

A PURPOSEFUL JOURNEY: THE QUEST FOR SUSTAINABILITY AT THE MODERN AMERICAN UNIVERSITY

**BARBARA MUNSON GOFF MEMORIAL LECTURE
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Introduction

Thank you for the opportunity to speak to you this evening. This is my first visit to the Rutgers campus, but for many years I've known of Rutgers' commitment to sustainable development and environmental protection. In 2001, during my tenure as President of the National Wildlife Federation, we published the "State of the Campus Environment" – a national report card on environmental performance and sustainability in higher education. Rutgers' Purchasing Director Kevin Lyons assisted NWF in this study. That same year at NWF's annual convention I presented Kevin and Rutgers' Purchasing Department with a National Conservation Achievement Award for Rutgers' pioneering "green procurement" program.

I'm also grateful to Patrick Mullen of the Students for Environmental Awareness for inviting me to give this presentation. As we approach the 38th Earth Day, it's great to see continued student leadership and activism on environmental issues. After all, students at colleges and universities around the United States organized the first Earth Day in 1970, which helped launch the modern American environmental movement.

Homage to Barbara Goff

I am especially honored to give this presentation in honor of the life and work of Barbara Munson Goff. I never met Professor Goff, but my preparation for this lecture included research into her accomplishments. I called some of her former colleagues, spoke with former students and I "Googled" her name. I quickly learned that Barbara Goff was a "Renaissance woman" with wide-ranging intellectual interests. I learned of her years of leadership at Rutgers, especially with Cook College and as director of the honors program. I learned that she was a gifted teacher, who twice was named Professor of the Year.

But I wanted to know more. So, I turned to the authoritative sources of information about college professors – "MySpace" and "ratemyprofessor.com." Here's what I found:

- "Dr. Goff is amazing—such a fascinating person who has quite an opinion of everything. I think I learned more in her class about the way the world works than I have throughout my entire life."

- “Dr. Goff is probably the coolest prof that a Rutgers student is likely to find. She’s enthusiastic and entertaining; no matter what she is talking about. And she actually cares about her students (how many professors can you say that about).”
- “Dr. Goff is by far the best teacher I have ever had. She is absolutely amazing, the smartest woman alive, and sooo funny. Tough, oh my yes. But a wonderful woman.”

And, my favorite:

- “This woman is awesome. She's very intelligent...and a total hippie. Rock on!”

These remembrances resonated deeply with me because I had a teacher like Professor Goff, who became my inspiration and a mentor for my career. He is Joe Sax, whom I had as a law professor at the University of Michigan more than twenty-five years ago. He’s known as the “father of environmental law” and wrote many influential books and articles. More important, he inspired me and an entire generation of environmental lawyers who went on to work with environmental advocacy groups or serve with government environmental agencies and in other leadership positions. Just as you who knew Barbara Goff honor her, we who were Joe Sax’s students and colleagues are honoring him by creating an endowment in his name for student fellowships at the University of Michigan Schools of Law and Natural Resources & Environment.

Anyone fortunate enough to have had a teacher and mentor like Joe Sax or Barbara Goff appreciates the significance of their lives and the gift of themselves they gave to their students and colleagues.

Sustainable Development And The Modern American University

During my more than twenty years at National Wildlife Federation and in the last five years at ConservationStrategy, I’ve had many opportunities to work with various colleges and universities on the issue of “sustainability.” NWF’s Campus Ecology program, which has reached over half of America’s colleges and universities, was founded during my tenure. As mentioned earlier, we published the first “State of the Campus Environment” report and NWF has continued working with colleges and universities by deploying campus organizers across the U.S.

Since leaving NWF, I have worked with the Wege Foundation on its “Economicology” program. Peter Wege coined the term “Economicology” and published his book, *Economicology: the Eleventh Commandment*, to articulate a vision of a sustainable future based on integrating economic and ecological thinking. For more than ten years the Wege Foundation has been convening annually a group of nearly twenty colleges and universities interested in sustainability to learn from each other, share best practices, and identify specific ways in which to take action on their campuses and in their communities. The Economicology schools include Yale, Carnegie Mellon, University of Michigan, Michigan State, Arizona State, and the University of California-Santa Barbara, as well as smaller private schools and community colleges like Aquinas College and Grand Rapids Community College. I am currently working with the American College and University Presidents Climate Commitment on planning their second summit. Over 500 presidents have now signed this commitment to reduce their

schools' global warming pollution and become "carbon neutral." Approximately 200 of them are expected to attend this summer's summit and we would welcome Rutgers' President to join us and become a signatory to the Climate Commitment.

