003; Labrianidis, 1995; Maurrasse, 2001; Mowery et al., 2004; Schmoch, 1999; Strand et al., 2003; Van Den Berg & Russo, 2004).

Two overarching questions seem to permeate the literature: 1) How does a university restructure its myriad activities, maintain its academic integrity, and have a transformative impact on the regional economy? 2) Who should participate in the discussions that frame and guide the internal restructuring process and off-campus interactions? For sustainable innovations to occur, whereby, for example, a new manufacturing process can be utilized by local

industry, or a region is able to make a successful transition out of old industries and old ways of interacting into new ones that resolve difficult societal problems, regional participants must learn how to work together.

Our emerging perspective, based on research and projects in the field, is that long-term growth requires strategies geared to the scientific, technical, cultural, environmental, and social aspects of development. For this to occur, we must consider new ways to organize our teaching—an important theme of this volume. An iterative process is underway—one which involves professors from diverse disciplines, such as criminal justice, community psychology, sociology, work environment, public health, history, political science, philosophy, electrical and mechanical engineering, environmental sciences, nursing and health sciences, and education. Participating off-campus constituencies include neighborhood organizations, public schools, youth services, healthcare providers, and housing advocacy groups. Internal relationships among professors as well as between professors and administrators are being altered, while external relationships are being reconstituted to ensure that the campus listens better and engages the community in collaborative activities. To say the least, this is no small task! What follows is a brief description of some of the activities that demonstrate the range of efforts taking place.

WHAT WE ARE DOING

One strategic focus encompasses energy conservation, biodegradable materials, cleaner and safer production, and the environment. For example, the Toxics Use Reduction Institute (TURI), a multidisciplinary research, education, and policy center, works with firms, schools, and neighborhood groups to introduce the use of nontoxic materials into a variety of manufacturing processes (Geiser & Greiner, 2001). TURI researches, tests, and promotes pollution prevention and alternatives to the toxic chemicals used in Massachusetts industries and communities (www.turi.org). Through its participation in K-12 teacher institutes, TURI has helped disseminate information about nontoxic materials into the elementary and middle school science curriculum. The Lowell Center for Sustainable Production focuses on the development of specific links between community and regional economic activity that are conserving, nonpolluting, and efficient and promotes worker and neighborhood well-being (Kriebel et al., 2001). In order to promote sustainable production and consumption, recycling, and cleaner production research (www.sustainableproduction.org), the Center fosters collaboration between academic disciplines and among several constituents, including the environmental movement, trade unions, and state and federal governments.

The Institute for Plastics Innovation consortium offers research and product development services to leading firms, including 3M, Ford, and GE, as well as many others in electronics, computers, and automation technologies

(www.ipi.org). Combined with the plastics engineering department, the Institute offers a comprehensive testing, research and development, and education and training program for plastics companies. The integration of scientific research across three disciplines—chemistry, plastics engineering, and biology—is an important attraction for the sponsoring companies because the development of novel materials has run well ahead of the development of processing procedures and environmental impact assessments. These exotic materials exist, but without widespread knowledge on how to utilize them; nor is there sufficient information on how they will interact in landfills and with various recycling techniques.

The Center for Family, Work, and Community (CFWC) is an outreach arm of the university that works to bring faculty, staff, and students together with community partners to solve long-standing problems in the region. A range of activities in local schools, neighborhood organizations and community nonprofits, are designed to create opportunities for the university to work with and learn from off-campus partners. The Center is currently taking the lead on the formation of a permanent community advisory board that will work with the chancellor and provost on issues of importance (www.uml.edu/centers/CFWC/).

Established in April 2004, the newly designed School of Health and Environment was created to promote human health and development thereby enabling people to live in safe and productive communities and environmentally sustainable economies. The new school brings together the University's long tradition of educating health professionals with an institutional focus on environmental and economic health. It includes the departments of Clinical Laboratory and Nutritional Sciences, Community Health and Sustainability, Nursing, Physical Therapy, and Work Environment. The School maintains working relationships with many organizations in the region, serving a fundamental educational role for students, while providing direct assistance to groups and individuals throughout the region. Additionally, the School offers community educational programs for citizens, community leaders, and healthcare providers regionally, nationally, and internationally. Faculty and student research to promote health and sustainability insure that the educational mission stays relevant and focused on real-world problems and solutions.

Novel approaches to research and science, new links between traditional professions and services, and the development of policies that can expand the ambitions and resources of current healthcare, public health, and environmental protection systems are part of the School's agenda. The School's establishment represents an important new phase in a continuing effort at the Lowell campus to become a model of innovation and interdisciplinary experimentation by pursuing a vision of regional sustainable development (www.uml.edu/College/she/).

