

Interim Report
Reform of Introductory Science Courses for Non-Majors
Spring 2006 Mini-Grants

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Institution: University of Richmond

Title of Project: Development of a Nonmajors Biotechnology Course at the University of Richmond

Dates of Project: May-December 2006

Amount Awarded: \$6750

- 1) Original goals and objectives: The objective of the proposal is to develop a non-majors biotechnology course with laboratory at the University of Richmond. The grant award provides funds for a undergraduate assistant and I to identify, test, and develop laboratory modules, create course materials, and explore connections with the local biotechnology industry, the Pew Initiative on Food and Biotechnology, and the UR Career Development Center.
- 2) Changes to goals/objectives: There have been no changes to the goals and objectives of the proposal. Although the project is still underway, I do not foresee any major changes to the proposal.
- 3) Activities underway and/or completed to date:
 - Lab content: University of Richmond student Richard Thompson worked in my lab from May 23, 2006-July 17, 2006. He did background research to find relevant lab exercises and then try each experiment in the lab. As expected, some were easier than others, and had different success levels. Some of the experiments that work include making yogurt and kimchi, growing Wisconsin Fast Plants, transforming green fluorescent protein into *E. coli*, isolating coliform bacteria from water sources on the UR campus, making queso blanco cheese, DNA fingerprinting of different strains of *E. coli*, and growing insect-resistant transgenic corn plants. Some experiments were less successful, such as isolating green fluorescent protein from bacteria, the *Terror from Paradise* interactive forensic kit obtained from Ward's Natural Science, and making mozzarella cheese. A laboratory exercise using Wisconsin Fast Plants for bioremediation shows promising results, but is still under development.
 - Textbook selection: I have reviewed *Understanding Biotechnology*, by Borem, Martin, and Santos (2003, Prentice Hall). It is a good introductory text, but I am concerned that it may become outdated before I teach the course in fall 2008. I will revisit this textbook selection in the future; selecting a different book will require no additional input of ACS resources.

- Travel: As outlined in the proposal, I plan to develop contacts in the local biotechnology industry, the Pew Initiative on Food and Biotechnology, and the University of Richmond Career Development Center; these efforts are underway.
- 4) Snags/unanticipated delays: The project is going well. I wish to explore the plant bioremediation lab in more detail, but the resources required for that lab will be procured before the end of the grant.
- 5) Approved budget:
- Labor: \$5000
 - Supplies: \$1500
 - Travel: \$250
- 6) Financial accounting of funds through October 15, 2006:
- Labor: Funds expended-\$3171.96. Available balance: \$1828.04.
 - Supplies: Funds expended-\$347.52. Available balance: \$1152.48.
 - Travel: Funds expended-\$0. Available balance: \$250.