Chapter Two of

# The Sustainable University:
## Green Goals and New Challenges for Higher Education Leaders

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# Promises Made and Promises Lost:

## A Candid Assessment of Higher Education Leadership and the Sustainability Agenda

**Anthony D. Cortese**

American higher education has been granted tax-free status, the ability to receive public and private funds, and academic freedom in exchange for educating students and producing the knowledge that will result in a thriving civil society. Each year, our higher education institutions enroll more than eighteen million students and produce more than three million graduates into society and its workforce. Community colleges, colleges, and universities have been a critical leverage point in making a modern advanced civilization possible for an unprecedented number of people in almost every important way. American society continues to see higher education as a national resource and crucial to the development of economic success, a view that was originally put forth by the report by President Truman's Commission on Higher Education in 1947. In addition, society looks to higher education to solve current problems, anticipate future challenges, develop innovative solutions, and model the behaviors that society must adopt to continue to evolve in a positive direction.

### Humanity and Higher Education at a Crossroads

American higher education now faces a challenge larger and more severe than any it has addressed. Through the exponential growth of our population and its technological and economic systems, humans have become the dominant influence on the health and well being of the earth. The sum of humanity and the expansive dynamic of industrial capitalism constitute a *planetary* force comparable in disruptive power to the Ice Ages and the asteroid collisions that previously redirected Earth's history. While the earth's population has grown from one billion to 6.7 billion in the last two centuries, energy consumption has risen eighty times and economic output has risen 68 times, and most of this has occurred over the last half century.[1] Despite the impressive array of environmental protection laws and programs in industrialized countries since 1970, all living systems—oceans, fisheries, forests, grasslands, soils, coral reefs, wetlands—are in long-term decline and are declining at an accelerating rate, according to most major national and international scientific assessments. Humans are challenged by a staggering array of persistent, toxic chemicals that are affecting our health and the viability of large ecosystems.

At the same time, we are not succeeding in many health and social goals: More than 3 billion people are without sanitation and earn less than $2.50/day, and more than a billion have no access to clean drinking water. The gap between the richest twenty percent of the world and the poorest twenty percent has jumped from 30:1 to 78:1 in one generation.[2] Even in the United States, the gap is the greatest since the late 19th century. As twenty-five percent of the world's population consumes more than seventy percent of its resources, we are beginning to experience wars over oil and water that are destabilizing society. Beyond this, a challenge that will accelerate all these negative trends is human induced global warming, primarily from the burning of fossil fuels that is now destabilizing the earth's climate and most of its other life supporting systems. Despite what may be read in the news media, especially in the United States, human induced climate disruption is real and is already affecting us faster than predicted by the most conservative scientists in 2007. What most people do not understand is that destabilizing the earth's climate can undermine modern civilization. As Dianne Dumanoski asserts in her 2009 book, *The End of the Long Summer*:

> Our way of life depends on a stable climate. The cores of ice drilled from the ice sheets on Greenland and Antarctica tell us we live at a truly extraordinary time within the Earth's volatile climate history. Through most of our species 200,000-year existence, our ancestors had to cope with a chaotic climate marked by extreme variability, a climate that could not support agriculture. The world as we know it, with agriculture, civilization, and dense human numbers, has only been possible because of a rare interlude of climatic grace—a "long summer" of unusual climatic stability over the past 11,700 years. The human enterprise has become a risky agent of *global change*. The gargantuan size of our modern industrial civilization is now disrupting our planet's very metabolism—the vast overarching process that maintains all of earthly life. Because of humanity's planetary impact, this exceptional moment on Earth is drawing to a close. What lies ahead is a time of radical uncertainty.[3]

The crucial question for our society is: How will we ensure that *all* current and future humans will have their basic needs met and live in thriving, secure communities in a world with nine billion people that plans to increase economic output 4-5 times by 2050. This is no longer simply an environmental challenge, rather, we now need to re-think and remake the human presence on earth through what I have described as the aspiration of a sustainable society.

