

## 2011-2012 Grant Proposals

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Bronwyn Bleakley  
SENCER Summer Institute  
Pedagogy Travel Grant

### *Project Proposal:*

Full-circle: Developing active learning and community-based learning approaches for introductory and senior capstone biology courses

### *Project Description:*

I am applying for funds to attend the Summer Institute for Science Education for New Civic Engagements and Responsibilities (SENCER), as the newest member of the Stonehill team of educators. SENCER summer institutes bring together diverse groups, including science educators, administrators, students and members of the community. Participants work together to form plans to integrate learning in STEM fields with experiences that inform broader civic issues directly influenced by these disciplines. For example, Stonehill's previous participation in SENCER Institutes focused on programs within the Chemistry department and contributed to the development of theme-based general chemistry courses that were shared with Massasoit College.

My courses, currently Introductory Biology and the upper-division, typically capstone, Evolution course, are both loosely organized around themes such as science ethics, sustainability/conservation and human health. While my courses currently focus on demonstrating how these themes influence the everyday lives of my students and encourage them to think about their actions, the courses do not yet have the appropriate content to facilitate students discovering the connections between disciplines on their own. Nor do my courses yet have sufficiently deep curriculum to support active, in addition to academic, engagement with civic responsibility. I hope that my participation in SENCER will help me develop deeper curricula, including active learning exercises that require the students to wrestle with current issues in biological research and investigate directly how the resolution of those questions will influence their own lives and the broader world.

The natural extension of civic engagement within the classroom is civic engagement in the broader community. The Stonehill SENCER team has proposed focusing on the development of science outreach initiatives that would continue to partner with and benefit Massasoit Community College. Although I have previous experience with a variety of science outreach programs, I have never designed such a program myself and my newness to Stonehill and this community make it difficult for me to serve in any type of leadership capacity for such an initiative here. Participation in SENCER will help me form broader cross-departmental ties within Stonehill, as well as with faculty at Massasoit, to support the development of science outreach programs that benefit both institutions. The SENCER workshops specifically provide mentorship for such initiatives and the team building exercises and planning time will provide invaluable resources for our team to develop our specific plan and begin the planning for implementing the program.

### *Time Line:*

- SENCER Institute July 21-25, 2011
- Fall 2011 - Revise Evolution curricula to include more direct applications of civic engagement; collect data on student engagement
- Spring 2012 - Revise Biological Principles II curricula to include a community-based learning component to the laboratory curriculum; collect data on student engagement and learning gains associated with new activities

- Academic year 2011/2012 - work with the Stonehill/Massasoit SENCER team to develop a community-based learning plan linking Stonehill Biology with Massasoit biology programs

*Benefits:*

Students who more fully understand the relevance of the material are more engaged and will learn more. In addition, students who can apply what they learn outside of the classroom are better prepared to leave Stonehill and take on leadership and professional roles within their communities. The SENCER team specifically plans to conduct pre- and post- surveys to determine if/how students are able to make appropriate connections between the course material and current world issues. Second, the Biology department has begun formal discussions, expected to take place throughout the summer, to assess and revise the overall departmental curriculum. I believe I will return from SENCER better able to contribute meaningfully to these discussions. Last, I strive in all my courses to continually improve content and delivery, with special emphasis on making the material relevant and supporting critical thinking. I believe that participation in SENCER will help me develop further as a teacher, which in turn supports the further development of my students.

*Community Outreach Plans:*

My classes routinely publicly disseminate their projects. For example, Evolution students hold a poster symposium at the end of the semester. Students involved in these courses will continue to be required to communicate in an open forum what they learn from any outreach or community-based learning initiatives. If the learning gains are substantial enough in either course, I would write up the results for a journal such as Evolution: Education and Outreach.

*Budget:*

Registration Fee for Institute: \$500  
Housing (shared dorm room @\$35/night): \$175  
Partial travel costs to Indianapolis: \$75  
Total: \$750