



Notes from the Field

October 2008

Volume 5 No 2

Don't forget to come to the Ecology Minisymposium on Dec 2nd from 4 to 7!

Frank A. Andersen Ecology Travel Award for Graduate Students

-- JB Moon

Dr. Alan Andersen, an alumnus in Biophysics from Penn State and the current Director of Cosmetic Ingredient Review, recently donated funds to launch the travel award that we had been trying to establish over the past year. He did this in memory of his late father Franklin A. Andersen. In his letter of donation Dr. Anderson wrote, "My father long recognized the value of graduate education and supported me in my degree program at Penn State. He would have understood and applauded an effort that would allow Ecology Program students to participate at scientific meetings and 'strut their stuff' as he would have phrased it." These funds will help our growing program by providing the opportunity to attend engaging meetings and workshops that might otherwise be missed due to financial constraints. On behalf of the Ecology student body, I would like to thank Dr. Alan Andersen and his mother Audrey A. Andersen for this contribution and wonderful opportunity. We also thank Dr. Bob Booz, for his time and commitment in making our aspirations for this award a reality. Details for the first travel award submission and deadline will follow in the coming months. There will also be future opportunities for faculty and alumni to contribute to this fund. So in memory of Mr. Franklin Andersen, "Strut [your] stuff!" Ecology Students!

Ecology Gift Fund

--Dr. Eissenstat

We have now established a gift fund that the Ecology Program can use to support its various functions including stipend support, social functions and seminar speakers. As many of you know, our funds from the Graduate School are quite limited. Donations to this fund can allow us to continue to enhance our commitment to providing a quality graduate education for our students. If you are interested in contributing to this fund, please contact the Ecology Program Chair, David Eissenstat.

ESA Annual Meeting 2008: Milwaukee, WI

--Dan Grear



The PSU Ecology program sent nine grad students and post-docs by van and car to attend this year's ESA meeting in Milwaukee, WI. We were joined by many other Penn State students, post-docs, and faculty who chose to fly-over and miss the 12+ hours of interstate scenery through western Pennsylvania, Ohio, Indiana, Chicago and southern Wisconsin. Milwaukee exceeded everyone's expectation as a host city and served as a great location to meet with old friends, consume beer and sausage, and do some science too. Highlights in Milwaukee included brewery tours, gorgeous views of Lake Michigan from Milwaukee's art

museum, several nice neighborhoods within walking distance, and decadent between-session coffee.

This year's conference theme was "Enhancing Ecological Thought by Linking Research and Education" and provided many thought-provoking symposia and contributed talk sessions. Topics traversed all corners of the ecological landscape, with Penn State students presenting in sessions such as, *soil ecology, modeling, seed production, dispersal, and predation*, just to name a few. I, for one, was impressed by the scope of topics covered at the meeting, as well as the breadth of subjects presented by Penn State Ecology students, researchers, and faculty.



Ecology students taking a break at ESA. From left: Rebekah Wagner, Angie Luis, Sarah Johnson, Randa Jabbour, Glenna Malcolm and Lawrence Chien

Penn State Graduate Student Presentations Included:

Oral presentations:

Jennie Lavine & colleagues. Coexistence through age-structured or temporal niche segregation in *Bordatella pertusis* and *B parapertusis*.

Marc Goebel & colleagues. Effects of root-order on fine root decomposition.

Randa Jabbour & Mary Barbercheck. Habitat complexity effects on nematode movement in maize.

Katie Marchetto & colleagues. The effect of temperature and humidity on seed release in the invasive species *Carduus nutans* and *Carduus acanthoides*.

Eric Nord & Jonathan Lynch. Phenological tug of war: Low phosphorus availability delays and elevated CO₂ accelerates phenology in *Arabidopsis thaliana*.

Kerri Mauck & colleagues. Virus-induced changes in host chemistry: Do plant viruses manipulate insect vectors through a shared host?