## The Need for a Change in Mindset

The routine business of our civilization is threatening its own survival. We continue to be guided by myths of human domination of nature and of continuing "progress" fueled by economic growth because they have worked over the last three centuries to create a modern society offering spectacular increases in the quality of life for a significant portion, though still a minority, of the world's population. The guiding myth assumes that human technological innovation will allow us to ignore planetary limits. Moreover, we are dominated by linear short-term thinking that makes it difficult to recognize the cumulative dangers of current actions or that the impact of collective humanity is now global, intergenerational, and prone to rapid, unexpected shifts. For example, greenhouse gas emissions released today will begin to have their most serious effects in 30-50 years and will continue for several centuries. In Western industrialized society, many still view increasing material consumption as the principal measure of individual and group success, despite increasingly negative health, social and environmental effects.

Through economic globalization, we are spreading this cultural paradigm even while it makes our societies more vulnerable to the growing instability of natural and human systems—witness the impacts of the 2007-2008 failure of the housing and financial markets that continue to depress the worldwide economy, the 2010 volcanic eruption in Iceland that wreaked havoc with travel to and from Europe and with the worldwide economy, and even more recently, the oil spill in the Gulf of Mexico that focused immediate attention on who was responsible rather than on the long term consequences of this disaster and the urgent need to reduce fossil fuel sources in our lives for environmental and social justice reasons. We still view this array of health, economic, energy, political, security, and environmental issues as separate, competing and hierarchical when they are actually *systemic* and *interdependent. We have a de facto systems design failure.* These challenges must be addressed in an integrated and holistic fashion with an emphasis on creating new and more desirable ways of helping society succeed, such as local, sustainable food production that provides healthy food, local jobs, and protects soils and water supplies.

We must also confront the reality that our current higher education system is reinforcing these unhealthy, inequitable, and unsustainable paths that society is pursuing. As David Orr has said, "It is not a problem *in* education it is a problem *of* education."[4] The structure of higher education reinforces many of the cultural assumptions referred to above. The guiding myths of humans as separate from nature and nature as primarily a source of resources to be utilized and controlled for human purposes are prevalent paradigms in higher education.

As one example of the many undesirable consequences of the current educational paradigm, our current ecological, health and social footprint is largely *invisible* to most of us and almost completely absent in the price of products. Our economic system acts as if the price is right for all products, but, in truth, their prices are *mostly wrong* because they do not reflect the negative impact on human health and communities and the earth's ecosystems. Currently, the price is the proverbial tip of the cost iceberg. The best estimates of the true life cycle health, social and ecological cost of a gallon of gasoline, for example, is between $8 and $12. That cost does not reflect the ecological damage of oil spills or the destabilization of the earth's climate. As a result, the average American does not realize that through our economic system, we consume the equivalent of our body weight in solid materials daily, over 94 percent of which goes to waste before we ever see the product or the service. For example, it takes a few thousand pounds of material, most of which went to waste before use, to make a five to six pound laptop computer. Consequently, the market fails in efficiently allocating resources and allows us to continue in a group self-deception about the impact of our daily living. A key assignment for college and university curricula and teaching methods, thus, is to make invisible impacts visible.

## Culture and Values Before Scientific Development

How can we create a healthy, just, and sustainable society? Let us imagine that all current and future generations are able to pursue meaningful work and have the opportunity to realize their full human potential both personally and socially. Imagine that communities are strong and vibrant because they celebrate cultural diversity, are designed to encourage collaboration and participation in governance and emphasize the quality of life over the consumption of materials. In an August 5, 2007 *New York Times* story: "In Silicon Valley, Millionaires Who Don't Feel Rich," executives with a net worth of more than $5 million discussed how their families were unhappy with their lifestyle because they compared themselves with neighbors whose net worth is five to ten times greater. As one executive complained, "Here, the top 1 percent chases the top one- tenth of 1 percent, and the top one-tenth of 1 percent chases the top one-one-hundredth of 1 percent. You try not to get caught up in it," he added, "but it's hard not to."5 The road to sustainability is one of culture and values as much as it is about scientific and technological development. It must be guided by the arts, humanities, social and behavioral sciences, and religion as much as by the physical and natural sciences and engineering.

