

**Department of Ecology, Evolution, and Natural Resources
and
Ecology and Evolution Graduate Program Newsletter**

January – March 2011

Previous newsletters may be found at:

<http://www-rci.rutgers.edu/~deenr/news.html>

Presentations:

Ashley DeNegre, a Ph.D. student advised by Nina Fefferman, presented a talk titled "Virtual Worlds and Human Behavior: A case study in health risks at the Command, Control, and Interoperability Center for Advanced Data Analysis (CCICADA)-wide Research Retreat in Los Angeles

Jason Grabosky gave the following two presentations in the section on Urban Trees in the Face of Climate Change of the 9th Symposium on the Use of Plants in the City held at the Bavarian State Institute for Viticulture and Horticulture, Osnabruck Germany

- "Recommended Urban Trees: Tree Selection for Stress Tolerance"
- "Structural Soil Substrate for Urban Trees "

Lena Struwe was the featured faculty speaker in the Ecology and Evolution Graduate Student Association Spring Seminar Series on Feb 24, 2011. The title of her seminar was "Up and down in the Amazon, Andes, and lost worlds of South America – why are plants where they are, how did they get there, and why?"

Publications:

The **Debashish Bhattacharya** lab has six publications to report since our last newsletter:

- Pelletreau K.N., **Bhattacharya D.**, Price D.C., Worful J.M., Moustafa A. and Rumpho M.E. 2011. Update on sea slug kleptoplasty and plastid maintenance in a metazoan. *Plant Physiology*, 155(4): In press. doi:10.1104/pp.111.174078
- **Chan C.X.**, **Gross J.**, Yoon H.S. and **Bhattacharya D.** 2011. Plastid origin and evolution: new models provide insights into old problems. *Plant Physiology*, 155(4): In press. doi:10.1104/pp.111.173500
- **Chan C.X.**, Yang E.C., Banerjee T., Yoon H.S., Martone P.T., Estevez J.M. and **Bhattacharya D.** 2011. Red and green algal monophyly and extensive gene sharing found in a rich repertoire of red algal genes. *Current Biology*, 21(4):328-333.
- **Gross J.** and **Bhattacharya D.** 2011. Endosymbiont or host: who drove mitochondrial and plastid evolution? *Biology Direct*, 6:12.

- Rumpho M.E., Pelletreau K.N., Moustafa A. and **Bhattacharya D.** 2011. The making of a photosynthetic animal. *Journal of Experimental Biology*, 214:303-311.
- Reeb V., Kolel A., McDermott T.R. and **Bhattacharya D.** 2011. Good to the bone: microbial community thrives within bone cavities of a bison carcass at Yellowstone National Park. *Environmental Microbiology*, In Press. Online Nov 2, 2010. doi:10.1111/j.1462-2920.2010.02359.x

The **Joan Ehrenfeld** lab reports the following publications:

- **Ehrenfeld, J.G., M. Palta, and E. Stander***. 2011. "Wetlands in Urban Environments," in: *The Routledge Handbook of Urban Ecology*, Ian Douglas et al., eds., Routledge: London.
*Emilie Stander received her Ph.D. in 2007 advised by Joan Ehrenfeld.
- **Ehrenfeld, J.G.** 2011. "Transformers," in: *Encyclopedia of Biological Invasions*, D. Simberloff and M. Rejmanek, eds., University of California Press: Berkeley.
- **Stander, E.K., and J.G. Ehrenfeld** 2010. Urban Riparian Function. *Urban Ecosystem Ecology*. Aitkenhead-Peterson and Volder, eds .Agronomy Monograph 55.
- **Ehrenfeld, J.G., E.K. Stander** 2010. Habitat Function in Urban Riparian Zones. *Urban Ecosystem Ecology*. Aitkenhead-Peterson and Volder, eds .Agronomy Monograph 55.

Jason Grabosky and his lab report the following publications:

- **Grabosky J.C.**, Smiley E. T. and **Dahle G.*** A. 2011. Observed symmetry and force of *Plantanus X acerifolia* (Ait.) Willd. roots occurring between foam layers under pavement. *Arboriculture & Urban Forestry* 37(1):35-40.
*Greg Dahle received his Ph.D 2009 advised by Jason Grabosky.
- **Grabosky J.** and Gucunski N. 2011. A method for simulation of upward root growth pressure in compacted sand. *Arboriculture & Urban Forestry* 37(1): 27-34.
- Gilman, Edward F., and **Jason Grabosky** 2011. *Quercus virginiana* root attributes and lateral stability after planting at different depths. *Urban Forestry and urban Greening* 10(2011): 3-9.

