

In this issue:

**I. Greetings from
the Network
Coordinator**

**II. Report on
Founder's Meeting**

**III. Student
Collaboration**

**VI. Pilot project
pictures**

**-a. Permanent
Forest Plot**

-b. TurtlePop

-c. Leaf

Decomposition

**-d. Invasive
Earthworm**

**V. Get to Know
EREN Members: Ben
Dolan and Jason
Kilgore**

I. Greetings from the EREN Coordinator's Office

Hello EREN Members,

This newsletter represents a great moment for EREN. As evidenced by the photos and collaborations we present here, EREN has transitioned from a good idea to a real set of field projects, and you, our members, are working alongside your students to make EREN your own. I couldn't be more pleased. But, I also recognize that this is where some of our greatest challenges will be met – how do we bring data from disparate sites together in an efficient and coherent way? How do we, with scarce resources, support PUI scientists and students who are widely separated geographically? How do we maintain enthusiasm and momentum in the middle of our busy semesters, when the last thing you want to do is implement a new teaching lab that has the added pressures of collecting publication quality data for research?

The EREN Leadership Team is working on these questions at our upcoming February meeting, and we look forward to getting your input at our 2013 All Members Meeting. Our tentative location is Trinity University in San Antonio, TX – we hope to confirm this in the next few days. The meeting will likely begin with a welcome reception on Monday evening, June 24 and continue until midday on June 26, but the agenda is still under development. Significant travel support will be available through our NSF Funding; further details will follow shortly. At this point, we ask that you save the date!

We know that EREN takes significant time and energy, but we also hope you share our belief that our students and our professional development both benefit from this engagement. Thanks, as always, for your participation in EREN, and I look forward to our continued work together.

Laurie Anderson
EREN Coordinator

II. Report on the EREN Leadership Team Meeting – November 2012

The EREN Leadership Team met at St. Olaf's College in Northfield, MN on November 2-3, 2012. Thanks to Dr. Kathy Shea for hosting us on St. Olaf's beautiful campus! The majority of time at the meeting was spent discussing two items:

1. Development of EREN curriculum – We continue to work toward developing guidelines for teaching with the data emerging from the EREN pilot projects. Since the projects are so different, the curriculum will be unique for each project. However, these diverse educational activities will be linked by a common theme of guiding undergraduates toward larger-scale thinking and working with data that transcends the single site. We plan to continue to engage the broader EREN membership in our curriculum development efforts.
2. Management and storage of EREN Data – We decided to make this the main focus of our upcoming February 9-10, 2013 meeting in Raleigh, NC and will be meeting with personnel from the National Center for Ecological Analysis and Synthesis to get their advice on managing and storing the diverse, multi-site data generated by the EREN pilot projects.

If you have any agenda items to suggest for the EREN Leadership Team, please contact Laurie Anderson, EREN Coordinator at erenteam@gmail.com.

III. Undergraduate Student Collaboration in the Permanent Forest Plot Project (PFPP)

One of the core objectives of EREN is to “develop collaborative research projects among PUIs at regional to continental scales, paying special attention to the constraints of scientists with significant teaching responsibilities.” This objective focuses on the activities of faculty members, however, with the efforts of Drs. Ben Dolan and Jason Kilgore, students at The University of Findlay (UF) and Washington & Jefferson College (W&J) are now collaborating on an emerald ash borer impact project.

At the June 2012 EREN All Members Meeting, Ben Dolan and Jason Kilgore volunteered to design an emerald ash borer project as an extension of the Permanent Forest Plot Project and as a pilot study for a more robust project that benefits from EREN's ability to facilitate spatial replication. In working together on this project, they found many similarities in pedagogies and research interests. As work progressed on the sampling protocols, Dolan and Kilgore decided that they wanted to pilot a collaboration among students at their universities. Specifically, Dolan's students would be teamed up with Kilgore's students to develop hypotheses and present their evidence in a shared poster at their schools' respective undergraduate research symposia.

"Faculty at PUI's can sometimes feel isolated in terms of research interests, and the power of EREN is to link us with like-minded folks," said Dolan. "And the same is sometimes true of our undergraduates who are interested in ecology and field biology. Many of the biology majors at the UF are interested in human or veterinary medicine, so Jason and I decided to leverage EREN for our students, and allow them to conduct collaborative research with like-minded peers at other institutions."

To facilitate sampling and develop meaningful, working relationships, the team from UF, which included Dolan and two students, Gabrielle Runco and Dillon Webster, traveled to Washington, PA, in September to help establish plots and collect data. Later that same month, Kilgore and his team of Caitlin Fadgen, Leslie Kollar, Caitlin Morrissey, and Kia Ruhkamp traveled to Findlay, OH, to help Dolan and his students do the same. While visiting, students stayed in each other's dorms or apartments and ate meals in the dining halls. Other students who volunteered, but were unable to travel included Beverly Beavers and Lauren Emsweller of UF and Brittany Verrico from W&J.

"Working with students from another location was great because we could present different ideas that one of us might not have thought of on our own. In addition, since the EAB infestation is not as progressed in Pennsylvania, Bev and I were able to get a different perspective on EAB infestation in another state," explained Runco. "The biggest challenge with working in a group from another location was definitely communication."