Angie Luis & colleagues. The effect of seasonality, climate, and density on hantavirus dynamics in the deer mouse in Montana.

Poster presentations:

Rui Zhang & Katriona Shea. The effect of projected climate change on invasive *Carduus nutans* and *Carduus acanthoides*

Dan Grear & colleagues. Testosterone drives parasite exposure and transmission potential in wild mice.

Kevin Mueller & colleagues. Relationships among tree leaf and root traits and their influence on soil biogeochemical properties and biotic communities.

Sarah Johnson & Marc Abrams. Age class, longevity, and growth rate relationships: Evidence for increasing growth in both young and old trees.

Lawrence Chien. Exploratory analysis of the traveling patterns of individuals testing for HIV in Pennsylvania.

Welcome, New Graduate Students!

Yim Petprakob: My name is Krittika Petprakob. You can call me Yim (It's a Thai word means smile). I'm from Thailand, so everything here is new for me. If there is anything you think I should know, please don't hesitate to advise me. This fall I'm going to work in Prof. Alan Taylor's lab and then rotate to Prof. Roger Koide's lab in spring. I'm looking forward to seeing you all!



Laura Russo: I'm one of Katriona Shea's new students. I plan on studying the impact of invasive species on native ecosystems. I'm willing to work with any system that will



answer my questions, but (subjectively) I adore birds. I hope my research will be primarily in the field because I love being outdoors, but it will likely have a modelling component.

Christy Rollinson: I grew up in the Appalachians in Virginia (the Alleghenies) and did my undergrad at Oberlin College in Ohio. At PSU, I'll be working with Margot Kaye on a forest regeneration under climate change simulation experiment and have academic/professional interests in forest succession, conservation, and sustainable management. In my free time, I like to go hiking, backpacking, bicycling, cook, and play piano.



Allison Madison: Originally from northwest Wisconsin, I ventured further north after college to call Finland, MN my home for a year. I backpacked, rock-climbed, skied, canoed, ran, and swam along the shores of Lake Superior when I wasn't teaching at Wolf Ridge Environmental Learning Center. I look forward to continuing similar pursuits in PA in addition to beginning an interdisciplinary land use research project with Jason Kaye. P.S. I LOVE to dance: international folk, ballroom, swing, random crazy dances, whatever :)



Britta Teller: My name is Brittany Teller but I go by Britta (like the water filter). I just recently graduated from Washington University in St. Louis and I'll be starting my PhD in the Shea lab this fall working in population ecology. I love animals but will be working with plants, and most likely the invasive kind (which I love to hate).



Chris Fernandez: My name is Chris Fernandez and I am a native Californian who has been



living in Philadelphia for the past year. I have a broad interest in plant ecology but am principally interested in the ecology of ectomycorrhizae at the community level. My extracurricular activities include: backpacking, hiking, cycling, craft beer, ☐, and finally the cultivation and consumption of chilies.

Jason Hill: I am originally from Iowa, having reached PSU via the Universities of Montana (B.S., Wildlife Biology) and Connecticut (M.S., Ecology and Evolutionary Biology). I'm broadly interested in animal movement, population connectedness, and anthropogenic impacts on avian populations, as well as endurance events, soccer, and creating art and music.



Larry York: I'm from the border of Appalachia in Kentucky, having a hard time getting away from these mountains. I study ecological interactions between roots, including niche differentiation, facilitation, and root allocation plasticity due to the identity of neighboring roots and other environmental factors. I enjoy being outside, talking politics, listening to music, and reading books about science and sociology.



Jay Osborne: I graduated with a B.A. Honors in Biology from Pepperdine University and was a member of the Spanish Honor Society. I will be working with Dave Eissenstat at the Shale Hills Critical Zone Observatory towards my Ph.D. in Ecology, and am specifically interested in plant physiological ecology. I'm also interested in politics, listening to music, and reading books about science and sociology.



Welcome, New Faculty Members!