Can this be done? A growing consensus of business, government, labor and thought leaders now believe that a "clean, green economy" based on these principles is the best way to restore American economic leadership, create millions of jobs, help solve global health and environmental problems, and recreate geopolitical stability

and justice. For example, DuPont has reduced heat-trapping emissions by 72 percent since 1990 and saved $3 billion.[6] Ray Anderson, the chairman and founder of Interface, Inc., the world's largest modular carpet manufacturer with annual sales of $1.2 billion and one of the world's leading companies dedicated to economic, social and ecological sustainability says:

> At Interface, the business case for sustainability (as a core purpose of our business) is crystal clear: A capitalist to the core, I can't think of a better business case than lower costs, better products, higher morale, loyal employees and goodwill in the marketplace. Our costs are down, not up, dispelling the myth that sustainability is expensive. Our first initiative— zero-tolerance waste—has netted us $433 million in saved or avoided costs, more than paying for all capital investments and other costs associated with sustainability. Our products are the best they've ever been. Sustainability is a wellspring of innovation; our product designers have been particularly successful using "biomimicry" as a guide, nature as inspiration. Our people are galvanized around our mission and a shared higher purpose—Maslow at his best: self- actualization that comes when people commit to something bigger than themselves, a type of top-to- bottom and bottom-to-top alignment that sustainability has fostered. The goodwill of the marketplace is tremendous, winning business for Interface because customers want to be aligned with a company that is trying to do the right thing. No amount of marketing, no clever advertising campaign, could have created the kind of customer loyalty that we have experienced.[7]

Thinking like Anderson's represents a key societal shift. There have been six major economic downturns in the last fifty years. In the first five of these, many in industry, state legislatures and the Congress called for relaxing environmental, health and safety standards to cope with the economic challenges. In the current one, the opposite is occurring. Environmentally preferable actions are now viewed as the best way to restore and sustain economic stability.

## The Role of Colleges and Universities in Sustainability Leadership

As presidents, provosts, and trustees, in particular, assume leadership roles in helping to make this a reality, their institutions will operate as fully integrated communities that model social, economic and biological sustainability along with interdependence with their local, regional and global environments. In many cases, we think of teaching, research, operations and relations with local communities as separate activities; they are not. In fact, these activities form a flexible network of experience and learning, as all operational segments of a college or university system are critical to achieving this *transformative* change. Practically speaking, five action steps need to occur, starting with chief executive and chief academic officers:

- *The content of learning* will reflect interdisciplinary systems thinking, dynamics and analysis for all majors and disciplines with the same *lateral rigor* across, as the *vertical rigor* within, the disciplines.
- *The context of learning* will change to make human and environmental interdependence, values, and ethics a seamless core of teaching in all the disciplines, rather than isolated in special courses or modules.
- The process of education would emphasize active, experiential, inquiry based learning and real-world problem solving both on campus and in the larger community.
- Higher education would *practice and model sustainability.* A campus would "practice what it preaches" and model economically and environmentally sustainable practices in its operations, planning, facility design, purchasing and investments, and link these efforts to the formal curriculum on an ongoing basis.
- Finally, institutions will implement *new forms of partnership* with their local and regional communities to help make them socially vibrant, economically secure, and environmentally sustainable. Universities and colleges have the ability to create new and better markets for goods and services that will improve society in all ways, not just in narrow economic terms.

Frank Rhodes, former president of Cornell University, suggests that the concept of sustainability offers "a new foundation for the liberal arts and sciences." It provides a new focus, sense of urgency, and curricular coherence at a time of drift, fragmentation, and insularity in higher education, what he calls "a new kind of global map."8 In these ways, sustainability leadership provides a vital source of hope and opportunity to facilitate institutional renewal and revitalize higher education's sense of mission.