The University has a unique multidimensional partnership with Lowell National Historical Park to help carry out the University's mission to build a vibrant and sustainable social, educational, and cultural life in the region, which in turn attracts the "creative class," makes the University more attractive to

students, and strengthens regional tourism. In the 1970s University leaders worked with Senator Paul Tsongas and Lowell leaders to create Lowell National Historical Park (1978) and the Lowell Historical Preservation Commission. With this infrastructure in place, state and federal legislative delegations secured millions of dollars to fund preservation in Lowell's historic district and to sustain the downtown despite the exodus of major retail stores to suburban malls. These early efforts cut across institutional, ethnic, social, and political divisions to create a "culture of partnership" to initiate projects that would have long-term positive impact.

The Tsongas Industrial History Center, a partnership created in the late 1980s by UML and Lowell National Historical Park and located in the Park's restored Boott Cotton Mill, was a product of this culture of partnership and Lowell's activist legislative delegation. Park Service, University, and Lowell Public Schools leaders created a center for students to learn about the American Industrial Revolution through hands-on activities and engaging tours of the Park's restored structures and interpretive exhibits—discovering history where it happened. Today, 65,000 students "do history" each year by weaving, creating a canal system and testing water wheels, working on an assembly line, role-playing immigrants, or becoming inventors. By investigating industrial history, students also "do science, mathematics, and engineering," by testing river or canal water quality, tracing the flow of groundwater pollution, or discovering river cleanup techniques, and "read literature and do writing."

In serving as an interdisciplinary curriculum and professional development resource for K-12 teachers, the Center provides immediate dissemination of university research to K-12 teachers, models the university's "Community-as-Classroom-and-Laboratory" philosophy, and provides a unique setting for academic leaders, policy makers, and educators to come together to gain historical perspective on the modern global industrial economy and on issues of sustainability. The Tsongas Center is the largest fully functioning educational partnership in the National Park Service and serves as a model for other Parks (O'Connell & Hoermann, 2005). University and Park leadership are exploring other dimensions of this partnership, including the expansion of work with Lowell's diverse ethnic groups to both preserve and celebrate culture and to explore educational, economic, environmental, political, and social issues (www.uml.edu/tsongas/index2.htm).

A REFLECTIVE DISCOURSE

Much of the work discussed here and in the rest of this volume is at odds with traditional university practices for as Lerner and Simon point out, "too many of our faculty, in all of our disciplines, are far too insulated, too isolated, and in fact and perception are seen as indifferent to worlds other than their own" (1998, p. 3). The university tends to reproduce a culture that rejects direct

interaction beyond the campus and across traditional academic departmental boundaries. Yet, interdisciplinary work is important because it more aptly mirrors what is taking place in the regional economy as firms collaborate across manufacturing boundaries and community organizations and neighborhood groups work to solve common urban problems. At the same time, tensions exist between research and its application. Too often “the actions of faculty suggest that they view the real intellectual work as having been completed by the time attention turns to application and community collaboration” (Silka, 2001, p. 490). Much of this tension is bound up with the internal academic evaluation processes associated with the granting of tenure.

At least three institutional/organizational obstacles inhibit success. At Lowell: 1) there has not been a consistent campuswide discussion of what a sustainable economy is, and whether and how the various academic and technical programs on campus can support it; 2) there is no consensus when it comes to understanding the importance of community collaborations and applied community research; 3) structural barriers such as tenure and promotion make it difficult for this type of work to be evaluated. There remains a need for a synthesis to identify which particular university/community institutional arrangements are effective in fostering economically and socially vibrant regions.

For Lowell, the starting point has been the consideration of the emerging collective understanding of how and why, in general terms, regional economies grow and decline. We believe the capacity of an industry or a regional economy to provide well-paying jobs and a broadly shared sustainable prosperity is contingent upon the ability to learn new things and resolve problems as they manifest themselves (for a discussion, see for example: Knudsend, 1997; Lazonick, Fiddy, & Quinby, 2003; Morgan, 1997; Storper, 1995). In “Toward the Learning Region,” Richard Florida (1995) outlines the shift to knowledge-intensive capitalism and makes the case for a firm’s need for a broader knowledge infrastructure than that which evolves solely in-house if they are to keep up with the shortened product and technology cycles that exist today. Florida explains that learning regions require an infrastructure of knowledge workers who can apply their intelligence to production. The education and training structure must facilitate lifelong learning and provide the high levels of group orientation and teaming required for knowledge-intensive economic organization (Florida, pp. 533-534).