These experiences have informed my thinking about the meaning of sustainability for the modern American University. I have assembled these thoughts for your consideration this evening and have titled my talk, "A Purposeful Journey: The Quest For Sustainability At The Modern American University."

Defining Sustainable Development

Sustainable development is especially relevant to a state university like Rutgers with its proud land-grant tradition and its history of community involvement and outreach. Rutgers – and the State of New Jersey – have long recognized the importance of sustainability. New Jersey was the first, and still may be the only, state to have a State Sustainability Report with measurable indicators of progress. Recently, Rutgers has undertaken an overview of what sustainable development means for this institution, issuing last fall Rutgers' first Sustainability Report. It aspires to translate Rutgers' leadership on a number of important environmental issues, like the award-winning green procurement initiatives and your Recyclemania victories, into a comprehensive sustainability initiative.

The Rutgers Sustainability Report adopts the now-classic definition of sustainable development from the United Nations Commission on Sustainable Development and the Environment (a.k.a., the "Brundtland Report"): "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." To its credit, the Rutgers Committee for Sustainability went further and refined this definition into this "Working Definition of Sustainability":

We define sustainability as a condition wherein current human activities are not diminishing the resources available for future generations. We are not now sustainable. *Sustainable development is more of a journey than a destination, representing a mindset that takes a long-term and balanced view of daily decisions.* Rutgers University will contribute to sustainability by reducing its environmental footprint while enhancing its contributions to the social and economic capital of New Jersey, the nation, and the world.

Three aspects of this definition caught my attention:

- First, the blunt and honest admission that Rutgers is not now sustainable;
- Second, the view of sustainable development as a *journey* that involves *changing mindsets*; and,
- Third, the acceptance of responsibility for achieving sustainability beyond the campus – in New Jersey, the United States and globally.

A Purposeful Journey Toward Sustainability

Every journey starts with recognizing the need to get somewhere else other than where you are. That's why Rutgers' honest admission that it is not now sustainable is essential. This candid self-assessment should be *celebrated* as it is a precondition for progress.

Many universities come to realize they are not sustainable as a result of criticism generated by students, faculty or outside organizations. For example, The Sustainable Endowments Institute has developed a "College Sustainability Report Card" project that annually grades leading colleges and universities on their sustainability practices. You are undoubtedly curious about Rutgers' grade. In 2008, Rutgers received a "C." Now, I know no one likes getting a "C." But one must know the difference between "C" work and "A" work in order to do "A" work. Regardless of whether or not this grade is correct, Rutgers is to be commended for its candid admission of the need to do more and for creating a process with the Committee for Sustainability to systematically plan its journey.

Most interesting is Rutgers' definition of sustainable development as a journey, a journey to achieve a different mindset. But I'm not sure the word "journey" fully captures how important and difficult this trip will be. Maybe, it would be more accurate to call it a *quest*. There's a difference between a quest and other kinds of travel – it has to do with the purpose of the trip. For example, you "run out" to the local convenience store for milk (or, perhaps, beer); you "commute" to classes (hopefully, not too far and using mass transit); you "travel" to visit parents and friends; and if you take a "journey," you probably go somewhere exotic and, perhaps, for a longer time.

But a quest is something much more. *A quest is a purposeful journey, infused with historical significance, ennobled with heroic goals, capable of inspiring everyone encountered along the way.*

Viewing the pursuit of sustainability as a purposeful journey – as a quest – is a more radical idea than it may seem. The question of purpose, when applied to a university, can be very threatening. In his essay, *A New American University: The New Gold Standard*, Arizona State University President Michael Crow notes that "disinterested inquiry ... has always been a hallmark of the academy." Prestige and success in academia are attached to the creation of new knowledge, and the question is not often asked whether or not it is "knowledge that can be harnessed to a purpose." Crow has challenged American universities to set a new "gold standard" based on a new purpose.