## Current Realities for Presidents and Others

Over the past two decades, unprecedented growth has occurred in distinct academic programs related to the *environmental dimension* of sustainability in higher education. Innovative environmental, and now sustainability, studies and graduate programs are rapidly growing in every major scientific, engineering, social science, business, law, and religious discipline on campuses. Progress on campuses modeling sustainability has grown at an even faster rate. Higher education has embraced programs for energy and water conservation, renewable energy, waste minimization and recycling, green buildings and purchasing, alternative transportation, local and organic food growing and 'sustainable' purchasing. According to the U.S. Green Building Council, the higher

education sector has nearly four thousand new buildings that are being designed or have been designed to meet advanced levels of sustainable design under the LEED system (Leadership in Energy & Environmental Design) simply since 2000.[9] The weekly bulletin of the Association for the Advancement of Sustainability in Higher Education, the primary national network of colleges and universities working on sustainability efforts with over one thousand members, routinely cites 50-60 new sustainability initiatives in all aspects of campus life. The student sustainability and environmental movement is clearly one of the most well organized and sophisticated student initiatives since the anti-war movement of the 1960s. Collectively, these developments represent one of most encouraging trends in higher education innovation since World War II.

Unfortunately, college and university leaders, and even senior faculty members, are performing less effectively on the health, social and economic dimensions of sustainability. The overwhelming majority of graduates know little about the importance of sustainability or how to lead their personal and professional lives aligned with sustainability principles. This is largely a result of the deep and often hidden cultural assumptions described earlier, the disciplinary dominated educational model, the separation of classroom learning from the application and practice of sustainable living on campus, and an increasing emphasis on education for commerce and career. Critically important educational innovations about civic engagement and community service, inquiry-based and experiential learning, international perspectives, and environmental stewardship have been developed over the past two decades, and they are still not sufficient to make the transformative shift necessary at the rate and scale needed. Nor are the important efforts of non-governmental organizations such as Second Nature and The Campaign for Environmental Literacy, of student organizations like the Energy Action Coalition, and of fundamental higher education professional associations, such as the Association for the Advancement of Sustainability in Higher Education, going to prove adequate in accomplishing necessary goals. On balance, these efforts still have not been significantly integrated with other socially focused movements such as civic engagement, social justice, economic development in impoverished parts of the U.S. and the world, and human rights. With a few exceptions, sustainability, *writ large*, as suggested in the opening sections of this chapter, is not a central institutional goal, or lens for determining the success of higher education institutions. It is largely viewed as one of many priorities that will be handled as time and resources allow, and, as such, it does not represent a challenge to the existing purpose or structure of higher education.

## The Challenge for Campus Leadership Teams

In addressing sustainability decisions, presidents, provosts, chief finance officers, and trustees still view many of the challenges as environmental, not societal, and not as fundamental to how they can meet the basic needs of all current and future humans in a fair, equitable, peaceful and sustainable manner. Most higher education administrators and faculty members do not understand the urgency with which society must begin to reform the way it is operating and the extent to which their curricula needs to focus on social, economic, and ecological sustainability in order to fulfill its obligation to society. There is acceptance by presidents, chief academic officers, and many members that the current education system as it is designed and practiced has led to the unhealthy, inequitable, and unsustainable path that society is pursuing. The institutional rewards and incentives and the largest amounts of external funding for education and research continue to favor disciplinary over interdisciplinary or trans-disciplinary models, making it difficult to address the systemic and interdependent challenges of society.

The current higher education structure largely leaves students to integrate many different, and often conflicting, ways of viewing the world without adequate tools for systemic analysis and integration. Senior administrators, especially, in highly rated 4- year colleges and research universities, are often reluctant to engage with faculty over educational direction because of the resistance of faculty to administrative influence on academic freedom. *These are systemic challenges*. As a scholar of higher education, Lewis Menand, has observed,

> One thing about systems, especially systems as old as American higher education, is that that people grow unconscious of them. The system gets internalized. It becomes a mind-set. It is just "the way things are," and it can be hard to recover the reasons *why* it is the way things are. When academic problems appear intractable, it is often because an underlying systemic element is responsible, but no one quite sees what or where. People who work in the academy, like people in any institution or profession, are socialized to operate in certain ways, and when they are call upon to alter their practices, they sometimes lack the compass to guide them.[10]

Innovation by addition and growth over the past generation has not challenged colleges and universities to ask hard questions about whether the current structure is fulfilling its mission. For the first time since World War II, higher education is now faced with a number of serious *structural* constraints in financial resources that are not likely to be alleviated in the foreseeable future. This is very unfamiliar territory for many presidents and board members. Moreover, the change in mindset needed to face the gathering challenges that society faces is prompting a large number of people to question whether higher education can make the necessary systemic transformation far enough or fast enough without strong outside influence. In *Universities and the Future of America*, former Harvard president Derek Bok outlines

several concerns:

