

I. Greetings from the EREN Coordinator's Office

In this issue:

I. Greetings from the EREN Coordinator

II. EREN Updates

III. Upcoming EREN Events

IV. Get to Know EREN Members: Harmony Dagleish

V. Ecologist's Toolbox

Hello EREN Members,

The year 2014 has been a busy one for EREN! As you will read below, our activities have included a publication from one of our collaborative projects, a pilot test of a network-wide assessment tool, an EREN All Members Meeting, and an EREN Organized Oral Session at the Ecological Society of America Annual Meeting. As of August 1, our membership stood at 254 people representing 187 institutions, and we had 8 active research projects. So EREN is thriving, data collection is proceeding apace in our collaborative studies, and my focus as Coordinator is shifting to how to help EREN continue after our funding from the National Science Foundation ends in May 2015.

The end of our funding cycle may prompt EREN Members to ask whether EREN will host a meeting in the summer of 2015. We are looking at our finances to see what is possible. The current sentiment on the EREN Leadership Team is that if funds are available, we are inclined to request an extension from NSF and hold a meeting, but some discussion and accounting is still needed before we commit to this.

A small task force has been developed to look at EREN's future and we hope to have some concrete ideas to share with the broader membership soon. Your engagement in this discussion of how to evolve EREN into the next phase is most welcome. Please send ideas to erenteam@gmail.com. Thanks, as always for your involvement in EREN.

Laurie Anderson
EREN Coordinator

II. EREN Updates

EREN Publication

Congratulations to the EREN collaborators of the Riparian Buffers Affect Stream Temperatures (RBAST) Project for their recent open access publication:

Simmons, J. A., M. Anderson, W. Dress, C. Hanna, D. J. Hornbach, A. Janmaat, F. Kuserk, J. G. March, T. Murray, J. Niedzwiecki, D. Panvini, B. Pohlada, C. Thomas and L. Vasseur. 2014. A comparison of the temperature regime of short stream segments under forested and non-forested riparian zones at eleven sites across North America. *River Research and Applications*. Article first published online: 7 AUG 2014 DOI: 10.1002/rra.2796.

EREN's goal is engage faculty and undergraduates at primarily undergraduate institutions in authentic, collaborative research where common experimental questions are investigated across multiple sites. The ultimate goal is to have these projects contribute to the primary literature. The RBAST team has proven it can be done! We are impressed with the hard work of all these researchers, and particularly want to recognize Jeff Simmons for his great leadership of the RBAST project.

EREN Organized Oral Session at ESA

EREN held an Organized Oral Session "The Ecological Research as Education Network (EREN): Merging teaching and research through continental-scale collaborative projects," on August 15, 2014, the last day of the Ecological Society of America Meeting in Sacramento, CA. The session gave an update on each of EREN's ongoing research projects, and also described the advantages and challenges of EREN's collaborative research model. Being scheduled on the last day of the meeting, attendance at the session was less than we would have liked, but this was an important venue for communicating EREN's accomplishments to date, and useful discussion occurred during the Q&A periods.

EREN All Members Meeting

The third EREN All Members Meeting was held at Augustana College in Rock Island, IL, June 25-27, 2014. A total of 53 people attended, and we had a very productive meeting discussing strategies for incorporating EREN projects into teaching and discussing further logistics for each ongoing research project. The poster session introduced some new project ideas, and we benefitted from presentations on assessment from Dr. Sarah Bunnell of Ohio Wesleyan University and on technological tools for teaching from Dr. Bryan Alexander of the National Institute for Technology in Liberal Education. We also spent some time pondering future directions for EREN once our NSF funding ends. Thanks again to local host Bo Dziadyk for his hospitality, and for arranging field trips to Augustana's field sites!

EREN Pilot Assessment Preliminary Results

In spring 2014, the EREN Leadership Team piloted an assessment tool to measure the teaching efficacy of EREN projects. The assessment tool was an online survey with ten questions addressing five general learning goals applying to all EREN projects. Students completed the assessment twice in a pre/post-test approach. The responses were scored using a rubric developed by members of the EREN Leadership Team. A total of 124 students from seven institutions completed the study. A paired t-test was used to compare pre- and post-test scores within and across institutions.

Using data from all institutions combined, we found that students showed significant improvement on the post-test for two questions, which were related to describing the value and techniques of scientific collaboration, and managing data collected across multiple sites. When data were examined for each institution separately, we found that classes that included a greater emphasis on EREN projects showed significant improvement in a greater number of questions, and more substantial improvement between the pre- and post-test. These results were used to make some revisions to our online assessment tool, and in September 2014, EREN members were invited to participate in the next phase of this assessment. We are still taking participants – contact erenteam@gmail.com if you want to join this effort.

