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## **Higher Education: Role in Sustainability**

*By Elizabeth Sgambelluri*

It is undeniable that we, as humans, have become disengaged from what is referred to as “first nature”. Our increasing dependence upon the technological developments of our time permitted the transformation of natural resources by the generation of products that in a sense hybridize nature. As the separation between human populations and first nature has gradually expanded over time, our awareness regarding ecological health and functioning have decreased as well. Institutions of higher education are equally accountable for humankind’s failed ecological comprehension.

Humans act as dominant forces in determining the health and well-being of the earth and of all its inhabitants. As a species, humankind is linked into a global network of interconnections between biotic components which comprise an ecosystem. Functioning as biotic constituents but coupled with our advanced technological power, we possess the aptitude to manipulate both current and future planetary habitability; not only for other species but for ours as well. Currently, our growth model is unsustainable. As Holmes Rolston III writes, “the resulting explosion of culture presses Earth’s natural systems to their carrying capacities”<sup>i</sup>.

There are two major factors that serve to cripple sane ecological perceptions. First, is the grossly large percentage of individuals who refuse to recognize the presence of a problem, and hence refuse to pursue any corrective action. In other words, human ignorance plays a large role in some areas of society. Second to blame, and of the most influence in this matter, is the indisputable reality that a vast majority of even educated individuals lack a basic knowledge of the existing problem.

Case studies have revealed that the majority of graduating college students obtains little education in vital ecological principles, if any at all. An even smaller percentage of these students gain an understanding of how modern human-designed economies might cooperate with natural systems in a harmonious relationship.<sup>ii</sup> What is needed is a major paradigm shift in our current values and perceptions. Albert Einstein has stated, “The significant problems we face cannot be solved at the same level of thinking we used when we created them”.<sup>iii</sup> Therefore, we must transform our current thought processes in order to achieve significant change. This means a shift in the disciplinary structure of our modern educational systems.

Educational programs across the United States, predominantly those in colleges and universities, have been identified as possible partners in the sustainability movement. Creating a healthy and environmentally sustainable educational system necessitates an integrated, systematic approach.<sup>iv</sup> Some progress and advancements in infrastructure design, or physical plant operations, have provided some support to various sustainability movements occurring on campuses. Yet, educational innovations and updated teaching practices relating to the concept of sustainability are sorely lacking. This is critical, since higher education is crucial to the success of this particular matter.

The concept of sustainability has typically coincided with the maintenance of ecological services within fragile ecosystems. However, the term has been broadened to include social and economic considerations, with an additional focus on how to guarantee a good quality of life for all, including future generations. Higher education can be viewed as an incubator. Out of our country's higher educational institutions are birthed individuals who will serve as future leaders and professionals influential to global societies. Not only do these institutions mold the individuals responsible for initiating future change, but because of academic freedom collegiate organizations offer unique opportunities for innovation and creativity. Diverse areas of expertise enable higher educational programs to function as unique sites for research and innovation into sustainable living through the promotion of new ideas and experimentations.

Institutions of higher education therefore contribute significant economic, social, and environmental footprints. Formulation of environmentally sustainable technologies and policies requires mutual interactions between social, economic, and environmental facets of life. Attaining common ground between these interactions is particularly complex, consequent to the fact that each "cross over disciplinary boundaries". This notion complicates the necessary

task of altering several structural aspects within traditional educational systems.

Higher education is generally organized into highly specialized areas of knowledge and traditional disciplines. Designing a sustainable human future requires a paradigm shift toward a systemic perspective of emphasizing collaboration and cooperation. Much of higher education stresses individual learning. Deeply embedded in current academic structures is the notion of individual learning. Developing interdisciplinary curricula and educational practices are made difficult by this embedded outlook. Consequently, professionals often fail to spot cooperative techniques that could permit coexistence between various disciplines.<sup>v</sup> Higher educational systems fragment learning capabilities, just at the time that our impacts are fragmenting ecosystems globally. Transformative change is critical in this sphere of academics, yet incentives pressuring such change are virtually nonexistent.<sup>vi</sup>

Societal movements often commence with an individual; a solitary person whose ideas and actions trigger change. Subsequent actions undertaken by other individuals begin to accumulate. When this accumulation of individual acts is connected with vital structural supports and various networking systems, a community constructed on collaboration and mutualism is established. However, herein lies the root of malfunction in modern academic education especially in regards to scientific education. The achievement of sustainability entails strategic thinking and requires individuals to congregate in collaborative groups. Resources providing the tools for such an achievement are also necessary. It is one thing to have an idea, but an initiative cannot be pursued without the aid of structural support including outside resources. Indeed there have been cases where a vague understanding of societal needs combined with inadequate support from outside resources crippled effective responses from institutions of higher education. Unreliable internal avenues offer change plus the lack of leadership in sustainable initiatives will render conservative efforts across campus systems incomplete. They

will fail to penetrate education, research, and communal outreach structures.

Holmes Rolston writes that institutions of higher education protect human values and allow individuals to flourish by teaching “humans the art of living well” as well as teaching them “the sciences by which we understand the world and benefit from it”<sup>vii</sup>. Knowledge obtained from these sources has secured the technological advancements that have dominated the 21<sup>st</sup> century. Yet many of these same advancements have contributed to the growing destabilization of our global ecosystems. The improper utilization of technology has led to the unsustainable consumption of natural resources. Proper management skills remain unidentified and untaught. Future professionals remain ill-prepared and therefore may unwittingly contribute to fates similar to those experienced by primordial cultures such as the Mayans and the inhabitants of Easter Island.

