Second Nature

“EDUCATION FOR SUSTAINABILITY”

http://www.secondnature.org/efs/efs.htm

This section of the website provides a framework describing

- Second Nature's vision of a healthy, just and sustainable future
- The critical role of higher education in achieving that vision
- Our vision of higher education leading the way in educating for sustainability

Second Nature envisions a world in which all present and future humans are healthy, have their basic needs met, have fair and equitable access to Earth's resources, and have a decent quality of life. We imagine a sustainable world.

Part One: Envisioning a Sustainable Future

Second Nature imagines a society in which all present and future generations of humans:

- are healthy and can meet their basic needs;
- have fair and equitable access to Earth's resources;
- have a decent quality of life;
- celebrate cultural diversity;
- are realizing their highest aspirations;
- and restore and preserve the biologically diverse ecosystems on which we all depend.

How might society achieve this vision? We provide you with the following ideas that shape Second Nature's response to that question, and suggest that you simultaneously picture a sustainable society, and elements of your own vision.

We must align social, economic and natural systems for mutual benefit and sustainability.

Imagine that all people understand their connections to the natural world and to other humans, know where products and services come from and where wastes go, and know how to measure and minimize their ecological footprint. Our ecological footprint (our impact on the Earth) is invisible to most of us. We must make the invisible visible.

Imagine that we have stabilized the population at a level that is within the carrying capacity of the Earth's ecosystems because we have increased the education, as well as the social and economic status, of women. 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 through our "dreaming" and "doing," we have reduced resource consumption and waste in the developed world so that there is opportunity in the developing world to be healthy and have a decent quality of life. 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 stuff. Think what it could be like if globalization is humanized to support democracy, human rights and economic opportunity for everyone.

Imagine future scientists, engineers, and business people designing technology and economic activities that sustain, rather than degrade, the natural environment, that enhance human health and well-being, and that mimic and live within the limits of natural systems. Imagine a future where we design our technology inspired by biological models: we operate on renewable energy; we've eliminated the concept of "waste" because every waste product is a raw material or nutrient for another species or activity, or is returned to nature's cycles. Imagine that we are managing human activities in a way that increases biological diversity and complexity.

Imagine that we have timely and accurate economic and ecological signals: micro-economic signals for price that reflect the true social and environmental cost to society; macro-economic indicators that reflect the true well-being of society and the Earth; and ecological signals that we receive in time to prevent or remedy damage to humans or the environment.

To create this future, we will need a huge shift in thinking, values and action. To paraphrase Einstein, "The significant problems we face cannot be solved by the same level of thinking we used when we created them." We must reinvent the world socially, economically and environmentally. In effect, we must decouple social and economic progress from environmental deterioration — or as Bill McDonough says, "We must take the filters out of the pipes and put the filters in our minds."

Does this vision describe an unattainable utopia? No. It is possible because of the thousands of things that are being done, by progressive groups in civil society, philanthropy, universities, industries, governments and communities around the world today.

**Part Two: Higher Education's Role in the Transition to a Just and Sustainable Future**

Higher Education plays a profound and pivotal, but often overlooked, role in making this vision of a sustainable future a reality. It prepares most of the professionals who develop, lead, manage, teach, work in and influence society's institutions, including K-12 education. Besides training future teachers, higher education strongly influences the learning framework of K-12 education. Higher Education plays a critical role in creating and disseminating the knowledge, skills and values for society. It has unique academic freedom and the critical mass and diversity of skill to develop new ideas; to comment on society and its challenges; and to engage in bold experimentation in sustainable living.

In addition, higher education is a large economic engine. In 1999, there were approximately 4,100 higher education institutions in the United States, with a total of 14.6 million students; 2.3 million degrees were conferred. The annual operational budgets of those institutions are $200 billion—greater than the GDP of all but twenty countries in the world. Their endowment is over $230 billion.
What if Higher Education were to take a leadership role, as it did in the space race and the war on cancer, in preparing students and providing the information and knowledge to achieve a just and sustainable society? Imagine the societal impact that Higher Education could have if, as a sector, it incorporated sustainability principles and practices into fundamental decisions about purchasing, building design, and operations. Imagine the impact of Higher Education forming partnerships with local and regional communities to help make them socially vibrant, economically secure and environmentally sustainable. And imagine the long-term leverage if Higher Education faculty and students, working in conjunction with administrators and staff, conducted the research for and helped to implement sustainability programs on campus and surrounding communities. Graduating students could then bring knowledge, skills and values of sustainability to their future employment, consumption decisions, lifestyle choices, and to the improvement of communities in which they live.

Part Three: The Transformation of Higher Education

What would education for a sustainable future look like? The education of all professionals would reflect a new approach to learning and practice. The university would operate as a fully integrated community that models social and biological sustainability itself and in its interdependence with the local, regional and global community. In many cases, we think of teaching, research, operations and relations with local communities as separate activities; they are not. Because students learn from everything around them, everyone with whom they interact and everything they do, these activities form a linked and interdependent web of the students' learning experience.

Universities Modeling Sustainability as a Fully Integrated System

How would Higher Education realize this vision? Imagine if, in the twenty-first century, the educational experience of all students is aligned with the principles of sustainability.

The content of learning would embrace interdisciplinary systems thinking to address environmentally sustainable action on local, regional and global scales over short-, medium- and inter-generational time periods. Education would have the same "lateral rigor" across the disciplines as the "vertical rigor" within the disciplines. Compartmentalized knowledge without connection to larger system interactions results in viewing many interdependent challenges --
such as population, consumption, economics, health and the environment -- as separate and often competing. The net results are often narrow, ineffective solutions, or worse, more harmful to people and the environment in another place or another time. Systems thinking is essential to developing a shared framework for understanding and addressing complex nonlinear systems that are characteristic of society and the natural world.

The context of learning would change to make the human/environment interdependence and values and ethics a central part of teaching in all the disciplines, rather than isolated as a special course or module in programs for specialists. All students would understand that we are an integral part of nature. They would understand the ecological services that are critical for human existence and how to assess and minimize the ecological footprint of human activity. For example, to reflect human/environment interdependence, the teaching of all chemistry courses would include attendant dangers to human health and the environment of chemical processes and development of safe and sustainable processes that are also profitable.

The process of education would emphasize active, experiential and collaborative learning and real-world problem solving on the campus and in the larger community. For example, as part of the curriculum, the learning experience for students would include working on actual, real-world problems facing communities, government and industry. It would also increase group work and learning so students would be able to effectively collaborate as future managers and leaders on complex problems.

To take us one step closer to our ideal, higher education would "practice what it preaches" and make sustainability an integral part of operations, purchasing and investments, and tie these efforts to the formal curriculum. The university is a microcosm of the larger community and a large economic engine, as indicated in Part Two. Therefore, the manner in which it carries out its daily activities is an important demonstration of ways to achieve environmentally responsible living and to reinforce desired values and behaviors in the whole community. By focusing on itself, the university can engage students in understanding the "institutional metabolism" and "ecological footprint" of materials and activities. Students can learn how to minimize their ecological footprint and develop the critical thinking and collaborative work skills necessary for personal and societal fulfillment and success.

To take us to the next step, think of the impact of higher education forming partnerships with local and regional communities to help make them socially vibrant, economically secure and environmentally sustainable. When they graduate, the students would be able to bring their knowledge, skills and values of sustainability to their future employment, consumption decisions, lifestyle choices, and to the improvement of communities in which they live.