

**Research Seed Funding Application:
Exploring cross-disciplinary sustainability pedagogy at RIT to assess
potential for a future campus research network**

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How could RIT be a forerunner in multidisciplinary sustainability education?

As the location of the New York State Pollution Prevention Institute's (NYSP2I) headquarters, RIT is in a unique position to play an active role in their commitment "to making the State a leader in environmental stewardship." Although RIT houses NYSP2I and an entire college devoted to sustainability, most RIT undergraduates seem to lack basic sustainability knowledge and awareness of campus sustainability initiatives. Students need multiple touch-points with sustainability and sustainable development concepts, both as participants and as problem-solvers, in order to be conversant in this complex and urgent topic.

This project investigates how applying sustainable thinking across the university could positively impact undergraduates' learning experiences through preliminary collection and synthesis of existing course information. It will also explore the feasibility of designing a resource for RIT faculty and students, with the goals of promoting sustainable topics within course curricula across the university, and expanding multidisciplinary collaborative opportunities.

Objectives

Initial Exploration Phase (proposed for seed funding):

- Research models of integrating sustainability into the curriculum outside of RIT to evaluate the outcomes of teaching sustainability across university curricula
- Locate and interview faculty who already incorporate sustainability into their classes; discuss student progress and feedback; assess their interest in this potential resource
- Create a list of these courses at RIT (outside of the Golisano Institute of Sustainability) and collect relevant syllabi, assignments and project briefs (for later case study compendium)
- Evaluate course design, accounts of student progress, and feedback to determine effective and transferable pedagogic approaches
- Explore communication strategies for sharing these approaches across RIT
- Partner with like-minded faculty to identify and apply for sources of external funding in order to implement the proposed sustainable pedagogy network

Later Implementation Phase (for external funding):

- Survey RIT students who have participated in such courses to determine perceived benefits from course structure and content; compare findings to faculty input from exploration
- Interview additional faculty and students for more feedback on course objectives and outcomes vis-à-vis the integration of sustainability topic or content
- Create a compendium of case studies pertaining to teaching sustainability
- Engage in a generative, co-design process to plan, develop, test, refine, and launch an online resource ("sustainability pedagogy network") and collaboration hub for faculty and students
- Promote the resource, encouraging faculty to use the case studies and course materials and contribute additional materials as courses evolve or as new courses are established.

Significance

Existing Faculty Interest

Some RIT faculty are already finding ways to integrate sustainable concepts into their courses in Public Policy, History, Communication, and Graphic Design, indicating interest

among both faculty and students. When faculty members with this common interest happen to find each other, there is great potential for collaboration and innovation. However, there is no organized system to learn who is already teaching about sustainability, or their teaching methods.

A Need for Increased Campus Sustainability Knowledge

The aforementioned courses can only enroll a limited number of students each term; it is therefore likely that only a small percentage of RIT undergraduates have classroom exposure to sustainability content. In Fall 2013, the PI's senior-level design students conducted 70 in-person interviews with RIT students, faculty and staff, and learned that most of the campus community is unaware of or disconnected from the university's sustainability achievements, initiatives, and goals.

Based on these initial observations, the hypothesis is that the campus community would benefit from a robust and formalized online resource to connect ideas, assets, and people around this topic. By investigating existing classes and course materials, this project will collect the initial information needed to lay foundation for the broader goal of a proposed "sustainable pedagogy network" as the second phase of this project.

Benefits for RIT— and beyond

Incorporating sustainability into projects exposes students to the possibility of creating services and systems that have positive impacts on the world. The topic encourages students to explore complexity, hone collaboration and critical thinking skills, delve into its multifaceted and multidisciplinary nature, and solve real problems. Learning about sustainability can enhance students' marketability: in a 2011 report by the independent firm Hanover Research, "Embedding Sustainability into University Curricula," key findings include that, "according to the U.S. Bureau of Labor Statistics, Employer need for graduates educated in concentrations related to sustainability is expected to increase at least 20 percent between 2008 and 2018." Additionally, "A United Kingdom survey found that over half of employers will be looking in the future to employ recent graduates that are socially and environmentally responsible."