A research university is inherently committed to the principle that teaching is most effectively carried out in a context that encourages the creation of new knowledge – teaching and research are intrinsically allied. But our scientific, technical, artistic, theoretical, and philosophical sophistication far outstrips our knowledge of the relationship between research and its outcomes. *What we must begin to think about – and what our current academic cultures sometimes fail to consider – is the purpose behind our work.*

“The purpose behind our work” What might it be? What *should* it be? What is the ennobling purpose that will transform Rutgers’ journey toward sustainability into a worthy quest?

Simply put, it is to heal the Earth.

Universities have a special responsibility to adopt this purpose. It is inherent in the acquisition of knowledge. The more you know, the more you are called upon to act. The great ecologist and conservationist, Aldo Leopold, wrote more than fifty years ago about the responsibility to heal the Earth that comes with knowledge:

One of the penalties of an ecological education is that one lives alone in a world of wounds.... An ecologist must either harden his shell and make believe that the consequences of science are none of his business, or he must be the doctor who sees the marks of death in a community that believes itself well and does not want to be told otherwise.

Leopold also warned those with knowledge who fail to act as a doctor and seek to heal the Earth to beware that they “do not become undertakers of the mysteries at which they officiate.”

Every administrator, faculty member and student at Rutgers – each of you in this room – faces a simple choice: *will you be an undertaker or will you be a healer?* Your knowledge, your understanding of the world of wounds in which we live requires that you choose; and, not choosing is choosing to be an undertaker. I have a sense, from all I’ve learned of Barbara Goff, of what her choice was.

It is the choice to be a healer that gives purpose to the sustainability journey and turns it into a quest.

But which of the world’s many ills warrant attention first! What is the goal of this quest? The goal for this quest is more concrete more clear than at any time in the history of the modern environmental movement. Over the last few decades we’ve tended to view environmental problems as a laundry list of ills; air pollution, water pollution, hazardous waste disposal, loss of agricultural land, sprawl, the collapse of fisheries, declining numbers of wildlife, and so on. Traditionally, researchers specialized in the study of each of these problems, government agencies organized themselves by the taxonomy of problems, and hundreds, if not thousands, of advocacy groups, formed to press for their solutions to their favorite problem.

As we approach the 38th Earth Day, there has been a significant change in our collective understanding of environmental problems. We have achieved a great synthesis and reached a global consensus about the need to organize all our efforts to meet the overarching challenges posed by two primary environmental problems: the loss of biodiversity and climate change.

Having worked as an organizer, environmental attorney, teacher and environmental group leader, one of the most remarkable changes I’ve witnessed since the first Earth Day is the degree to which business leaders, governments, scientists and environmental groups have reached consensus that these are the

two most pressing environmental issues – at the global, national, state and local level. The “changed mindset” to which the Rutgers’ definition of sustainability aspires must include a recognition of Rutgers’ responsibility to confront these two issues.

This global consensus that the goal of our quest is to solve these two problems results from an incredible coming together of scientists and experts from around the world that has been compiled into two remarkable reports: The Intergovernmental Panel on Climate Change’s Fourth Assessment Report, *Climate Change 2007*, and the Millennium Ecosystem Assessment. I would like to summarize briefly the consensus conclusions reached by these two reports and their New Jersey corollaries.

Climate Change

The Intergovernmental Panel on Climate Change (IPCC) convened by the United Nations was a co-winner of the Nobel Peace Prize last year for its work. Reviewing the research of thousands of scientists and experts, the IPCC’s Fourth Assessment Report released last year reached these compelling conclusions about global climate change:

- It is real and is already happening;
- It is largely caused by humans’ global warming pollution and land uses practices;
- Significant, perhaps catastrophic, changes will likely occur if we don’t fundamentally change how we use energy and live upon the land; and,
- Those least able to adapt to changes in climate, because of their poverty or where they live, will likely suffer the worst impacts.

Obviously, this is a simplistic summary of a complicated topic, but I’m not Al Gore and this is not a talk about the science of global warming. I’m here this evening to talk about *what the science means* in directing Rutgers’ journey toward sustainable development.