To define a sustainable regional economy necessitates the integration of the social sciences and humanities into the discussion and requires that campus efforts be linked in substantial ways to off-campus constituencies. Many critical questions cannot be investigated without this approach. For example, does sustainable development imply an expanded economic pie—a larger tax base, more jobs, new firms—with little regard for wages paid or who gets the additional slices of the larger pie; does it foster economic stability and an end to the boom-and-bust cycles that Lowell, for example, witnessed for much of the 20th

century. Does it mean a general increase in the levels of income of the entire population, an increase in the political and economic empowerment of citizens, a nurturing of start-up enterprises, improved health and healthcare delivery, neighborhood empowerment, or more jobs for youth? Our sensibility is that an encompassing definition of development requires programs and policies that promote a far more equitable distribution of new jobs and income while also boosting the region's capacity to innovate. Too narrow a focus on firms will fail to link residents to employment, while too narrow a focus on neighborhood development will not foster sustainable economic growth. Links between these developmental paths need to be explored.

WHAT'S INSIDE?

What is distinctive within the range of scholarship and practice in this volume is the inclination on the part of increasing numbers of professors on more and more campuses to collaborate across disciplinary lines. The deliberate convergence of several hitherto distinct fields of study, including planning and regional development, economic geography, ergonomics, work design, green chemistry, community and neighborhood studies, health-related and environmental studies, and gender, race, and ethnic studies is taking place. Universities need to persist in the advancement of cross-community, cross-firm, and cross-institutional learning. Centers and institutes appear to offer what Lerner and Simon (1998) call "ideal vehicles for this purpose" (on centers and institutes, see Brabeck, 1998; Harkavy, 1998). Because they "transcend disciplinary boundaries and disciplinary ways of framing problems, centers can be effective mechanisms for advancing outreach scholarship, particularly as issues and concerns undergo shifts and changes" (Silka, 2001, p. 502).

The learning dynamics and knowledge diffusion generated by collaborative activities and new approaches to teaching can invigorate all phases of learning at the university. In this way, the university advances its activities beyond an indiscriminate approach to development, maximizes the use of its resources, and performs an integrative and innovative role in the cultivation of equitable and sustainable regions. The chapters in this book move beyond the traditional focus in education for sustainability by taking on all three "legs": economics, equity, and the environment. The authors illustrate the strikingly different ways in which universities pursue integrated education for sustainability by focusing on all three themes.

The chapter by Robert Koester, James Eflin, and John Vann highlights a full-campus approach and asks us to consider how integration across an entire campus can best be achieved so that goals for the curriculum, the physical plant, and the administration are all aligned with sustainability. The authors examine a decade of successes at Ball State University, but also point to continuing challenges and unresolved issues in achieving all of the goals for sustainability

they have set for themselves. This chapter calls our attention to questions about whether university change is most easily initiated and maintained through “top-down” or “bottom-up” approaches and whether strategies for change that are successful at one university can be adapted for others. Ball State could be said to have all of its ducks in a row. The discussion in this chapter raises the question of whether universities for which this is not the case can still draw from the Ball State model.

A multi-university focus is taken in the South Carolina and Western Massachusetts chapters. Each group of authors examines the question of how universities by working together, can advance education for sustainability. The chapters provide us with differing views in their descriptions of two very different regions, two very different partnerships with different goals, and two different points in time within those same partnerships. These chapters highlight the promise when systems work together, but also shed light on the differences in institutional practices that continue to thwart efforts aimed at bringing universities together when there are deep differences in campus cultures, skill bases, and tenure practices.

The question of disciplines and what they might offer is taken up in the Dan Egan et al. as well as Linda Lowry and Judy Flohr chapters. Here, the authors examine the question of how disciplines often considered to be out of the sustainability mainstream in fact can go to the very heart of unresolved questions of sustainability. Lowry and Flohr take us through the process by which courses in a leading department of tourism and hospitality are infused with sustainability, while the Egan et al. chapter looks at four different disciplines in social sciences and humanities—sociology, history, political science, and philosophy—whose potential to make significant contributions to the theoretical base of sustainability and to the problems and perils of sustainability has yet to be fully recognized. Education for sustainable development, Egan et al. note, “must first acknowledge the value-laden nature of the concept and then make explicit the particular values that are to be taught. Only after an ongoing social dialogue can we arrive at a consensus on a working definition of sustainable development. This is a task for which the humanities and social sciences can make a major contribution” (ch. 4).

The Elisabeth Hamin and William Mass chapters look at the level of individual courses and guide us through the transformations that are needed if courses in particular disciplines are to become better vehicles for conveying the complexities of sustainability. Both chapters make the compelling case that little will be achieved in education for sustainability if transformation does not reach down to the level of individual courses because these, after all, are the heart of the university. For Hamin, “Unlike biology, say, which creates biologists, or planning which creates planners, there is not a profession of ‘sustainer’.” The pedagogic goal, she notes “is to encourage a world view, one in which students will become citizen activists for sustainability after they graduate, whether in the civic sphere or by bringing sustainability criteria to bear on their work” (ch. 5).

