

## Restoration news bites:

- ◆ ERIE Trainee Michael Habberfield recently gave a presentation at the Northeast Partners in Amphibian and Reptile Conservation annual meeting at Allegany State Park titled "Pool Arrangement & Scale of Translocation Influence Movement Parameters & Habitat Selection of Green Frogs (*Lithobates clamitans*)."
- ◆ ERIE Trainee Justin Donhauser recently had a paper accepted to the journal *Ethics & the Environment* titled "How theoretical analyses in ecology *can* enable environmental problem-solving." The paper will come out in December of this year.
- ◆ Dr. Diana Aga of the Chemistry Department gave a keynote presentation featuring ERIE Trainee Joshua Wallace's research at the "Antibiotics in Agroecosystems: State of the Science" Workshop at the Biosphere in Tuscon, Arizona.
- ◆ ERIE Trainee Luke Scannell recently presented a poster at the American Chemical Society Meeting titled "Feasibility of Utilizing Algal Biomass for the Pretreatment of Hydraulic Fracturing Wastewater."
- ◆ REU participant Kimberly Alexander will be presenting a poster titled "Hydrodynamic Effects of Invasive Mussel (*Dreissena polymorpha* and *Dreissena bugensis*) Shells in a Laboratory Flume" with Dr. Sarah Delavan this fall at the Council on Undergraduate Research's Research Experience for Undergraduates Conference in Arlington, Virginia.

## Two ERIE IGERT Trainee Internship Spotlights



Jonathan Pleban measuring leaf gas exchange of drought stressed *Brassica rapa* genotypes. Photo: Christine Pleban

This article was provided by Jonathan Pleban, Geography Department & ERIE IGERT Trainee.

Second year Ph.D. student and ERIE IGERT Trainee Jonathan Pleban completed an internship this summer learning laboratory and field techniques in plant ecophysiology to assess stress responses of both trees and herbaceous annuals. The internship was hosted by Dr. Brent Ewers' Botany lab at the University of Wyoming. Dr. Ewers' lab has several ongoing projects including experimental work assessing the drought response of numerous genotypes of *Brassica rapa* and field work in the nearby Medicine Bow National Forest evaluating forest dynamics after a recent bark beetle epidemic. Through the six-week internship, Jonathan learned about the installation and maintenance of both sap flow sensors and an eddy covariance tower, both of which are used to understand water and carbon fluxes within forests.

Jonathan also spent time learning laboratory techniques including measurement of non-structure carbon and starch quantity of plant tissue. Finally, time permitted a small experiment that will be used to supplement existing data evaluating the response of six genotypes of *Brassica rapa* to drought conditions. This experiment measured gas exchange, plant water status, and vulnerability to cavitation of 240 plants. The data will be integrated into existing models of drought response at UB.

This article was provided by Jonathan Malzone, Geology Department & ERIE IGERT Trainee.

ERIE IGERT Trainee Jonathan Malzone completed an internship this summer with the United States Geological Survey (USGS) Water Energy and Biogeochemical Budgets (WEBB) program in order to quantify dissolved organic carbon (DOC) transport between streams and aquifers. The project took place in the uplands of the Sleepers River Research Watershed in Danville, VT where mercury from coal burning plants further west is entering the ecosystem as it is deposited, reacts, and travels with DOC. It is the WEBB program's goal to study DOC as a proxy for mercury transport in order to more easily track its movement through the environment. Research for the project had the objective of comparing in-stream, riparian, and upland sources and sinks of DOC.

Jonathan was able to collect a data set that can be used to describe how DOC is transported from aquifers to streams. This is important for his research because DOC seems to be an important factor in controlling the conditions of the hyporheic zone. In previous studies he was only able to look at streams that had low DOC concentrations, but with this internship the other end-member (high DOC streams) could be observed.



Jonathan Malzone recording field data. Photo: Maggie Dicks

## Environmental Restoration Summer Workshops

This past summer we held three summer workshops: *pumping test design & analysis*; *bioengineering & redirective stream stabilization*; and *streambank stability analysis & modeling*. The workshops were very successful and we had participants from organizations across NY state and Canada. We are in the process of re-evaluating the summer workshop program and will offer two workshops (one week total) in summer 2015 focused on stream restoration.