The challenges posed by global warming have been recognized by the State of New Jersey and by Rutgers University. Rutgers’ sustainability report states:

Scientists and researchers are beginning to understand the impact of these changes for local communities in New Jersey. Rutgers should also respond to the sustainability concerns of society as a whole. At the top of the list should be a University commitment to reducing greenhouse gas emissions. The Governor has established aggressive targets for the state, and numerous student and faculty voices have called for a commitment by the University to similar targets.

Reducing global warming pollution will require fundamental changes in how we use energy; it will require pervasive changes in the lifestyle to which Americans have become accustomed. This is an enormous change in mindset. Rutgers’ quest for sustainability must include leading New Jersey in this

journey of thinking anew about the American dream and lifestyle. This is not just a scientific inquiry and it will require all of the disciplines and resources available at a great university such as this.

Biodiversity Loss

Global warming is not the only overarching goal for our quest. Although the IPCC was awarded the Nobel Peace Prize for its work, there is another comparable effort of equal importance that has not received the same degree of recognition. The Millennium Ecosystem Assessment (MEA) was based on the example of the IPCC and commissioned by then United National Secretary General Kofi Annan in 2000. Its charge was “to assess the consequences of ecosystem change for human well-being and the scientific basis for action needed to enhance the conservation and sustainable use of those systems and their contribution to human well-being.” It is, like the IPCC report, a synthesis and consensus statement of scientists and experts from around the world to say what the science means in terms of the degradation of natural ecosystems and loss of biological diversity.

Importantly, it focused on the connection between human well-being and the well-being of natural systems. It rejected decades of environmentalism premised on a people vs. nature paradigm. Earlier today, I stopped at the Rutgers’ bookstore and purchased this set of Sierra Club note cards. It could just as well have been note cards or a calendar from the National Wildlife Federation, Wilderness Society, or any other national environmental group. One thing I can guarantee about these note cards, or calendars, is that none of them will include a natural scene in which there are people. Recently, as part of my consulting with a major U.S. environmental group, I encouraged its senior leadership team to perform a “thought experiment”: to imagine a calendar for their members where people appeared in every month’s picture. The brilliance of the Millennium Ecosystem Assessment is that it puts people back in the picture.

As I mentioned earlier, one of the essential attributes of a quest is its inclusiveness. A quest inspires many to become involved because all are affected. Would-be bystanders are swept up by its purpose and join forces in pursuing the quest’s goal. The Millennium Ecosystem Assessment is inclusive of all who inhabit this planet by demonstrating in great detail how human life, even at the beginning of the 21st Century, still depends on the health of the natural world.

The focus of the MEA is on “ecosystem services,” which it divided into “provisioning services” such as food, water and genetic resources; “regulating services” such as air quality, water quality, pollination and disease regulation; and “cultural services” such as spiritual and aesthetic values and recreation. For each of the 24 ecosystem services it identified, the MEA evaluated whether or not they were declining and improving. You will likely not be surprised to learn that most of them were found to be declining.

And what is the diagnosis and prognosis? The Board of the Millennium Ecosystem Assessment summarized its conclusions in these seven simple statements:

1. At the heart of this assessment is a stark warning. Human activity is putting such strain on the natural functions of Earth that the ability of the planet's ecosystems to sustain future generations can no longer be taken for granted.
2. The provision of food, fresh water, energy, and materials to a growing population has come at considerable cost to the complex systems of plants, animals, and biological processes that make the planet habitable.
3. As human demands increase in coming decades, these systems will face even greater pressures—and the risk of further weakening the natural infrastructure on which all societies depend.
4. Protecting and improving our future well-being requires wiser and less destructive use of natural assets. This in turn involves major changes in the way we make and implement decisions.
5. We must learn to recognize the true value of nature—both in an economic sense and in the richness it provides to our lives in ways much more difficult to put numbers on.
6. Above all, protection of these assets can no longer be seen as an optional extra, to be considered once more pressing concerns such as wealth creation or national security have been dealt with.
7. This assessment shows that healthy ecosystems are central to the aspirations of humankind.