> When society recognizes a need that can be satisfied through advanced education or research *and* when sufficient funds are available to pay the cost, American universities respond in exemplary fashion... On the other hand, when social needs are not clearly recognized and backed by adequate financial support, higher education has often failed to respond as effectively as it might, even to some of the most important challenges facing America... After a major social problem has been recognized, universities will usually continue to respond weakly unless outside support is available and the subjects involved command prestige in academic circles.[11]

While it is unclear whether a majority of higher education institutions can or will lead this transformation, there are some recent examples of success in sustainability-driven thinking and action that can offer a road map for leadership teams.

## Systemic Change: How Some Have Achieved It

***The American College & University Presidents' Climate Commitment***

One of the brightest beacons of light for systemic change in the United States higher education has been the American College & University Presidents' Climate Commitment (ACUPCC), launched in February of 2007 by twelve college and university presidents, working with Second Nature, the Association for the Advancement of Sustainability in Higher Education (AASHE) and ecoAmerica.[12] It is a high-visibility, joint and individual commitment to measure, reduce, and eventually neutralize campus greenhouse gas emissions, to develop the capability of students to help larger society do the same and, most importantly, to report publicly on their progress. Three years later, as of July 2010, 673 colleges and universities, covering all fifty states and the District of Columbia, have made this commitment. They represent 5.9 million students—about 35 percent of the national student population—and include every type of institution from community colleges to the largest research universities. The ACUPCC is an example of unprecedented leadership of this type by college and university presidents and their institutions for several reasons:

- *Higher education is the first major national sector with a significant number of its members to commit to climate neutrality.* This is especially important given the slow pace of the international community and the United States Congress to act. The participating presidents believe that leading society to a low carbon, less auto-dependent economy complements and enhances the educational, research, and public service missions of higher education.
- *The ACUPCC represents the first time since World War II that higher education has taken on a major societal challenge without prompting or funding from outside sources.* The action by these presidents, chancellors, and provosts is sending a strong signal to society that climate change and other large scale unsustainable and societal practices are real, that urgent action is needed, and that higher education is taking tangible steps to model sustainable behavior and to provide the knowledge and educated graduates necessary for society to do the same.
- *In pledging to become climate neutral campuses, these leaders are pledging to do what is scientifically necessary, not what is easily achievable, within their current systems of operation.* The presidents realize that it will be extremely difficult to achieve climate neutrality in the next 20-50 years, and they are challenging their institutions to achieve this goal because the best scientific research, often produced by their own colleges and universities, indicates that it is necessary.
- *The positive impact of collective leadership by a large number of college and university leaders will be felt worldwide.* Creating a sustainable society is a global challenge requiring solutions of immense proportions. The scale and speed of this challenge demand an unprecedented level of collaboration among leadership teams, boards of trustees, faculty, and students because actions by individual institutions will not be sufficient.
- *The Commitment has accelerated efforts to integrate academic, research, operational, and community outreach actions in a holistic approach to sustainability.* There is substantial anecdotal evidence on how effective the Commitment has been in raising the importance of all sustainability initiatives on campuses. According to presidents, chancellors, and provosts, at numerous participating colleges and universities, the ACUPCC has done as much to create and sustain a vibrant community and sense of shared purpose across those institutions than any other initiative in their recent histories.
- *The ACUPCC has fundamentally shifted higher education's attention on sustainability from a series of individual program efforts to a broader strategic imperative among chief executive and chief academic officers, business officers, and board members.* Sustainability is becoming a *key lens for measuring the success* of the institution as a whole.

***New Majors in Sustainability Studies***

The number of institution-wide efforts to ensure that sustainability is a foundation of all learning and practice is small but growing. There are currently a large number of degree-granting programs for environmental, natural resource management, and sustainability specialists at all levels of American higher education. Over one thousand colleges and universities now offer an undergraduate interdisciplinary degree program in some form of environmental or sustainability studies. These programs, which reach an important segment of the student population, are key to ensuring that busi-

ness, government, and NGOs will have the specific kinds of expertise necessary to address increasingly complex sustainability challenges directly.

