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I. Greetings from the EREN Coordinator's Office

It has been a busy quarter for the EREN Founders as they prepare EREN to "go public" and engage faculty and student scientists at undergraduate institutions in collaborative research projects. Our activities since our last newsletter have included an EREN Founder's meeting in which pilot projects were further developed, some pilot work in permanent plots on Founder campuses, a poster presentation at the biannual Research Coordination Network Principal Investigator's Meeting at the National Science Foundation, and participation in a workshop to define student climate research at the National Oceanic and Atmospheric Administration. In addition, a position paper describing the EREN vision was accepted for publication in the journal *BioScience*. Best of all, EREN now has over 50 online members and we hope this will continue to grow! We plan to have one of our pilot projects ready for member participation in August 2011 and will kick off the project at a workshop at the Ecological Society of America Annual Meeting in Austin, Texas. Keep your eyes open for e-mailed details. Meanwhile, enjoy the newsletter and please feel free to provide suggestions and ideas as EREN evolves.

Laurie Anderson, EREN Coordinator
Ohio Wesleyan University



Members of the EREN Founders met at Ohio Wesleyan University, November 5-6, 2010, to continue discussion on collaborative research projects.

II. Summary of Recent Meetings

a. EREN Founder's Meeting at Ohio Wesleyan November 5-6, 2010

Members of the EREN Founders group, composed of 18 scientist-educators from 14 institutions, met at Ohio Wesleyan University in Delaware, OH in November to continue discussion on collaborative research projects.

Projects discussed were:

- permanent forest plots across an urbanization gradient
- decomposition comparisons of native and invasive species
- effects of riparian vegetation on stream temperature
- tick density estimations across a range of environments
- sex ratios of freshwater turtles across an urbanization gradient
- leaf phenology comparisons across sites

The Founders discussed the potential for these projects to produce publishable data and to support the broader mission of EREN as a collaborative research network that fully engages students in real science. Many of these projects seem feasible for introductory labs; however some of the methods and questions need to be further developed before they can be pursued at the network level. Discussion also centered on strategies for EREN to make the projects sustainable and ongoing, enabling the best use of the NSF grant funding. The diversity of projects currently under development has the potential to attract a wide array of collaborators to the network.

b. Research Coordination Network Principal Investigator's Meeting National Science Foundation, Washington, DC, December 6-7, 2010

Network Coordinator Laurie Anderson represented EREN at this required meeting for RCN PIs and summarized EREN's plans and accomplishments in a poster. EREN was very well received by our RCN colleagues and by the NSF Program officers. The meeting was quite valuable in providing an overview of the challenges all RCNs face, such as creating a workable administrative structure, dealing with issues of authorship and data ownership, maintaining communication among members, and program longevity. It was helpful to see the ways that other RCNs had addressed these challenges and to share our own solutions to these problems.

c. NOAA Workshop on Student Climate Research Silver Spring, MD, November 17-19, 2010

Network Coordinator Laurie Anderson represented EREN at this invited workshop on involving students (K-16) in authentic research, particularly projects related to climate change. There was extensive discussion of how research experiences of pedagogical value for young scientists could be used to create new scientific knowledge. There was also discussion of the challenges of moving from purely pedagogical research experiences to scientifically valuable research in the classroom and the human and physical resources required for this transition. There was also extensive sharing of example projects that effectively combined teaching and research.

III. Announcements

a. EREN to publish in *BioScience*

We are very pleased to announce that the position paper “Transforming Ecological Science at Primarily Undergraduate Institutions through Collaborative Networks”, authored by twelve EREN Founders, has been accepted for publication in *BioScience*. Thanks to David Bowne, Amy Downing, Martha Hoopes, Kathleen LoGiudice and Carolyn Thomas (AKA “The *BioScience* Writing Team”) for their hard work in bringing this manuscript to completion!

b. EREN to hold free workshop at ESA 2011

EREN plans to invite online members to participate in one or more pilot projects by August, 2011 and will introduce its first project at a workshop to take place at the Ecological Society of America Meetings in Austin, TX in August 2011. The workshop has been approved by ESA, but the date has not yet been finalized. The workshop will be free to EREN members and will include lunch. Watch for more details soon!