The MEA confronts head-on the notion that there can be any bystanders unaffected by the success or failure of the quest for sustainability. It challenges the delusion that we no longer depend on natural systems. It said: “[t]hese are dangerous illusions that ignore the vast benefits of nature to the lives of the 6 billion people on the planet. We may have distanced ourselves from nature, but we rely completely on the services it delivers.”

As with the issue of climate change, the loss of biodiversity in New Jersey is equally concerning. And, just as the MEA gives us a global map for our journey to sustainability, New Jersey has developed a statewide plan. It's called “The NJ Wildlife Action Plan.” This plan, developed over the past few years and updated just this January, is a “blueprint for the conservation of New Jersey's important habitat types, for the ecosystem services they provide humans, and for the species that, perhaps not formally designated as endangered, have been determined to be of “great conservation need.”

Although an urban state, the remaining biological richness of New Jersey is awe-inspiring. Here's how the Wildlife Action Plan described it:

Our larger, unfragmented forest tracts are among the largest on the mid-Atlantic coast and are home to resident bobcats, barred owls, and timber rattlesnakes and provide essential stopover habitat for most of the eastern U.S. migratory population of

songbirds and raptors. Similarly, New Jersey's Atlantic and Delaware Bay coastal habitats are home to bald eagles, northern harriers, black rails, and piping plovers and are critical to millions of migratory raptors, waterfowl, shorebirds, butterflies, dragonflies, and fishes. Our woods, wetlands, streams, and fields support a staggering array of wildlife species, including 73 state endangered and threatened species, some of which are recognized as globally rare.

Despite this richness, the Plan's prognosis for the future is grim: "[i]f we ask whether all of our wildlife species are secure and if they all will be available to our children or to their children, the answer is not likely." It identifies the greatest threat to wildlife and to New Jersey's natural resources as habitat loss, destruction, alteration, and fragmentation. To this overarching threat, it adds the problems in invasive species, pollution and poor land management practices. This plan is a road map for the quest to heal New Jersey's ecological wounds.

So, the direction for our journey is clear; the object of our quest explicit. It is laid out by the IPCC report the Millennium Ecosystem Assessment and their state and local corollaries. Rutgers' quest, like that of every American university, is to remake itself in the service of this quest.

Setting Out On The Quest For Sustainability

So, what exactly does this mean for Rutgers and other American universities? How does Rutgers transform itself for this purposeful journey – this quest – for sustainability? What are the lodestars by which to navigate and the milestones by which to measure progress?

First, Rutgers and other universities must accept the centrality of sustainability to their mission and to all that they do. Perhaps, the most famous recognition of this came from the "Talloires Declaration" by university leaders who convened in Talloires, France in 1990. Rutgers is a signatory to this Declaration, which states:

Universities educate most of the people who develop and manage society's institutions. For this reason, universities bear profound responsibilities to increase the awareness, knowledge, technologies, and tools to create an environmentally sustainable future.

The National Council for Science and the Environment has similarly emphasized the roots of our environmental crisis in flawed thinking, stating "[e]cological disorder reflects a prior disordering of thought, perceptions and values. *The ecological crisis is a crisis of mind*, which makes it a challenge for those institutions which purport to improve minds. It is, in other words, an educational crisis."

Rutgers University has recognized this "crisis of the mind" by including in its working definition of sustainability the need to embark on a journey to "a changed mindset." It has also taken the important initial steps of assembling the leadership structure and a cross-university team through the University Committee for Sustainability formed in 2005, which last year issued Rutgers' first *Sustainability Report*. This Report includes an assessment of sustainability at Rutgers based on selected indicators, including

solid waste disposal, energy usage, water usage, and emissions of greenhouse gases and local air pollutants.

The Committee on Sustainability has also been charged with recommending to the Rutgers leadership the “goals” or milestones by which to assess progress on the journey to a new mindset of sustainability, including: solid waste, energy, water, CO2 and other pollutant emissions, transportation adequacy, and land utilization. Currently, the Committee is establishing a process to develop “reasonable yet aspirational targets” for each of these goals.