Karlo Hock, a post-doc in the Nina Fefferman lab, has two publications to report; one co-authored with Nina:

- **Hock, K.**, Ng, K.L. & **Fefferman, N.H.** 2010. Systems approach to studying animal sociality: individual position versus group organization in dynamic social networks. *PLoS ONE* 5: e15789.
- Hudina, S., Galic, N., Roessink, I. & **Hock, K.** 2011. Competitive interactions between co-occurring invaders: identifying asymmetries between two invasive crayfish species. *Biological Invasions*, Epub DOI:10.1007/s10530-010-9933-2

Wayne Rossiter and advisor **Michael Sukhdeo** have the following publication to report:

- **Rossiter, W., Sukhdeo, M.** 2010. Exploitation of asymmetric predator-prey interactions by trophically transmitted parasites. *Oikos* DOI:10.1111/j.1600-0706.2010.19077.x

Lena Struwe has the following online publication:

- Sasha W. Eisenman & **Lena Struwe**. 2011. The global distribution of wild tarragon (*Artemisia dracuncululus* L.; Asteraceae) cytotypes with twenty-seven new records from North America. *Genetic Resources and Crop Evolution*. DOI 10.1007/s10722-010-9653-6.

Judy Weis and her lab report the following publication:

- Reichmuth, J.M., **J. MacDonald***, J. Ramiriz and **J.S. Weis** 2011. Fight or flight: an investigation of aggressive behavior and predator avoidance in two populations of blue crabs (*Callinectes sapidus* Rathbun) in New Jersey. *Hydrobiologia* 658: 173-182.
*James MacDonald received his Ph.D. in 2008

Faculty Achievements and Activities:

Steven Handel has been named to the Design Advisory Committee of the "Designing the Parks: National Parks Design Competition." This is a two-year initiative to broadly test and refine new design principles for the preservation and stewardship of the National Park System in the 21st century. It is a collaboration of the National Parks Service, the National Parks Conservation Association, and the Van Alen Institute, dedicated to projects in public architecture.

Congratulations to Julie Lockwood!

Julie Lockwood has been named recipient of this year's Department of Biology Distinguished Alumnae Award from Georgia Southern University. Julie joins a distinguished group of other alumni who have won the award in the past, including professors, physicians, and other professional biologists and educators. She will be travelling back to Georgia Southern on April 2nd to present her seminar at their annual Alumni Dinner.

George McGhee (Geology) spent 3 months in Austria as a Fellow of the Konrad Lorenz Institute for Evolution and Cognition Research. The Konrad Lorenz Institute (or KLI) is located on the Danube River of Strauss-Waltz fame, just outside of the city limits of Vienna. McGhee was working on the phenomenon of convergent evolution, a topic that has fascinated him since he was a small boy when he noticed that the eyes of a deadly pit viper snake in a zoo he was visiting were identical to the eyes of his pet black cat -- both had eyes with a beautiful gold iris and a very odd-looking vertical-slit black pupil. Only many years later would he understand why the eyes of a predatory mammal and a predatory reptile were so similar. At the KLI, McGhee was working on the complex interplay of the roles of functional constraint and developmental constraint in producing convergence in evolution. When not working, he and his wife spent much time in the old city of Vienna, and traveled to the city of Salzburg in the Alps Mountains of Austria to visit the birthplace of Mozart.

Student Awards, Achievements, and Activities:

Congratulations to Wes Brooks!

The American Institute of Biological Sciences (AIBS) has selected **Wesley Brooks**, a Ph.D. candidate in the Rebecca Jordan lab, to receive the 2011 AIBS Emerging Public Policy Leadership Award (EPPLA). "AIBS is committed to fostering a productive dialogue between policymakers and scientists," said AIBS Executive Director Dr. Richard O'Grady. "We applaud Wesley Brooks for exemplifying this commitment through his work." While at Rutgers, Wes has interned with the National Center for Environmental Economics at the Environmental Protection Agency, where he contributed to the development of a computer model to more accurately project the costs of climate change. He was also a Governor's Executive Fellow through a program at the Eagleton Institute of Politics. Prior to graduate school, he worked as an ecological consultant at the Key West Tropical Forest and Botanical Garden in Key West, Florida, where he collaborated with government agencies and others to share plant population data across conservation areas. Wes earned a bachelor's degree in biology and political science from Duke University.

