EREN
ECOLOGICAL RESEARCH AS EDUCATION NETWORK

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Newsletter #5

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I. Greetings from the EREN Coordinator's Office

Hello EREN Members! I hope things are going smoothly as your semesters or quarters wind down toward the winter holidays. Thanks for taking a moment at this busy time of year to get an update on EREN!

EREN is now 100 members strong, with 78 institutions represented, so we have real potential to design collaborative projects that explore questions across environmental and anthropogenic gradients. You can get involved in one of our pilot projects to try out this research/teaching model (see below) or use our network to develop your own collaborative project idea and associated curriculum. An excellent chance to do both will be at the **EREN All Members Meeting, June 27-29, 2012 at Meredith College in Raleigh, NC!**

The All Members Meeting will provide an opportunity to network, talk about ongoing collaborative projects, get training to participate in these projects, develop curriculum that builds on this collaborative research, develop new project ideas, and consider funding strategies for these ideas. EREN Members are also invited to bring a poster describing their current research program or collaborative research ideas they want to develop.

Travel expenses will be paid by EREN's NSF funding! EREN Members will each be allowed up to $600 to cover travel to the meeting site (save the original receipts in order to be reimbursed). A fixed per diem for the two travel days to and from Raleigh will also be provided. Hotel and meal expenses during the meeting itself will be covered by EREN.

To register for the EREN All Members Meeting follow this link to our official registration form. Please register by February 1, 2012. We will also be sending an e-mail invitation to register for the meeting that will include a tentative agenda. We look forward to networking and meeting many of our members personally in June 2012!

For now, thank you for devoting some of your valuable time to EREN, and we wish you a delightful holiday season.

Laurie Anderson
EREN Coordinator
Ohio Wesleyan University

II. Report on the November 2011 EREN Founder's Meeting

A group of EREN Founders met at Mount Saint Mary's University in Emmitsburg, MD on November 4-5, 2011. The Lead Scientists of the EREN pilot projects updated the group on their research and curriculum development progress. The online database being developed for the Permanent Forest Plot Project received some further improvements. However, the main topic of discussion was the EREN All Members meeting coming up June 27-29, 2012 at Meredith College. The group worked on logistics, possible speakers, and a tentative agenda.

If you have topics or concerns that you would like the EREN Founders to discuss at a future meeting, please send a message with your suggestions to erenteam@gmail.com. We are always interested in how we can best support our members as scientist-educators in ecology!

III. Pilot Project Updates

During 2011, EREN launched four pilot projects in order to explore different models of collaborative research that advance science and engage undergraduate students. One of these projects, the Stream Temperature Project, has already completed its first round of data collection and has entered Phase II. The other projects are still seeking participants. Please read about these projects below and contact the Lead Scientists if you are interested in joining a research team. Consider attending the EREN All Members Meeting (details above) to meet your collaborators, receive training from the Lead Scientists, and suggest improvements to project methods and related curricula.

a. PFPP: Permanent Forest Plot Project

Lead Scientists: Karen Kuers, kkuers@sewanee.edu, Sewanee: University of the South, TN, and Erin Lindquist, erinlind@meredith.edu, Meredith College, NC

The goal of this project is to establish a set of permanent research plots at colleges and universities throughout the United States that will allow faculty and students to address questions related to tree biomass, carbon accumulation, invasive species, and disturbance across a range of sites and ecoregions. Data from this project will be entered in an online database that will then be accessible and searchable to all participants. The online database will soon be available from the EREN website.

There are currently 15 members from 14 different institutions participating in this project. This is a long-term project and the PFPP team is actively seeking new members. For more information please refer to the Permanent Forest Plot section of the EREN website.

b. TURTLEPOP: Population Structure of Freshwater Turtles along an Urbanization Gradient

Lead Scientist: David R. Bowne, bowned@etown.edu, Elizabethown College, PA

The TurtlePop project works to collect samples of turtles in lentic habitats on or near school campuses in order to determine the population structure of turtles across an urbanization gradient. This project will be testing the following primary hypotheses: (1) The secondary sex ratio of turtles will be more male-biased as urbanization increases. (2) The population age distribution will be more biased towards adults as urbanization increases.

There are currently 17 members from 15 different institutions participating in this project. This project is still open for members to join. For more information on this project please refer to the TurtlePop page of the EREN website.

c. Aquatic and Terrestrial Leaf Decomposition

Lead Scientists: Carolyn L. Thomas, cthomas@ferrum.edu, Ferrum College, VA, and Tracy Gartner, tgartner@carthage.edu, Carthage College, WI

This project will evaluate leaf decomposition rates in paired terrestrial and aquatic systems and compare native and invasive plant species decomposition rates in different climatic conditions and geographic locations. The goals of this study are to (1) develop and test integrative protocols that will unite aquatic and terrestrial decomposition, and (2) identify the threshold of invasive plant abundance necessary to affect ecosystem processes. The leaves will be placed in the stream and forest in the fall of 2012 after leaf fall and the detailed protocols will be available in June 2012.