These are, indeed, important goals relevant to any university and it is essential that each university develop measurable targets. Universities are major institutional actors in our society with a significant environmental footprint and a significant economic impact. As Tony Cortese, President of Second Nature, has observed: there are “4,000 universities in the country spending \$190 billion on goods and services (in 2001) annually. That’s greater than the GDP of all but 20 nations. If schools were practicing renewable energy and buying environmentally sound products, it would have a huge impact.” As I mentioned earlier, Rutgers has been a pioneer in “greening” its supply chain as demonstrated by the NWF award to your Purchasing Department and Kevin Lyons’ book, “Buying for the Future: Contract Management and the Environmental Challenge.”

But, these goals are not enough! Additional goals and targets for measuring Rutgers’ progress toward sustainability should be set for *what* is taught and *how* it is taught.

Since Rutgers has recognized that the sustainability journey requires changing “mindsets,” it should develop specific targets for changing the mindset of its administrators, faculty, students, and staff – and of the communities of which it is a member and in which it has influence. Here is where the quest for sustainability poses its most fundamental challenge to the organization and curricula of the typical American university.

Developing A Curriculum For Sustainability

The quest for sustainability requires fundamental changes to the curriculum – to what is taught and to how it is taught. For example, universities have a responsibility to ensure the environmental literacy of all graduates.

In 2005 the National Environmental Education and Training Foundation summarized ten years of surveys of the American public by the Roper Organization Reports. This report found “a persistent pattern of environmental ignorance even among the most educated and influential members of society.” The report estimated that only 1% to 2% of American adults could be considered environmentally literate and found little difference between the average American and government and business leaders.

In part, low levels of environmental literacy may reflect what author Richard Louv called “nature-deficit disorder” in his book, *Last Child in the Woods*. In the past, most people grew up on farms or in settings where they learned important lessons through their daily interactions with nature. Today, in our ever-

more-urbanized society, more technologically “wired” society, this is no longer so. As a result, we are facing an “extinction of experience” of nature, as well as the extinction of many species.

Many of the most fundamental ecological concepts are no longer learned through experience and can no longer be assumed. Today, people don’t intuitively understand such simple concepts about nature as:

- *Water runs downhill.* Most people live their lives unaware of the watershed they inhabit. They have no sense of the impacts of what runs off their lawn, what they pour down their drains or flush down their toilets.
- *Animals need homes too.* Many people who enjoy viewing birds in their backyards or other wildlife in cities or suburbs don’t understand the concepts of an animal’s range or migratory patterns. They don’t understand that healthy habitats are required across ecologically meaningful landscapes or those birds and animals will disappear.
- *Animals and people share the same homes.* In our high-tech society of modern conveniences most people do not understand that their fate is tied to the health of the environment. Many believe that protecting natural landscapes and functioning ecosystems is a luxury.
- *There is no such thing as away.* Most people don’t understand the basics of energy and materials flows or the fundamentals of total life cycle analysis.

Universities must assure that *every* graduate from *every* program is environmentally literate. Not only must they understand the key concepts involved in ecology, energy systems, food systems, and so forth in an abstract sense, they must also be able to apply these concepts at the local, state, national and international level.

Teaching Environmentally Literate Citizens

Equally important, students must be able to synthesize their learning in a policy relevant way. Put differently, they must be educated to be environmentally literate *citizens*.

Several of Barbara Goff’s colleagues and former students told me that she was an environmental activist. In 2006 she wrote: “I’ve had a hand in the making of many doctors and veterinarians. But I am as proud, if not prouder, of the university professors, high school teachers and math teachers, environmental lawyers, organic farmers, environmental and community activists. Without any children of my own, they are a legacy I can feel good about.” Professor Goff taught her students how to be healers in a world of wounds.

This commitment to engagement is reflected in Rutgers’ working definition of sustainability. It includes an acceptance of Rutgers’ responsibility to be an agent for sustainable development in “New Jersey, the nation and the world.” Perhaps, this reflects Rutgers’ roots as a “land grant” college; at many other universities sustainable development is not viewed including the assumption of responsibility for the well-being of local and regional communities.