IV. Get to Know EREN Network Members

Erin Lindquist

Erin Lindquist, member of EREN's Leadership Working Group and lead scientist for the Urban Plots by Undergraduate Students (UP by US), is an Assistant Professor in the Department of Biological Sciences at Meredith College in Raleigh, NC. At Meredith she coordinates their new Environmental Sustainability major and minor. She teaches introductory biology courses for non-majors, and several courses for biology and environmental sustainability majors including plant biology, environmental science, and terrestrial field studies. She also leads a summer study abroad course, Tropical Ecosystems, in Costa Rica for Meredith students. Her research focuses on forest ecology and conservation. She has maintained a long term tropical forest regeneration study in Costa Rica and coauthored a bilingual plant taxonomy book of the trees of her study area with two undergraduate students. Lindquist has also collaborated with various international colleagues to study the role of land crabs in tropical ecosystems. In Raleigh she and her students study the ecology of an urban, fragmented forest on the campus. They have established a long-term forest plot to investigate such topics as small mammal ecology, tree community structure, and herbivory and look forward to collaborating with colleagues in EREN on the project.

Dr. Lindquist graduated *summa cum laude* from Cornell University with a BS in the Biological Sciences in 1997 and received her PhD in Ecology from the University of Georgia in 2003. Prior to coming to Meredith College in 2006, Erin was a Resident Professor with the Organization for Tropical Studies in Costa Rica for their undergraduate and graduate field courses.

V. The Ecologist's Toolbox

In this section we encourage our members to share “tricks of the trade” that have helped them be more efficient and productive in the teaching/research missions we pursue. If you have a tip to share, please send it to erenteam@gmail.com along with your name and affiliation so we can credit you properly!

This “Ecologist's Toolbox” contribution is from Dr. Liette Vasseur and Jessica Pike (Department of Biological Sciences, Brock University).

Using aerial photography as a tool to better understand ecological communities

Aerial photographs are valuable when understanding ecological communities and monitoring changes in land uses over time. Since the 1930s, these aerial photographs have become increasingly available, providing documentation at both spatial and temporal scales. These photographs are manually interpreted by analyzing the tone, shape, size, pattern, texture, shadows, sites and context. Valuable information from these photographs can be obtained ranging from recognizing a single tree species to the spread of a particular disease or the changes in land use (e.g. from forest to agricultural land). Costs associated with aerial photographs are greatly reduced compared to traditional land surveys. An important aspect to consider when acquiring aerial photographs is the appropriate scale, dependent upon a study's objectives. For an example, if a study requires general land cover information, a scale of 1:40 000 would be appropriate compared to a study using a change in land use where a scale of 1:20 000 to 1: 4800 would be suitable. This could be furthermore compared at a finer scale if a study was looking at a single tree species and thus a scale of 1:2 400 to 1: 1 200 would be needed.

It is also important to note that nowadays, satellite imagery is also increasingly readily available, adding to the ability to systematically revisit information over an even wider array of areas. Together, aerial photography and satellite imagery can prove to be most useful in terms of maintaining a historical database and providing baseline data for long term ecological monitoring.

For further information:

Morgan, J.L., Gergel, S.E., Coops, N.C. 2010. Aerial Photography: A Rapidly Evolving Tool for Ecological Management. *Bioscience*, 60: 47-59.

VI. Upcoming Events and Meetings of Interest

Council on Undergraduate Research Dialogues 2011

February 24-26, 2011

Hamilton Crowne Plaza, Washington, DC

More information: <http://www.cur.org/11curdialogues/11cd.html>

Gateways to Best Practices for Undergraduate Research Program Directors

Sponsored by the Council on Undergraduate Research

June 14-16, 2011

Washington University, St. Louis, MO

More information: <http://www.cur.org/urpd2011.html>

EREN Founder's Meeting with NEON

June 29-July 1, 2011

Boulder, CO

More information will be forthcoming. Check the following link regularly for updates:

<http://erenweb.org/about/upcoming-events/>

Ecological Society of America 96th Annual Meeting

August 7-12, 2011

Austin Convention Center, Austin, TX

More information: <http://www.esa.org/austin/>