The change in mind-set necessary to achieve an alternative vision will require a sustained transformation of education at all levels. If current and future environmental services are to be sustainable for the long-term, activism will be required. Despite admirable individual efforts within local spectrums, a centralized educational commitment to attain and maintain a sustainable world does not exist. Politicians focus largely on policies concerning economic growth and the global market. The “cross boundary” characteristic of this realm further contributes as a stunt factor.

Imagine that all professionals, leaders, and students understood the intricacies of humans’ connection with the natural world and to other humans. What if all members of humankind clearly recognized and understood what happens to the waste material generated through our consumptive habitats, and knew how this affects all species of the planet including our own. How different would the world be if human populations collaborated in a cooperative effort to minimize our planetary ecological footprint? And to make Earth’s resources equitably accessible, promote cultural diversity and a high level of human flourishing.

The word conservation means to “keep safe”, whether it is the conservation of oneself or the conservation of an individual’s home. Environmental conservation refers to the protection of the earth-home (*oikos*) and all the delicate facets that it is built upon, such as natural resources. Natural resources include all things that help to maintain life, such as sunlight, air, plants, minerals, water, and animals. More than six billion people make their home on Earth today, and each person requires land to live on, food to eat, and fuel for power. As the human population expands, the need for these resources climbs. Our constant and growing appetite for necessary as well as superfluous goods challenge us to find a balance between what is needed and care for the environment. Higher education could create a model of sustainability that integrates all aspects of campus life into it. However, any number of factors – real or invented – limits the actual advances that higher education can make.

I, as an individual, observed this personally first hand here at Moravian College during my sophomore year. Collaborating with two other colleagues, we formulated the “Priscilla Payne Estate Plan;” a three-tiered educational adjustment that would have helped Moravian College obtain and maintain sustainability. Priscilla Payne Estate would serve as a stepping stone, whereby students would embark on the journey of becoming environmentally sound. The plan provided at least five main routes whereby this could be facilitated. When we tried to present this project to Moravian’s leading personnel, we were immediately turned away and all of our suggestions were basically ignored. We could only surmise that this was largely the result of narrow perceptions consequent to rigid educational structure.

Our role in higher education should be that of activists, leaders, and stewards of the earth. The positive effects of many individual actions will accumulate over time, and when there is strong support from appropriate structures, communal perceptions can be transformed and actions initiated. There are certainly examples of

sustainable transformations within collegiate institutions. One such example is at the University of Wisconsin-Madison where the sale of surplus property and redistribution of used property saves on the purchase of new products as well as minimizes waste production. Another example of sustainable advancement is the wind power referendum at the University of Colorado-Boulder.<sup>viii</sup> Although these are steps in the right direction, such examples pertain primarily to infrastructural changes.

And so I conclude with this question: what are the necessary changes that institutions of higher education must make at this critical moment in history? First, a basic knowledge of ecology and of the concept and practice of sustainability must be made available across disciplinary boundaries. Interdisciplinary cooperation should be the common practice not the exception. Second, the power for desperately needed change contained in the knowledge held within the academic walls must be shared with local communities

through both educational outreach and cooperative programs with other types of civic and business organizations. In some instances, members of communities have been barred from gaining access to knowledge of sustainable practices (or the lack thereof) found within institutions of higher education. Cooperation can build the necessary structural supports that will be of benefit socially, economically and environmentally. Without a wider and deeper dispersal of important knowledge within and outside of academe and without both internal reform of unsustainable practices and cooperation with local and regional institutions and organizations working for change, the necessary shift away from the endless-growth model of modern society cannot occur. Future generations will have to bear the awful burden of a dying planet and a human society finding its own healthy long-term survival unsustainable.

### ENDNOTES

- i. Rolston, Holmes, III. "Ethics on the Home Planet," in *An Invitation to Environmental Philosophy*. Ed. Anthony Weston. (Oxford U. Press, 1998), 135.
- ii. Elder, James L., and Jean MacGregor. "The Sustainability Movement in Higher Education: An Overview." *Mobilizing STEM Education for a Sustainable Future*. Web. 2012.<<http://mobilizingstem.wceruw.org/documents/The%20Sustainability%20Movement%20and%20Appendices.pdf>>.
- iii. "The University Modeling Sustainability as an Institution." *Second Nature: Education for Sustainability*. *Second Nature.org*. Web. 2012. <<http://www.secondnature.org/pdf/snwritings/articles/univmodel.pdf>>.
- iv. "The University Modeling Sustainability as an Institution." Ibid.
- v. Elder, James L., and Jean MacGregor. Ibid.
- vi. Rolston, Holmes, III. "Ethics on the Home Planet." Ibid., 136-7.
- vii. Rolston, Holmes, III. "Ethics on the Home Planet." Ibid., 136.
- viii. "The University Modeling Sustainability as an Institution." Ibid

## Who am I?

Currently a senior Environmental Science major, I have actively participated in numerous conservation programs incorporating educational programs as well as community involvement. In high school I facilitated the *1000 Trees* project, which aided in the restoration of over 1000 native tree species throughout the Nockamixon region of Upper Bucks County that I call home. Additionally, I have conducted research in parts of Africa and South America regarding species conservation. This particular paper was assigned this past fall in Dr. Falla's Environmental Philosophy class. Under his leadership, I was able to reflect on humankind's role in sustainability and public education.

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