Transforming the culture of disengagement requires a new willingness by universities to participate in partnerships across sectors. As ASU President Michael Crow has said, the sustainable university doesn't assess itself by the numbers and quality of students it excludes, but by who it includes through its engagement with the community and its work with partners. Community service is an essential element of the sustainable university as are incentives for faculty engagement, whether it be serving on local boards and commissions, serving as an advisor to the New Jersey Wildlife Action Plan, or representing Rutgers in the New Jersey Higher Education Partnership for Sustainability.

Too often, universities reflect a culture of disengagement and an ideology of objectivity. The sustainable university must confront the view that academia requires disengagement from the policy process; that advocacy is unbecoming for those who wear the mantle of science.

A few years ago Science magazine asked eminent scientists if advocacy diminishes their credibility. Stuart Pimm, an eminent ecologist involved in Everglades restoration, summed up the sentiments of many of the respondents by saying, "I have a moral responsibility as a citizen to make people aware of what the science means."

The significance of the Intergovernmental Panel on Climate Change's work and the Millennium Ecosystem Assessment is in *saying what the science means in ways relevant to policy makers*. The pitfall of the ideology of objectivity is the belief that it, alone, brings credibility and that, by itself, objective knowledge will bring change. This is wrong as proven by the lives of Aldo Leopold and Rachel Carson.

No one had more esteemed academic and scientific credentials than Aldo Leopold, the first professor of wildlife management in U.S. history, author of textbooks and many scientific articles. Yet, he was so much more than that. He wrote with grace, rigor and love of the natural world in *A Sand County Almanac*. Leopold was also a passionate activist. He helped found organizations like The Wilderness Society and the National Wildlife Federation. He spent many nights traveling Wisconsin's back roads to speak to garden clubs and rotary clubs ... to anyone who would listen ... of the world of wounds he saw as a result of his knowledge of the natural world. Rachel Carson provides another inspiring example of an eminent scientist who was willing to say what the science means in her book *Silent Spring*, helping launch the modern environmental movement.

So how will Rutgers' progress be measured in what it teaches its students about sustainable development? I understand that for many years Rutgers had a mandatory freshman seminar on "perspectives on agriculture and the environment," which was discontinued two years ago. Perhaps, a new seminar could be developed based on the IPCC's reports and the Millennium Ecosystem Assessment?

How It Is Taught: Sustainability Is Inherently Interdisciplinary

While what is taught is important, *how* it is taught is, perhaps, more important for sustainable development. The current model of the American university is built around disciplinary specialization

and an accompanying fragmented and highly autonomous institutional structure... to put it simply, around the three “D’s” of disciplines, deans and departments.

“As a consequence,” Arizona State University President Michael Crow has written, “academic departments tend to resemble one another across the nation, each more or less a pale reflection of some distinct ideal ... academic culture on the whole encourages each department of physics to compare itself to the departments at Caltech and MIT, each department of economics to compare itself to the University of Chicago, and each department of theatre to compare itself to Yale.”

This structure rewards specialization and compartmentalization among faculty and students. It teaches much about a little. As Wendell Berry points out in his book, *Life is a Miracle*, the biggest drawback to intellectual inquiry in America is its inherent reductionism. By reducing the scale of what we study to make it small enough to understand, we ignore most of everything. As Berry said, “an explanation is a bucket, not a well.” The most dangerous reductionism, warns Berry, is “thoughtlessness of consequences.”

Educating for sustainability is inherently interdisciplinary. As Wynn Calder and Richard Clugston of University Leaders for A Sustainable Future have observed, it means “learning how to solve several problems at once.” This is no small matter. The 1992 United Nations Conference on Environment and Development made this call to action:

Countries must support ‘cross-disciplinary courses’ for all students, ‘regional networks and activities and national university actions which promote research and common teaching approaches on sustainable development,’ and ‘new partnerships ... with business and other independent sectors.

Meeting the challenge of interdisciplinary learning means more than adding a few cross-departmental classes and more than creating an institute for sustainability. It involves a direct challenge to how universities are organized and the current incentives of the tenure system. Faculty must be rewarded with promotions and tenure for breaking out of their disciplines and for an integrated approach to sustainability. One measure of progress in this respect for Rutgers might be the number of faculty holding joint tenured appointments and the variety of course offerings that directly relate to global climate change and biodiversity loss.