There are currently 11 members from 10 different institutions involved in this project and it is still open for members to join. For more information please refer to the aquatic and terrestrial leaf decomposition page of the EREN website.

IV. EREN in *Nature* Magazine!

Nature recently ran a feature on scientific careers at undergraduate institutions, and did a good job communicating the excitement we experience working with students as research partners (*Nature* **477,** 239–241; 2011). However, we felt that the article didn't say enough about the value of cross-institutional collaboration and the funding pressures of doing research at smaller institutions. So, the Leadership Working Group of EREN crafted a response, explaining how organizations like EREN can support scientist-educators at smaller schools. This was published in the correspondence section of the October 27, 2011 issue of *Nature* (see the full citation below). Check it out!

Lindquist, E. S., L. J. Anderson**,** J. A. Simmons. 2011. Correspondence: Small colleges aided by research networks. *Nature* 478: 458*.*

V. The Ecologist's Toolbox

We would like to thank EREN Member Timothy Menzel for this submission to the Ecologist's Toolbox. Dr. Menzel is an assistant professor of biology and environmental science at Piedmont College.

The Understory-O-Meter:
This is a device which I use to quantify the vertical structure of the vegetation in survey plots. I use a six-foot by 2-foot sheet of Styrofoam insulation (bought at Lowes in 4x6 sheets) with 2 lines drawn separating it into three 2-foot square sections. One person holds the device at a center point in the plot and another person views it from 4 vantage points, (north, south, east and west for example) along the edge of the plot. The viewer quantifies the percent cover of vegetation for each vertical section from each vantage and then averages them for each vertical section. The result is an average percent cover of vegetation at three height intervals across the plot. These are cheap to make, surprisingly resilient, they float (for wetland surveys) and are very light weight.

The Student Understory-O-Meter:
In the absence of Styrofoam, replace the device with one of your students, preferably one who is about 6 foot tall. Divide them vertically into sections and quantify the percent cover of vegetation for each section in a similar manner. These are expensive to make, and can be heavy and awkward to carry, but are also very resilient and are readily available.

VI. Get to Know EREN Members

Carolyn Thomas is a member of the EREN Leadership Working Group, one of the founders of EREN and one of the lead scientists for the *Aquatic and Terrestrial Decomposition of Native and Invasive Plant Leaves* EREN Research project. She is a professor of Environmental Sciences and Biology at Ferrum College in Ferrum, VA. Carolyn has been teaching at Ferrum College since 1979 and has been Coordinator of the Biology Program major for many years.

She teaches biology courses and environmental sciences courses on a two year rotation of courses which include – Aquatic Ecology, Pollution Science, Introduction to Environmental Sciences in Appalachia, Microbiology and Immunology, Invertebrate Zoology, Hydrology, General Biology, Healthy Human Body, Human Disease, Professional Preparation in the Natural Sciences, and Junior and Senior seminar. Dr. Thomas also co-teaches two different travel abroad courses during Eterm (experiential term in May) – The Natural History and Culture of Ireland and Tropical and Marine Ecology in the U.S. Virgin Islands.

Carolyn has directed a long-term, 25 year water quality research project studying nutrient dynamics and water quality in Virginia reservoirs (Smith Mountain Lake, VA and Claytor Lake, VA). In this research project she works with citizen scientists who collect the biweekly samples throughout the summer, student interns who chemically and biologically analyze the samples from the two reservoirs and other faculty at Ferrum College. Another research project is the study of mountain stream dynamics and leaf decomposition in Ferrum Mountain Creek on the Ferrum College campus along with Ferrum College students and other Ferrum College faculty. Dr Thomas was a part of two other research oriented collaborations, ROCA (Research Opportunities and Collaboration in the Appalachians with Appalachian Labs in Maryland and CAWS (Collaboration through Appalachian Watershed Studies) with 14 other small colleges in the Southern Appalachian mountains.

Dr. Thomas also serves on the Virginia Citizens for Water Quality Board of Directors, the steering committee of the Virginia Water Monitoring Council and the Upper Roanoke River Round Table. She has been a member of the Ecological Society of America (ESA) for 36 years and serves on the Award Committee of ESA. She is also a member of the North American Lake Management Society and the Virginia Academy of Sciences.

Carolyn graduated from Florida Southern College with a bachelor's degree in Biology and Mathematics, a Master's Degree from University of Georgia in Zoology and Ecology with Dr. Eugene P. Odum as her major professor, and received her PhD in 1985 from Virginia Tech (VPI&SU) in Environmental Engineering with Dr. Robert Hoehn as her major professor.