III. Upcoming EREN Events

Discussion of EREN's Future Underway

The message at the EREN All Members Meeting was loud and clear: EREN Members value EREN and would like the organization to continue! The EREN Leadership Team is also interested in keeping EREN alive. A small task force is working on developing some concrete proposals to distribute to the broader EREN Membership for feedback. These proposals will include some ideas for transitioning the EREN Leadership Team to a more open group that new people can join through the process of election. Stay tuned for more information!

We are also continuing to seek other funding sources to support EREN in the future. Toward that end, we are inviting people to write testimonials on how EREN has been valuable to them. These testimonials may be published on the EREN web page, and/or made available to funding agencies. If you would like to assist EREN in this way, please place your testimonial on this Google document:

https://docs.google.com/document/d/1tFKcLOGQ2OKaSrwGPR_I_Cl9dtpXqo62ILpII5Vj6Ag/edit?usp=sharing.

EREN Represented at an NSF-Funded Workshop

On November 3-5, 2014, EREN Coordinator Laurie Anderson will be attending a workshop at the Cary Institute for Ecosystem Studies funded by the National Science Foundation titled "Grassroots Scientific Networks: Lessons Learned and Paths Forward". The goals of this workshop are to "identify the types of scientific understanding that can be uniquely accomplished by the grassroots network approach, as well as best practices for designing, running, and maintaining grassroots scientific networks." This workshop includes the leaders of other networks that have been in existence for longer than EREN. Laurie hopes to gather some ideas for sustaining EREN through time, as well as share some things she has learned from coordinating EREN.

IV. Featured EREN Member: Harmony Dalglish

Harmony Dalglish is Lead Scientist on the EREN project titled Oak MAST: Monitoring and Assessing Seed Traits. Harmony is Assistant Professor of Biology at the College of William and Mary in Williamsburg, Virginia, where she has been teaching since 2012.

Harmony's research focuses on understanding how plant-animal interactions affect plant population dynamics. Her research on American chestnut (*Castanea dentata*) restoration aims to understand how herbivory and seed predation drive chestnut population dynamics, and may ultimately limit or enhance successful reintroductions. After arriving at William and Mary, she began a study of common milkweed (*Asclepias syriaca*), examining the interactive effects of plant density, chemistry, and herbivory by specialist insects, such as monarch caterpillars, on milkweed patch size and population growth.

Harmony teaches Population and Community Ecology, an upper-level seminar on population modeling called "Rare to Invasive: Issues in Population Biology," and will begin teaching Introduction to Environmental Science and Policy next year. The College of William and Mary places a great emphasis on undergraduate research and the Department of Biology also has a MS graduate program.

Harmony graduated from Grinnell College with a BA in Biology and an Interdisciplinary Concentration in Environmental Studies. She obtained a Ph.D. in Ecology from Kansas State University and did postdoctoral research at Utah State University and Purdue University. In addition to her research position in the Department of Forestry and Natural Resources at Purdue, she was also an HHMI postdoctoral teaching fellow focused on integrating statistics and experimental design across the life science curriculum.

V. Ecologist's Toolbox: Search Image

Search image, a concept discussed most often in animal behavior courses, employs the idea that an animal may have a predetermined image of something such as a food source in its mind that biases what an animal looks for and potentially finds as it forages.

As many of us know, a great way to illustrate ecological concepts in the classroom is through an activity that allows students a chance to experience a concept first hand. One easy activity that can be used to demonstrate and teach the idea of search image involves a packet of colored toothpicks, an outdoor space that still has green grass, and your students. Make sure that you use this activity before you cover the concept of search image in class!

To conduct this activity, stick all of the differently colored toothpicks in green, mowed grass and tell the students to tally the numbers of each color as they collect them. Warn the students that they are looking for toothpicks in the grass, but DO NOT tell them that there are green toothpicks as this is how the idea of search image presents itself. Once searching commences, all the students will most likely first see the blue or red or tan toothpicks because they stand out, and will rapidly tally those colors. It usually takes a while before one student finds a green toothpick, but once they know what they are looking for, they also collect green toothpicks quite readily. After completion of the exercise, talk to the class about search images and the idea that once you are familiar with something, the mental picture you store in your head helps you find that item more quickly. You may also choose to discuss prey switching if that topic fits into your curriculum.

Thank you to EREN member Barbara Abraham from Hampton University for helping us think about search image and providing us with this teaching tool!