With their increased awareness, students and faculty would be more capable of engaging in and supporting RIT's sustainability initiatives. The future sustainability network would not only benefit RIT's faculty, students and physical campus, but could also solidify RIT's position as a leader in sustainable pedagogy. The network could expand to include state and regional resources, such as New York State Energy Research and Development Authority (NYSERDA) and the New York State Pollution Prevention Institute (NYSP2I). Beyond RIT, it could create opportunities for relationships, research, and innovation within the larger academic community, enabling RIT to benefit from other universities' experiences and knowledge around sustainability. There is also potential to leverage the network to bridge academia and industry, matching sustainable businesses with classrooms to put students' research, ideas and solutions to practical use toward solutions that benefit society.

External Funding Potential

As a combined scientific, technical and creative effort, the proposed network could be eligible for external funding from various sources. NYSERDA offers many grants related to sustainability every year, some specifically related to education. The National Science Foundation is also scheduled to post guidelines for a new Sustainability Research Networks Competition in 2014, and the proposed network could be a strong candidate. The National Endowment For the Arts' Design Grant is another potential funding source.

Previous work in the field

As a user experience (UX) designer, the PI believes her profession has a responsibility to society to critically examine existing social norms and behaviors and find ways to cultivate new approaches. Her graduate research focused on virtual and physical learning communities and how the design of communications systems could positively affect on behaviors, interactions and engagement within a physical, “face-to-face” community. In industry, she has also worked on developing strategies and communications for sustainable businesses and organizations as well as the structure, planning, and design of virtual learning environments. This project would enable continuation of the PI’s thought leadership in the area of design for social good, extend her interests and expertise to benefit the RIT community, and continue to enhance her professional skills as a UX designer. The PI is already co-authoring journal submissions and conference proposals on this topic with another RIT faculty member. This project would magnify the benefits they have already seen from introducing sustainability into their own classes, and could gain traction at RIT, other campuses, the research community, and industry.

Methodology and Project Plan

This exploratory phase will define benefits and challenges of teaching sustainability across multiple disciplines through a comprehensive literature review on the topic and examination of other institutions’ integration of sustainability across curricula. The PI will interview RIT faculty who already teach about sustainability (at least three, or 50% of the known available faculty, whichever is greater, outside of the Golisano Institute), assess their interest in the proposed network, build a list of their courses, and collect relevant syllabi and assignments to begin developing the compendium of case studies that will be housed in the proposed sustainability pedagogy network. A comparative evaluation of collected course materials and faculty interviews regarding students’ progress and feedback will aim to identify effective and transferable strategies for teaching sustainability, as well as effective means for later sharing these resources with the RIT community. The university’s Senior Sustainability Advisor, Enid Cardinal, has agreed to verify the accuracy of sustainability content within collected course materials.

Following its completion, the PI will synthesize and disseminate key findings by submitting abstracts to conferences such as The California Higher Education Sustainability Conference and the Smart and Sustainable Campuses Conference, and to journals such as *The International Journal of Scholarship of Teaching and Learning* and *Environmental Communication*. The PI will identify like-minded faculty partners and collectively seek additional funding to create the proposed virtual sustainability pedagogy network.

The PI will conduct the proposed exploratory research from August 2014–May 2015:

ACTIVITY	DATE
Complete detailed project plan	May–Aug 2014
Conduct literature review of existing sustainability pedagogy	Aug 2014
Participate in faculty poster session	Fall 2014
Identify and interview faculty participants	Sept 2014–May 2015
Collect, organize and analyze course materials	Sept 2014–May 2015
Submit findings to Senior Sustainability Advisor for review	May 2015
Submit papers to applicable journals and conferences	Mar–May 2015
Submit final report	May 2015

Budget

ITEM	REQUESTED AMOUNT	EXPLANATION
Senior Personnel	\$3,413.00	Half-month summer salary
Benefits	\$290.00	Summer salary fringe factor
Travel	\$1633.00	Travel to present at Smart and Sustainable Campuses Conference: Airfare (\$368), 4 nights hotel (\$600), 4 days food at \$44/day (\$176), conference registration fee (\$489);
Subtotal	\$5537.50	
<i>Less other funds</i>	<i>-\$550.00</i>	<i>From CIAS travel budget</i>
TOTAL REQUESTED	\$4987.50	

Previous funding

No previous funding has been received for this project.

References

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