Emma Green-Beach, a master's student working with David Bushek, has accepted a position as "Aquaculture Research Assistant" at the prestigious Marine Biological Laboratory in Woods Hole, MA.

Emma Green-Beach also received a Student Travel Award from the National Shellfisheries Association to present her thesis research at the NSA 103rd Annual Meeting in Baltimore, MD March 27-31, 2001.

Transitions:

Congratulations to the following on the successful completion of their Qualifying Exam:

- **Orion Weldon**, advisor Julie Lockwood, on Dec 14, 2010.
- **Christopher Zambell**, advisor James White, on Dec 15, 2011
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The E&E family continues to grow!

- Brendan John Fox was born to Jeremy and Brinsley Fox on Jan. 24. Jeremy received his Ph.D. in 2003 advised by Peter Morin
- Emilio "Milo" Ernesto Pena was born to Sarah and husband Ed Pena on January 30th at 7:57am. Sarah is completing her master's advised by Joan Ehrenfeld.
- Nick (Ph.D. 2011, advisor Ming Xu) and Susie Skowronski welcomed William "Will" Stanley Skowronski on January 4th.
- Lauren Spearman, (Ph.D. 2009, advisor Mike May) and husband John LaPolla celebrated the birth of Samuel Spearman LaPolla on December 16th.

Alumni:

Patricia Alvarez,(Ph.D. 2009, advisor Jim White), has two publications to report:

- Varun S., J. Terborgh, K.G. Dexter, B.D. Best, **P. Alvarez** and F. Cornejo. 2011. Are all seeds equal? Spatially explicit comparisons of seed fall and sapling recruitment in a tropical forest. *Ecology Letters* DOI: 10.1111/j.1461-0248.2010.01571.x
- **P. Álvarez-Loayza**, J.F. White Jr, M.S. Torres, H. Balslev, T. Kristiansen, J-C Svenning, N. Gil. 2011. Light Converts Endosymbiotic Fungus to Pathogen, Influencing Seedling Survival and Niche-Space Filling of a Common Tropical Tree, *Iriarteia deltoidea* *PLoS One* doi/10.1371/journal.pone.0016386

Kyle Bennett, (Ph.D. 2009, advisor Rich Lutz), accepted a tenure track assistant professor position at Elmhurst College in Elmhurst Illinois starting fall 2011.

Greg Dahle, (Ph.D. 2009, advisor Jason Grabosky)has accepted a position at West Virginia University as an Assistant Professor of Arboriculture in the Division of Forest & Natural Resources.

Greg Dahle, Ph.D. 2009, and advisor **Jason Grabosky**, report the following publications:

- **Dahle G. A., Grabosky J.**, 2010. Allometric patterns in *Acer platanoides* (Aceraceae) branches. *Trees Structure Function* 24:321-326 DOI 10.1007/s00468-009-0401-5

- **Dahle, G.A. and J.C. Grabosky.** 2010. Variation in Modulus of Elasticity (E) along *Acer platanoides* L. (Aceraceae) branches. *Urban Forestry Urban Greening*, 9(2010):227-233. doi:10.1016/j.ufug2010.01.004
- **Dahle, Gregory. and Jason Grabosky.** 2010. Can branch slenderness be used in arboricultural practice. *Arborist News* 19:28-31

Frank Gallagher, (Ph.D. 2009, advisor Jason Grabosky) reports the following publication with E&E faculty **Claus Holzapfel** and advisor **Jason Grabosky**:

- **Gallagher, F.J., Pechmann, I. Holzapfel, C., Grabosky, J.** 2011. Altered Vegetative Assemblage Trajectories within an Urban Brownfield. *Environmental Pollution*. doi:10.1016/j.envpol.2011.02.007

Frank Gallagher also reports:

- Gallagher, Frank, "The Places You Live: Bayonne N.J.", *Orion*, November/December, 2010,17.

Amy Karpati (PhD, 2010, advisor Steven Handel) has been appointed Director of Conservation Science for the Pinelands Preservation Alliance.

Bill Landesman, (Ph.D. 2009, advisor John Dighton) reports a publication:

- Landesman, W.J., Treonis, A.M and Dighton, J. 2011. Effects of a one-year rainfall manipulation on soil nematode abundances and community composition. *Pedobiologia International Journal of Soil Biology*. 2010. doi:10.1016/j.pedobi.2010.10.002

