NIH Award from the National Institute of General Medical Sciences

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- **Project**: Biotechnology Predoctoral Training Program
- **Start Date**: August 3, 2009
- **Total Award Amount**: $93,930

**How the results of this project will benefit society:**
This proposal requests renewal funding for the Predoctoral Biotechnology Training Program at Northwestern University. This interdisciplinary and interdepartmental Program offers biotechnology training opportunities for a select group of PhD students from five participating units: biological and chemical engineering (ChBE), biomedical engineering (BME), material sciences and engineering (MSE), chemistry (Chem), and the interdepartmental biological sciences (IBiS) graduate program. Intensive efforts are made to recruit student from underrepresented groups, and have been quite successful with 30 percent of trainees during the past four years from underrepresented groups.

**The problem the project is trying to solve:**
The need for the training program is grounded on the concept of preparing and enabling talented students to capitalize on the interdisciplinary research opportunities available at Northwestern University. Northwestern University has an outstanding record of collaborative research; however, students funded from specific research grants are often constrained by the objectives of the grant. Support from the Biotechnology Training Grant removes this constraint and enables students to pursue innovative approaches or to make innovative connections for their research. Preparing and enabling students for this interdisciplinary research enriches their research; however, their productivity also enriches the university environment. These interdisciplinary connections are possible for any graduate student at NU; however, this preparation and training significantly enhances the likelihood that the student will look beyond the original objectives of a grant proposal.

Trainees have been selected from chemistry, BME, ChBE, and IBiS, and we propose to add material sciences and engineering (MSE) for the renewal due to their efforts in biotechnology research and strength of the faculty and the graduate student pool. The number of preceptors participating in the program will increase from 31 to 42. An increase from six to eight funded positions is requested to support this expanded preceptor base and available student pool.

**How this project will work:**
Research opportunities, chosen from among a selection of laboratories in the life sciences, are complemented by a core interdisciplinary curriculum. Three- to six-month industrial internships expose trainees to the industrial environment of modern biotechnology. All trainees and many preceptors participate in the IBiS, two-day, off-campus annual retreat, which allows extensive interactions among students and faculty from many disciplines and increases the cohesiveness of the trainee group. The Biotechnology Research in Progress Meetings occur monthly and are the forum where trainees and faculty present and discuss their research results and interact with other trainees. Trainees organize and host a Biotechnology Seminar Series that bring industrial and academic scientists to campus for discussions with trainees. Students also take advantage of several other life sciences-related seminar programs on campus. Instruction in the responsible conduct of research is carried out primarily through the course, “Ethics in Biological Research.”

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