

UNH Outreach Scholars Academy Projects 2007-2008

What follows are project summaries for the 2007 -2008 Outreach Scholars Academy.

<i>Name</i>	<i>Department</i>	<i>Rank</i>	<i>College/School</i>
Serita Frey	Department of Natural Resources	Associate Professor	COLSA

Environmental Sciences Teacher Training Program in Central America - The long-term goal of Serita's project is to develop a teacher training program in environmental sciences for upper elementary and/or middle school teachers in Central America. Specific project goals are to 1) provide instruction on environmental sciences, with an emphasis on soil and water quality, 2) provide training on hypothesis testing, experimental design, and sample collection and analysis, and 3) assist teachers with implementing environmental science in their classrooms. Serita has received project funding and will spend three months of her sabbatical during the 2008-2009 academic year conducting a needs assessment in Costa Rica and Guatemala. Once the needs assessment has been completed, Serita plans to use these data to seek external grant funding to initiate and implement the program over the next few years. She anticipates that when fully implemented this program will increase the science education opportunities for K-12 teachers and students in Central America.

<i>Name</i>	<i>Department</i>	<i>Rank</i>	<i>College/School</i>
Sarah Kenick	Division of Science and Technology	Assistant Professor	UNH-Manchester

Reaching Green through Service Learning - The Greater Manchester community is in need of both formal and informal educational opportunities in the area of sustainability. The goals of Sarah's project are to provide area high school educators and their students with greener laboratory activities and training in the principles and practice of green chemistry. Another important goal is to educate UNH students on these practices, and to give them hands on, investigative research opportunities to attempt to green these activities on their own in the laboratory. This opportunity for original, immediately useful research is hoped to have a positive impact on students in this course and encourage those students to seek out future research opportunities. This project is the beginning of a new area of inquiry for Sarah - the impact of green chemistry practice and knowledge on student learning and motivation in chemistry. An application for a Math and Science Partnership (MSP) grant offered by the New Hampshire Department of Education will soon be underway. The larger goal will be to create a green chemistry educator network in the state of New Hampshire. Highlights of that project goal would be to have small groups of NH high school and middle school science teachers come to UNHM to learn about the practice of green chemistry.

<i>Name</i>	<i>Department</i>	<i>Rank</i>	<i>College/School</i>
J. Ruairidh (Ru) Morrison	Ocean Process Analysis Lab	Research Assistant Professor	EOS

Inside-Out – GeoAdventures from Science Centers to Watersheds - Together with the Seacoast Science Center, Rye NH, and regional partners, Ru’s project team is working to build networks of Informal Science Education (ISE) Centers and UNH Researchers. The goal is to increase public understanding and stewardship of natural resources in coastal watersheds by expanding the work of the SSC and UNH. Self-guided family-focused *GeoAdventures* guidebooks will lead individuals and families to key watershed features. Interactive web-based planning and reporting activities will foster family learning. The efforts will be guided by an advisory group of core UNH faculty involved in all aspects of watershed research as well as specialized faculty as needed. In years 3 and 4 the team will transfer *GeoAdventures* to two other regions nationally forming a national network in year 5. The collaborations established will be mutually beneficial whereby science center content will be enriched and enabled by knowledge produced by university research. The work will advance and is aligned with the UNH Academic Strategic Plan goal of Engagement and Outreach.

<i>Name</i>	<i>Department</i>	<i>Rank</i>	<i>College/School</i>
Neil Niman	Department of Economics	Associate Professor	WSBE

The Redevelopment of the Mill Plaza - The goal of Neil’s project is to see the successful redevelopment of the Mill Plaza in a way that benefits the citizens of Durham, New Hampshire beyond the projected tax benefits that a more intensive use of the land will create. The fundamental research question is whether or not the creation of a new anchor for the downtown will be sufficient to initiate a broader redevelopment effort that will encompass the entire downtown. Neil will be intensely involved in the conceptualization of a plan, the calculation of the public and private benefits associated with the redevelopment, and the creation of the requisite financing plan that will be required in order to bring the project to fruition.

<i>Name</i>	<i>Department</i>	<i>Rank</i>	<i>College/School</i>
Julia Peterson	Water Quality/NH Sea Grant	Extension Associate Professor/Specialist	UNH Cooperative Extension

Changing Homeowner’s Lawn Care Behavior to Reduce Nutrient Inputs in Urbanizing Watersheds – Julia’s project is an integrated, interdisciplinary, multi-state project that is applying environmental and behavioral research results to Extension efforts to reduce the application of excess nutrients on turf by homeowners (do-it-yourselfers, or DIYs) in targeted, urbanizing neighborhoods throughout New England with the ultimate goal of protecting surface and groundwater quality. The goal is to reduce nutrient runoff from residential properties in urbanizing watersheds and the expected impact will be to increase neighborhood residents’ knowledge about environmentally friendly lawn care practices, and their willingness to adopt a few of those practices. The project involves several primary components: environmental research, social science research, Extension educational objectives. The outreach evaluation component will lend itself to scholarly opportunities as Julia’s team addresses the question, “Was our outreach effective at changing the knowledge and attitudes of opinion leaders and DIYers?” with a particular interest in whether or not the outreach design benefited from the social science foundation.