***Sustainability-focused Institutional Missions***

There is a smaller number of private and a few public baccalaureate-granting liberal arts colleges that have either been created or have evolved to make sustainability the *core mission* of their education and practice. They emphasize interdisciplinary learning, experiential learning on campus and in their local communities, and model sustainable action in their institutional operations. Notable institutional examples include College of the Atlantic and Unity College in Maine, Green Mountain College in Vermont, Northland College in Wisconsin, Prescott College in Arizona, Alaska Pacific University, Berea College in Kentucky, Warren Wilson College in North Carolina, and the Evergreen State College in Washington.

## A Bold Experiment: Arizona State University

One of the biggest challenges is in convincing a large public or private research university to make sustainability a core goal of research and education because of its size, the decentralized nature of its decision-making and operations, and the academic independence of the individual schools as well as their strong connections to external funding institutions and professional communities.

Arizona State University, based in Tempe, with 67,000 students and nearly 18,000 faculty and staff members, began an experiment in 2002 to change the dominant paradigm of the institution. Michael Crow, its new president, set out to create what he calls the "New American University." One year later, he established what has become the Global Institute of Sustainability (GIOS), and in 2004 ASU founded the full degree- granting School of Sustainability, which has steadily grown to over 600 undergraduate majors and nearly 100 graduate students. Additionally, all first-year and transfer undergraduates, totaling over 20,000, are exposed to principles of sustainability through the required "ASU 101" course. James Buizer, whom President Crow recruited from the National Oceanic and Atmospheric Administration to lead the conceptualization, formation, and design of GIOS indicates that "injecting a sustainability program into a university requires courageous leadership and commitment throughout the institution, beginning at the very top, and including through to the College Deans, School Directors and Departmental Chairs. Without the vision and active leadership from President Crow, GIOS would never have happened."[13]

Over almost a decade, this concept of the New American University has transformed ASU, guided by eight "design aspirations": (1) Leverage Our Place; (2) Transform Society; (3) Value Entrepreneurship; (4) Conduct Use-Inspired Research; (5) Enable Student Success; (6) Fuse Intellectual Disciplines; (7) Be Socially Embedded; and (8) Engage Globally. Each of these aspirations is critical to create a sustainable society and, as a group, they hold great promise as a template for other engaged universities and colleges.

ASU has been aggressive, experimental, and entrepreneurial in working to fulfill its commitment to sustainability. In recognizing the limits presented by the traditional disciplinary structure, President Crow explained progress to date in the May/June 2010 issue of *Trusteeship:* "More than 20 new transdisciplinary schools, including such entities as the School of Human Evolution and Social Change and the School of Earth and Space Exploration, complement large-scale initiatives such as the Global Institute of Sustainability (GIOS) and the Biodesign Institute, a large-scale, multidisciplinary research center dedicated to innovation in healthcare, energy and the environment, and national security. In the process, we have eliminated a number of traditional academic departments, including biology, sociology, anthropology, and geology."[14]

This approach represents what is probably the most aggressive and explicit attempt to address the invisible mind-set and the systemic challenges in higher education discussed previously, although ASU admits that it still struggles with cultural challenges related to traditional reward structures, the expectations related to tenure and promotion, and the tensions inherent in convincing multiple researchers that "use-inspired" knowledge creation is of equal value. Still, in the view of Joel Garreau, author of the book, *Radical Evolution*, who became ASU's Lincoln Professor of Law, Culture and Values in 2009, "Arizona State University has become the nation's foremost silo-busting institution. As one example, across the street from my office is Biodesign in which groups of people are quietly working on inventing our futures with 400,000 square feet of creatures that do not exist in nature. President Crow has done an amazing job or rewiring the DNA of the University—especially in such a short time. Cross-disciplinary collaboration has become so much the norm that one tends to forget it is not like many other places, until one is reminded what it was like in ages past."[15]