Students developed hypotheses for their research during their face-to-face meetings, but, following the visits in September, all work was conducted remotely and aided by technology. There were bumps along the way, but the students found that "cloud computing" made working together much easier.

Documents and data were stored on GoogleDocs where students could simultaneously work on them and avoid multiple copies stored in email in boxes. One of the larger challenges for collaborating was differences in software for data analysis and presentation. UF and W&J had licenses for different software packages, which made sharing data and analyses and info more difficult.

The collaborative research was presented by W&J students in December at their college research symposium and again at the Western Pennsylvania Undergraduate Biology Symposium in April. Likewise, the UF students will present the work at UF's symposium, The Ohio Academy of Science Meeting, and at Posters at The Capitol: Undergraduate Research from Northwest Ohio, all events occurring in the early spring.

Dolan and Kilgore plan to present more about the collaboration at the next EREN All Members Meeting in summer 2013. Keep your eyes open for their poster!

Members of the W&J and UF collaboration pose for a group photo below.



IV. Pilot Project Pictures

EREN projects have been launched at primarily undergraduate institutions all over the country. Below are some pictures of students setting up projects and collecting data.

a. PFPP Collaboration with students from The University of Findlay and Washington and Jefferson College

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



Above: Students taking measurements at a plot near Washington and Jefferson College.



Left: EREN member Ben Dolan and students setting up plots at the University of Findlay.

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

February 3,
2013

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



Above: These are only a few of the many turtles caught by the students at Anoka Ramsey Community College in Coon Rapids, Minnesota.

Left: The pilot projects don't come without their challenges, as the students at Moravian Academy try to remove a snapping turtle from one of their traps.

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



Above: Students at Ohio Wesleyan University at the Kraus Nature Preserve in Delaware, Ohio setting up the terrestrial decomposition leaf litterbags.



Left: Students from Ohio Wesleyan University setting up the aquatic decomposition leaf litterbags.

Lead Scientist: Tim McCay, tmccay@colgate.edu,
Colgate University, NY



Students from Ohio Wesleyan collecting earthworms at the Kraus Nature Preserve.

V. Get to Know the EREN Members: Ben Dolan and Jason Kilgore

Drs. Ben Dolan (University of Findlay, Findlay, OH) and Jason Kilgore (Washington & Jefferson College, Washington, PA) met at the 2012 EREN All Members Meeting and immediately recognized their shared interests in collaborative undergraduate research, their relative geographical proximity, and their complementary personalities! While drafting protocols to assess EAB infestation, their professional relationship blossomed to include their research students (see Undergraduate Collaboration article in this newsletter). In the spirit of collaboration, their biographies are presented together.

Ben and Jason are fifth-year Assistant Professors of Botany in Biology Departments at their respective institutions. Both maintain greenhouses and herbaria and teach General Biology and Botany. In addition, Ben teaches courses in General Ecology, Conservation Biology, Introduction to Research, and will be teaching Geographic Information Systems for the first time this fall. Jason teaches additional core courses in Applied Statistics, Field Biology, Biology Seminar, and First-Year Seminar, as well as occasionally teaching Useful Plants (non-majors), Dendrochronology, Experimental Biology, and a desert-to-mountain ecology and wilderness survival course in the Tucson Basin in January. Jason recently formed a Campus Arboretum at W&J College by inventorying campus trees and working with Facilities to improve species diversity and tree management. And while Ben hasn't formed an arboretum on campus, he works with Facilities to have UF's 46 ash trees treated with pesticides to combat emerald ash borer, and he hosted a workshop for groundskeepers on proper mulching around trees.

Ben earned a B.S. in Biology and a B.A. in French from Presbyterian College, a small PUI in upstate South Carolina. From there, Ben attended Purdue University, where he earned his M.S. and Ph.D. in Forest Ecology under the guidance of Dr. George Parker. Continuing as a post-doc at Purdue, Ben helped establish the Hardwood Ecosystem Experiment, a long-term study designed to evaluate the role of disturbances on the dynamics of oak-hickory forests in southern Indiana. After his post-doc, Ben had the pleasure of teaching at Sewanee while Dr. Karen Kuers, EREN co-PI and founder, was on sabbatical. Since joining the faculty at Findlay, Ben has focused most of his research energy on collecting long-term data to evaluate the changes in forest plant structure as a result of emerald ash borer's introduction. He and his students are participating in the EREN Permanent Forest Plot Project and the Distribution of North American Earthworms Project.

Jason used Michigan State University to earn all of his degrees, including two B.S. Degrees in Environmental Sciences (Lyman Briggs School, now College) and Conservation and Environmental Management (Fish and Wildlife), M.S. in Ecology and Evolutionary Biology (Botany & Plant Pathology), and Ph.D. in Ecology, Evolutionary Biology and Behavior (Dr. Frank Telewski, Plant Biology). Between undergraduate and graduate school, Jason worked as a natural resource consultant in wetland and stream permitting and restoration, wildlife surveys, and forestry management. He also co-owned and operated a native plant design business with his wife for a number of years. After teaching for a year at MSU, Jason moved to W&J to focus on teaching and research with undergraduates. Jason's research interests include ecophysiological limits to tree distribution, impacts of non-native plant species on plant communities, and restoration of native plant communities.