The chapters noted above assist us in looking at education for sustainability where much of the focus is on the university itself: the students, the curriculum, and the physical plant. The Geiser chapter and the Silka, Geigis, and Snyder chapter take on the challenges posed when universities direct their educational efforts toward other audiences. Geiser describes a university's work with international environmental justice leaders where clean production principles become the means of overcoming attempts to pit the goals of equity, economy, and the environment against each other. For Geiser, "the education and training required to be an effective advocate for a sustainable future is often learned on the job and through direct personal experience. Universities can play an important role in such education by providing students with a broader awareness, values clarification, technical and historical information, personal and professional skills, and an opportunity to share experiences" (ch. 2). Silka et al. consider the ways in which universities can work more closely with policy makers to reach local leaders and precollege youth with sustainability themes. Both chapters explore new ideas—cleaner production and community preservation—and both note the value of addressing past problems by generating new conceptual approaches. Are universities equipped to take on these tasks that move them out of their traditional roles?

The Western Massachusetts chapter suggests some of the difficulties that can arise when an entire city becomes the focal point for efforts on the part of a five-campus consortium. The difficulties are illustrative of how college and university governance systems and definitions of "scholarship" make such multicampus collaborations difficult. This chapter illustrates how difficult it is for community organizations to find their way into the labyrinth that is the university.

While many of the chapters written from within universities argue that these institutions are well-situated to be leaders in furthering education for sustainability, the Viederman chapter raises core questions about the extent to which this notion is indeed the case. He wonders whether universities are in fact equipped to offer solutions. This chapter suggests that within universities, people are usually good at learning from those within their own disciplines, but most sustainability issues call for work that crosses interdisciplinary lines and here, he argues, universities have yet to come to terms with the fundamental problem of disciplinary fragmentation. Viederman notes:

The world has problems; universities have disciplines. Inter-, trans-, non-, multidisciplinary approaches are rooted in the disciplines. Sustainability is about the whole, about the sum of and the relationships among the parts of systems. Universities excel at parts, not the whole. The search for knowledge is defined as that which is researchable. Expertise is valued. But as the eminent microbiologist Erwin Chargoff suggested, where expertise prevails, wisdom vanishes. Can higher education cultivate wisdom as well as it does knowledge (ch. 1)?

Viederman sees this fragmentation as permeating all parts of the university: whom faculties direct their research to, how courses are organized, how the curricula are designed, and how the very structure of the university as a knowledge-generating and disseminating entity is organized and maintains itself. Thus, an interesting argument goes on among these chapters about the extent of present and future leadership roles for universities.

The implied or explicit goal or end result of the various chapters also varies. Geiser calls for creating movements that bring academics together with those who have traditionally been excluded from sustainability discussions. Other chapters look to enlarge the ideas that serve as the foundation for education for sustainability. As more disciplines are brought into the discussion, better ideas are expected to result. Others focus on how students, upon leaving the university and becoming practitioners, can make a difference in their professions in tourism, engineering, and the like. But very different positions are taken here: Hamin calls for students to understand policy; she sees a focus on individual, personal change as not particularly useful and as somewhat beside the point. Other chapters highlight the importance of personal change. A comparable theme of personal change versus policy change also shows up at the university level. Should universities be focused on changing themselves (such as greening campuses), their structures, and their practices? Or is it universities in their idea-generating, policy-promulgation role that should be the focus of attention and efforts? Again, the chapters read together, convey an intriguing give and take on these important issues.

In addition, the problems the authors are trying to solve are quite different and very instructive. Some are trying to better understand what particular disciplines can offer. Others are attempting to identify those strategies best suited for moving ahead whole institutions. Some are seeking to understand which courses should be changed and what those changes might look like if they are truly to affect views on sustainability. Others are trying to look at how groups of institutions can work better together. Some are trying to understand how community outreach can become a core feature of a university's approach to education for sustainability. There are many differences among these perspectives, but also some important commonalities. All, in some sense, point to the fact that universities' resources remain to be effectively used. Here the chapters unearth and examine different resources: the variety of disciplines, the focus on research, the access to funding, and the opportunities to involve students and enrich their educational experiences. Ultimately, most university faculty do best when they are confronted with challenging problems in need of solutions: the question remains whether and how we can harness this motivation effectively. The chapters in this book point to innovative ways in which universities have begun this task in the area of education for sustainability.

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**SECTION ONE:
University Space**