The first workshop, **Fundamentals of Stream Channel Design**, will be held on June 1-2 and be taught by Dr. Sean Bennett and Dr. Alan Rabideau of UB. This workshop will focus on stream restoration design approaches, modeling tools, local case studies, and other aspects of physical stream channel design.

The second workshop, **Watershed Management Planning, Assessment, & Monitoring**, will be held June 3-5 and taught by Dr. Kelly Frothingham of Buffalo State College, Dr. Wayne Gall of NYS Department of Health, and Dr. Alan Rabideau. This workshop will focus on watershed/project planning, biomonitoring methods, using the Stream Visual Assessment Protocol (SVAP), and include a session on aquatic macroinvertebrate identification and sampling.

**More information will be posted our [workshop webpage](#).  
Registration will open in late 2014/early 2015.**

## Donations to Assist in Ecosystem Restoration Student Research Needed

Please consider donating to the **Ecosystem Restoration Scholarship Fund**. Your tax-deductible gift will support summer student research in ecosystem restoration in the Great Lakes & Western New York Region.

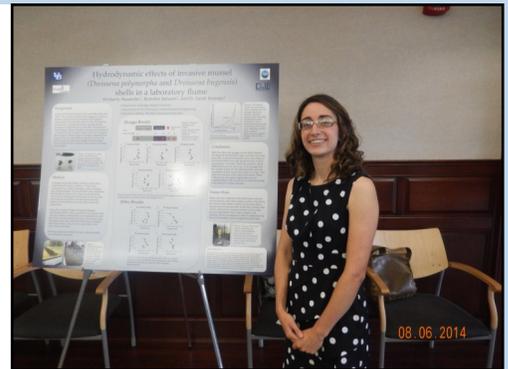
**Your support is greatly appreciated.  
Donations are accepted [online](#).  
Thank you!**

## ERIE IGERT Trainee Graduates

Congratulations to recent ERIE IGERT trainee graduate, **David T.R. Stewart!** Dr. Stewart graduated with his Ph.D. in Chemistry earlier this year under the advisement of Dr. Diana Aga. His dissertation was titled "Emerging Environmental Contaminants and the Metabolic Effects of Exposure Investigated by Mass Spectrometry." Dr. Stewart is now a tenure track assistant professor of Chemistry at D'Youville College in Buffalo.

## ERIE Research Experience for Undergraduates (REU) Summer 2014 Program

This past summer the ERIE Research Experience for Undergraduates (REU) Program hosted eight undergraduate students from across the country. Participants were: Kimberly Alexander (Niagara University), Emily Boivin (Ithaca College), William Fagan (SUNY Geneseo), J. Lynn Hickerson (Portland State University), Scott MacDonald (University of Missouri), Kwadwo Nketia (Texas Tech University), Michael Reubens (UB), and Jamie Thompson (Baldwin Wallace University). The students conducted research with faculty and doctoral students on a variety of topics related to ecosystem restoration and engineering for sustainability over their 10-week stay in Buffalo. Participants also had the opportunity to visit places in western New York to learn about the environment and history of the area such as a tour of Love Canal, visiting Niagara Falls, birding in Delaware Park, and a tour of Reinstein Woods Nature Preserve.



*Kimberly Alexander received the award for the best poster presentation. Photo: Kwadwo Nketia*



*REU student group after their Symposium presentations.  
Photo: Sarah Delavan*

We will have another ERIE REU Program during the summer of 2015. The application will open at the end of 2014. More information will be posted on our [REU Program webpage](#).

**Thank you to all of our REU student participants and their mentors for making 2014 a success!**

We hope you enjoyed this issue of the ERIE Newsletter. Please share with others who may be interested. If you have any suggestions or comments please contact Amy Bartlett, Program Coordinator, at [amyb@buffalo.edu](mailto:amyb@buffalo.edu).

You can find more ERIE news and information at [www.erie.buffalo.edu](http://www.erie.buffalo.edu)