

APPENDIX

Many innovative and important TUES and RCN-UBE projects have been recently funded. This abbreviated listing of recent awards in the program provides some examples to the community of what is currently being done under the auspices of the two funding programs described, with the aim of encouraging applications. The award numbers allow one to search for these projects online. <http://nsf.gov/awardsearch/>

1140475 *TUES: Toads, Roads, and Nodes: Collaborative Course-Based Research on the Landscape Ecology of Amphibian Populations*, David M. Marsh, Washington and Lee University, \$112,714: This project links networks of undergraduate ecology and conservation biology courses to study the factors that promote the persistence of amphibian populations at landscape and regional scales. Using existing data from the North American Amphibian Monitoring Program (NAAMP) and satellite imagery from Google Earth, students relate the presence/absence of amphibian species in their own state or region to landscape features such as forest cover, road density, and urbanization.

1140640 *TUES: San Diego Biodiversity Project: Integrating Authentic Research and Collaboration into the Biology Curriculum*, Heather J. Henter, University of California-San Diego, \$160,000: The San Diego Biodiversity Project integrates authentic research into the biology curriculum. Students identify species in the Scripps Coastal Reserve using molecular techniques, such as DNA sequencing and bioinformatics.

1139893 *TUES: Using Metagenomics to Realize an Education Partnership and Stimulate Curriculum Development*, Christopher R. Smith, Earlham College, \$168,739: The primary goal of this project is to increase in-class research using data on the soil bacterial communities present in corn and soy agroecosystems. This data is used to develop a course in bioinformatics, and to develop modules for various courses that span the biology undergraduate curriculum.

1061893 *RCN-UBE Incubator: Transforming Undergraduate Education through Increased Faculty Access to NextGen Sequencing Runs*, Michael Boyle, Juniata College, \$49,449: This project creates a regional network of faculty from small colleges to work toward the development of teaching approaches that incorporate unanalyzed, investigator-requested DNA sequencing into research and undergraduate teaching activities. The goal is to form a community of biologists from distinct areas (molecular, environmental, plant, microbial, etc.) who can develop parallel research studies in the scholarship of teaching and learning and in their areas of scientific research.

1248108 *RCN-UBE Incubator: Animated Discussions: Biologists and Visual Artists Foster Learning through Animations*, Susan L. Keen, University of California-Davis, \$41,189: The theme of this network is animation as a teaching tool in biology. The quality of interaction in the incubator meeting will inform participants as to whether a network can feasibly be formed. Biological animations are used as a learning tool to model sub-cellular processes, create photo-realistic depictions of events, and simulate conditions where users can vary parameters to compare outcomes. Animations can convey information, allow users to visualize processes they could not otherwise see, or challenge users to explain what they see.

0840911 RCN-UBE: *Preparing to Prepare the 21st Century Biology Student: Using Scientific Societies as Change Agents for the Introductory Biology Experience*, Gordon E. Uno, University of Oklahoma Norman Campus, \$420,228: This project (PTP) uses networking meetings to mobilize leading faculty in undergraduate biology education and to help other faculty in reforming their basic biology courses. It will outline a model of introductory biology experiences, articulate a shared vision of biology education, and build a permanent network that connects individuals. The meetings focus on collaborations with scientific societies as change agents.

0840946 RCN-UBE: *Open Science: An Education Network in Ethnobiology to Coordinate the Development of a New Culture in the Undergraduate Science Classroom*, Patricia D. Harrison, Botanical Research Institute of Texas, \$330,925: This project formed an interdisciplinary network to approach undergraduate biology education through the use of emergent web-based technologies and to facilitate continual exchange of educational techniques, materials, and experiences across institutional and international borders. The focus of this project is to develop curriculum models that engage educators and students in scientific inquiry through ethnobiology.