Many universities have created “institutes” and “centers” related to sustainability. For example:

- Duke University created the Nicholas Institute for Environmental Policy Solutions lead by a senior staff member to Senator Joe Lieberman, co-author of the pending Lieberman-Warner bill that would cap U.S. emissions of global warming pollution;
- the University of Wisconsin-Madison created the Center for Sustainability and the Global Environment to examine the linkages between natural resources, human health and security, and changes in the global environment;

- Arizona State University has started a Global Institute for Sustainability and launched a new School of Sustainability, which will include “Professors of Practice” to bring experienced sustainability practitioners into academia;
- The most popular graduate course of study at the University of Michigan School of Natural Resources & Environment, where I serve on the Visitors Committee, is in the Center for Sustainable Systems.

These and similar efforts are important and should be celebrated. However, there is a risk with this approach. It can compartmentalize sustainability as yet another discipline or, worse, as a tangential enterprise unrelated to most disciplines.

There Are No Bystanders In The Quest For Sustainability

Finally, the quest for sustainability must be a shared responsibility for everyone at Rutgers. If it is viewed as only the responsibility of the Committee for Sustainability, it will surely fail.

This quest requires that students do what students have always done best – be activists on campus and in the community to insist that they learn what they need to know and that the university is a leader in the larger community in addressing the issues I’ve discussed this evening. I recall the student-led “teach-ins” that characterized the early days of the environmental movement. Like the early Earth Days, we need student-led “teach-ins” on global warming and on the degradation of natural systems. Last year’s “Power Shift” meeting of approximately 6,000 students in Maryland suggests this kind of student activism on global warming is on the rise.

Faculty must assure that all of their students are ecologically literate; they must reach out beyond their disciplines and get out of the comfort zone of their departments. They must get engaged in the community and in the policy process. They must lead by example in teaching their students how to say what the science means, by demonstrating the meaning of community service, and by showing how to become activists in the policy process and how to do so with civility and respect— and without sacrificing intellectual integrity.

Administrators must rethink the purpose of their university. They must remove the institutional barriers to achieving a sustainability mindset. They must reform tenure processes to reward interdisciplinary work and engagement in community service and in policy processes. They must work with alumni and those who hire Rutgers grads to assure that all students are prepared to join in the quest for sustainable development through their careers in business, government, public service, etc. And, administrators must be willing to fail and, through failing, to learn. They must be willing to get more “C”s on sustainability report cards and to persevere. In times of tight budgets, it’s natural for administrators to view the unconventional as superfluous, to take a “back to basics” approach, which often translates into “back to the boxes” of conventional categories. Tight budgets do not encourage risk taking, so we must encourage and support the courageous college presidents who take risks like signing the American College and University Presidents Climate Commitment.

Everyone in the Rutgers' community must join in the quest for sustainability if something so important is to succeed. And it is essential that Rutgers succeed.

Let me close with two views of the importance of this quest. In his Nobel Peace Prize acceptance speech, R. K. Pachauri, Chairman of the Intergovernmental Panel on Climate Change said:

At a fundamental level the world now has to create knowledge and practice on a path of development which is not resource degrading and carbon intensive. Human ingenuity and strength are capable of meeting this challenge. Dr. Gro Harlem Brundtland told us 20 years ago of the importance of sustainable development as the path to peace and prosperity. We need to commit ourselves to that path today before it is too late.

Closer to home, last October the Final Report of the New Jersey Energy Sustainability Report concluded:

Sacrificing the future to benefit the present is the opposite of sustainability. Failing to consider the long-term impacts of our decisions can result in unbreathable air, a floundering economy, decaying cities, choking traffic congestion, loss of wildlife and open space, and unsafe neighborhoods.

However, if we get serious about living with the future in mind, we have the possibility of passing on to our children a New Jersey that is secure and offers a high quality of life.

Seeing things differently is the first step toward doing things differently.

From all I've learned about her, Barbara Goff was one who saw things differently than most. She saw things as they might be and asked "why not?" I'm convinced her life was a quest for better communities, a more civil and just society, and an Earth that is healed. I'm grateful for the opportunity to honor her with these remarks tonight and to invite you to join her in the quest for sustainable development.

Thank you.

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