## Conclusion: Campus Leadership as Sustainability Leadership

While there has been rich scholarship on leadership in higher education, there has been, to date, little research examining the complex elements within sustainability leadership. One newly published study by Glen Cummings, Deputy Assistant Secretary of Education in the U.S. Department of Education posed a key question: "What common characteristics and actions were taken by successful university and college leaders in pursuit of sustainability?" Four institutions of higher education which have been considered national leaders on sustainability were chosen for detailed analysis: two

four- year public research universities, Arizona State University and University of New Hampshire, and two two-year public community colleges, Cape Cod Community College and Foothill D'Anza Community College. The author found many common traits and strategies among the leaders:

- *Leadership plays a crucial role in the success of sustainability implementation.* The four presidents realized these central factors: (a) Higher education is positioned centrally to help society move on a more sustainable path, (b) Sustainability success requires a comprehensive institutional shift, (c) Presidents, most of all, hold a unique role in conveying the importance of an institutional commitment to sustainability, (d) Sustainability needs to become stated as an aspect of the institution's mission, and (e) Sustainability provides an opportunity to re-shape each institution to meet its highest ideals.
- *Administrative policies, particularly in human resource management, can create significant long-term focus on sustainability.* To varying degrees all four institutions attempted to influence hiring and, in some cases, decisions on tenure and promotion to support the movement towards sustainability. They also created complementary practices, expectations, and norms to reinforce sustainability.
- *Effective leaders use the power of "milestones" to underscore the institutional significance of sustainability.* Presidents and provosts utilized important events to strengthen institutional pride and embed sustainability thinking and goals into the school "brand." At UNH, for example, the entire 2008 commencement ceremony centered on the theme of sustainability, including the first "turning of the switch" of the new methane pipeline that provides over 80 percent of the campus' energy needs.
- *Leaders can use their ability to "tell the story" of sustainability to engage funders in providing new resources to the institution.* Three of the four schools achieved national prominence in sustainability partly or wholly as a result of private philanthropy or government grants. The presidents' and trustees' skill in making the case with external funders and both internal and external stakeholders was key to their success.[16]

These examples and others are also discussed in a recent publication by the American College & University Presidents' Climate Commitment (ACUPCC), entitled "Leading Profound Change."[17] They reflect an understanding that for higher education leaders to move their institutions in this direction requires four major overarching perspectives. First, for colleges and universities to fulfill their roles related to sustainability requires transformative institutional strategies. Second, all effective strategies toward these ends must be communicated to and endorsed by everyone in the campus community. Third, success depends on a dedicated group within the community empowered to lead the process over the long-term, and, finally, provosts and other leadership team members must hold all involved accountable for success and measure their outcomes. Assessment, in this instance, must go far beyond merely "checking the box" that sustainability is a priority. It will require patient, persistent attention and the kind of stamina and vision to inspire large numbers of people to imagine a better future and collaborate in creating it.

Some higher education observers continue to argue that achieving climate neutrality and sustainability as a society and convincing college and university administrators to lead this effort is impossible. However, if we continue business as usual, today's students and their children will experience much harsher effects of climate disruption and other large unsustainable means of meeting human needs, finding themselves caught in a world with greatly diminished prospects for quality of life, peace, and security. The challenge for boards of trustees and leadership teams is one of both courage and mobilization. Toward this end, Richard Cook, who retired in 2008 as president of Allegheny College, and is one of the founders of the American College & University Presidents' Climate Commitment, wrote to a colleague who had not yet made the commitment:

> I liken this pledge to President Kennedy's promise to get men to the moon and back within the decade. Neither he nor a cadre of engineers and scientists knew exactly how this would be accomplished or if, indeed it could be. But making a bold pledge to accomplish a strategically important end spurred attention, resources, talent, and urgency to a lofty goal that would be difficult to attain. In much the same way, the Commitment to becoming climate neutral institutions will spur development and accountability, and will surely, in most cases, produce more and better results in a shorter period of time than something short of a specific target. The collective voice of higher education can spotlight our sincere concern and commitment to action in ways that few if any other sectors can. We have largely provided the research that has highlighted the climate concern; we also can provide many of the solutions. If the colleges and universities don't lead, who will?[18]

The goals are outlined before us. Some will follow, and some must lead.