<i>Name</i>	<i>Department</i>	<i>Rank</i>	<i>College/School</i>
Mihaela Sabin	Division of Science and Technology	Assistant Professor	UNH Manchester

Building a Student Scholarship Program in the STEM Disciplines at UNH Manchester - The Division of Science and Technology at UNH Manchester is interested in applying for a NSF grant that supports a scholarship program for students pursuing bachelor's degrees in science, technology, engineering, and mathematics (STEM) disciplines. Faculty in the Biology, Computer Information Systems, Engineering Technology, and Mathematics programs will work closely with the UNH Manchester admissions, financial aid, and student services offices to establish a partnership with other local stakeholders in STEM education. The project's target audience is high school juniors and seniors and STEM majors in two-year community colleges in the Greater Manchester area. Mihaela's team envisions establishing a partnership that bridges two important New Hampshire programs: the New Hampshire Scholars and the 55% Initiative. The NH Scholars program is a collaborative effort involving area business and school volunteers who encourage and motivate high school students to complete a more rigorous academic course of study. The 55% Initiative, launched by the University System of New Hampshire in January 2007, calls for promoting New Hampshire to future college graduates. This project's intent is to build a STEM student scholarship program which will leverage the incentives the NH Scholars program presents to high school students. The 55% Initiative will promote Mihaela's program to the partnering local organizations and facilitate participation in the student support structures the program will offer. In this effort, the team shares the goal of graduating well educated and skilled candidates for employment in science and technology areas in the state of New Hampshire. The expected outcome of this project is the awarding of the NSF S-STEM grant for four scholarship years and an initial one-year planning period.

<i>Name</i>	<i>Department</i>	<i>Rank</i>	<i>College/School</i>
Annette Schloss	Complex Systems Research Center	Research Scientist	EOS

Building a PicturePost Network to take Citizen Science to a New Level – Annette is currently participating in a NASA-funded education project, *Measuring Vegetation Health*, a collaboration of seven institutions led by the Museum of Science in Boston. The PicturePost system was developed as part of that project, which is ending in 2009. PicturePost enables the taking of photographs repeatedly from the same location and sharing them over the Internet. The concept has generated a lot of enthusiasm among citizen groups, schools, researchers and informal science centers. PicturePost can provide a wealth of information and data to monitor changing environmental conditions, which is critical for a society grappling with the effects of climate change. Annette's project will build on the PicturePost concept by pilot-testing a post at the Seacoast Science Center in Rye, NH. Lessons learned from the pilot will inform the growth and development of a national, or possibly global, PicturePost Network. She envisions that the Network will take citizen science to a new level. It will empower citizens to observe and understand changes in their local environment and offer them a social network over the Internet that fosters the communication and knowledge that leads to action. The work Annette is proposing connects to the outreach mission of UNH by bringing together scientists and informal educators in a joint effort to increase scientific literacy in the public and serves the greater good by engaging

citizens in an accessible and interesting science-based activity that serves important Earth system science research and connects them to a larger community through the Internet.

<i>Name</i>	<i>Department</i>	<i>Rank</i>	<i>College/School</i>
Malcolm Smith	Family Life and Family Policy and Department of Family Studies	Extension Associate Professor/Specialist	UNH Cooperative Extension/CHHS

The Family Education Collaborative – Manchester, New Hampshire is a complex, rapidly changing landscape for families and presents unique challenges to parents and caregivers who desire to raise healthy and productive children. Malcolm and his team have created The Family Education Collaborative, which has set the following goals and objectives, through the YWCA and Cooperative Extension: 1) to establish a model, working family resource center that provides evidence-based education and training to New Hampshire families, 2) to develop and disseminate statewide, through the network of Family Support New Hampshire, effective evidence-based parent education programs that are distinctly tailored to New Hampshire communities, 3) to provide a laboratory to engage scholars and students in effective research of changing family ecology, and to develop effective primary prevention programs for families facing an uncertain future, and 4) to build the capacity of family support and resource programs statewide to serve New Hampshire families by establishing standards and criterion for parent educators and creating a training program to assist those educators in obtaining competency in their craft. The Collaborative has already assisted the YWCA in the procurement of a \$25,000 grant to further the work of the project. In addition, it is expected that within the second year of operation the Collaborative will establish minimum competencies for Parent Educators in New Hampshire and will begin a researched based education program to train the over 200 current educators at 22 family resource centers.

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Rick Alleva	4-H Youth Development	Extension Educator	UNH Cooperative Extension

Seacoast Youth Services: Building & Sustaining a Positive Youth Development Center - UNH Cooperative Extension (UNHCE) partnered with Seacoast Youth Services (SYS), a non-profit community organization in the town of Seabrook, to establish and support a positive youth development center in the lower seacoast area of New Hampshire. A mutual beneficial relationship between UNHCE and SYS has included the provision of quality youth programs, diverse youth and family involvement, hands-on internship placements, federal and local grant support, national conference participation, workshop presentations, and a growing community-based coalition with UNH as a primary partner with local community agencies. Since the project's initiation in 2003, Rick's role has involved a diversity of tasks, including program design/logic model development, best practice demonstration programming, staff training and supervision, mobilization of and connection with UNH and other resources, local/national grant development, program evaluation/reporting, and other technical assistance. Rick is now focused on sustainability and further documenting and sharing this experience. Additionally, he is looking forward to submitting

this project for recognition and publication as a national 4-H Program of Distinction by the close of this year, and also plans to pursue academic/professional publication of the program.