## About Anthony D. Cortese

Anthony D. Cortese, ScD is a Senior Fellow of Second Nature, the Boston-based advocacy organization committed to promoting sustainability through higher education. He was its co-founder along with U.S. Senator John Kerry (D-MA), Teresa Heinz Kerry and Bruce Droste. He served as president from March 1993-August 2012.

He was the organizer of the American College & University Presidents Climate Commitment and co-founder of the Association for the Advancement of Sustainability in Higher Education and the Higher Education Association Sustainability Consortium.

He is a frequent consultant to higher education, industry and non-profit organizations on institutionalization of sustainability principles and programs.

Dr. Cortese was formerly the Commissioner of the Massachusetts Department of Environmental Protection. He was the first Dean of Environmental Programs at Tufts University and founded the award-winning Tufts Environmental Literacy Institute in 1989 that helped integrate environmental and sustainability perspectives in over 175 courses. He also organized the effort that resulted in the internationally acclaimed Talloires Declaration of University Leaders for a Sustainable Future in 1990 now signed by over 350 presidents and chancellors in over 50 countries.

Dr. Cortese is a trustee of Tufts University and Green Mountain College and a Fellow of the American Association for the Advancement of Science.  He has been actively engaged in dealing with large system sustainability challenges for 40 years.

Dr. Cortese is a frequent presenter to a wide variety of professional audiences.  His essays on Education for Sustainability serve as foundational reading for transforming the education and practice of higher education.

Dr. Cortese has B.S. and M.S. Degrees from Tufts University in civil and environmental engineering, a Doctor of Science in Environmental Health from the Harvard School of Public Health and an Honorary Doctor of Humane Letters from Allegheny College and the University of Maine Presque Isle.

[1] Dianne Dumanoski, *The End of the Long Summer: Why We Must Remake Our Civilization to Survive on a Volatile Earth* (New York: Crown Publishers, 2009), 21.

[2] Dumanoski, 22.

[3] Dumanoski, 2.

[4] Orr, David W., *Earth in Mind: On Education, Environment, and the Human Prospect* (Washington, D.C.: Island Press, 1994), 1, 17.

[5] Gary Rivlin, "Age of Riches: In Silicon Valley, Millionaires Who Don't Feel Rich" *The New York Times*, August 05, 2007.

[6] Bret Schulte, "Saving Earth, Saving Money," *U.S. News and World Report*, October 1, 2006, http://www.usnews.com/usnews/news/articles/061001/9qa.htm

[7] Ray C. Anderson, "Editorial: Earth Day, Then and Now," *Sustainability: The Journal of Record 3*, no. 2 (April 2010): 73-74.

[8] Frank H.T. Rhodes, "Sustainability: the Ultimate Liberal Art," *The Chronicle of Higher Education*, October 20, 2006. http://chronicle.com/article/Sustainability-the- Ultimate/29514 (accessed August 10, 2010).

[9] USGBC: U.S. Green Building Council homepage, http://www.usgbc.org/ (accessed August 10, 2010).

[10] Louis Menand, *The Market Place of Ideas* (New York: W.W. Norton & Company, Inc., 2010), 17.

[11] Derek Curtis Bok, *Universities and the Future of America* (Durham, NC: Duke University Press, 1990), 104-05.

[12] See the Presidents' Climate Commitment webpage at: http://www.presidentsclimatecommitment.org/ (accessed August 10, 2010).

[13] James Buizer, in a conversation with Anthony Cortese, July 2010.

[14] Michael Crow, "Towards Institutional Innovations in America's Colleges and Universities, *Trusteeship* 3, no. 18 (May/June 2010): 4.

[15] Joel Garreau, email to James Martin, September 18, 2010

[16] Glen Cummings, "The Leadership Factor: Implementing Sustainability in Higher Education," July 6, 2010. http://www2.presidentsclimatecommitment.org/pcc/newsletter/022.html (accessed August 10, 2010).

[17] Anthony Cortese, Georges Dyer, and Michelle Dyer. "Leading Profound Change A Resource for Presidents and Chancellors of the ACUPCC." Boston, MA: ACUPCC, July 2009. http://www.presidentsclimatecommitment.org/files/documents/Leading_Profound_Chang e.pdf (accessed August 10, 2010).

[18] Richard Cook, private Communication with Anthony Cortese, April 2010.