Dr. Beth Shapiro's

research focuses on a wide range of evolutionary and ecological questions, mostly involving the application of phylogenetic and population genetic tools to try to uncover the dynamics of the molecular evolutionary process within populations and between species. A common theme to her research is that it involves some aspect of time, either using historical information from RNA viruses or ancient DNA to identify periods of population growth, decline or turnover, and integrating these analyses with climate and environmental data (ancient DNA) or epidemiological records (RNA viruses) to try to identify the causative factors behind the observed changes in genetic diversity.



Dr. Tracy Langkilde is broadly interested in how species within communities are able to co-exist, and how these relationships shift over time and in response to changes in the environment.



She is primarily a field ecologist, and her research incorporates aspects of population, community, behavioral, and evolutionary ecology. She primarily uses reptilian systems; however, her work has taken her across the world from Australia to North America, exposing her to both temperate and tropical systems, and to a range of taxa within both aquatic and terrestrial environments. She comes to us after completing a postdoc in Forestry and Environmental Studies at Yale University. She primarily uses reptilian systems; however, her work has exposed her to both temperate and tropical systems, and to a range of taxa within both aquatic and terrestrial environments. She did her undergraduate work in Australia at the James Cook University, and her PhD at the

University of Sydney. She comes to us after completing a postdoc in Forestry and Environmental Studies at Yale University.

Dr. Drohan is a soil scientist

who conducts research on the changes in soil physical, chemical and mineralogical properties due to disturbance and how ecosystems change in response; soil genesis, classification, and mapping; problematic soil physical and chemical properties in urban environments and their management; land use assessment based on soils. He received his PhD in soil science from Penn State in 2000, and comes to us from the Pine Lake Institute for Environmental and Sustainability Studies at Hartwick College.



Dr. Margot Kaye's research

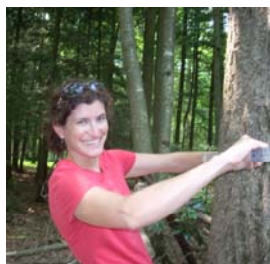
involves vegetation dynamics, dendrochronology, disturbance history, and environmental change. Recent projects include an experiment to study the effects of climate change on tree regeneration in the Northeast and a reconstruction of paleoecological and paleoclimatological records to determine the role of climate variation on the expansion of pine woodlands into the central Great Plains. She is also interested in the impacts of non-native invasive woody species in forested ecosystems in Pennsylvania and reconstructing the structure and function of old-growth forests in the eastern US. She has worked on the dynamics of quaking aspen and its ability to persist despite fire suppression and herbivory. In addition, she also has been involved in projects studying the responses of ponderosa pine forests to fire suppression and bark beetle outbreaks as well as the dynamics of comparable pine forests in the Iberian Peninsula that have persisted through millennia of intensive human land use.



Dr. Mark Mescher's research focuses on the role of plant volatiles in mediating ecological and evolutionary interactions among plants, insects and pathogens. He is mainly interested in chemical ecology, disease ecology, co-evolution and tritrophic interactions, and is also involved in the Center for Chemical Ecology. Dr. Mescher received his PhD at the University of Georgia, and held a research position at Penn State prior to his current appointment.



Erica Smithwick is interested in the interface of landscape and ecosystem ecology, focusing on the influence of spatial pattern on ecosystem function. She is currently working on



the consequences of fire-generated spatial patterns on soil biogeochemistry, microbial communities, and carbon cycling, and does research in Yellowstone National Park and Alaska on the consequences of severe fire. She is also working to forecast the effects of climate change scenarios on carbon and nitrogen cycles, demonstrating that extensive disturbances create heterogeneity that modify how forests respond to altered climate change at landscape scales. For more information, please see her lab website, at <http://www.geog.psu.edu/leaps>.

Susan Parks' primary research interest is in bioacoustics, integrating the fields of biological oceanography, behavioral ecology and physiology to address questions related to acoustic communication. Her research interests include studying the use of sound for communication, hearing abilities, and the impact of noise on



both sound production and reception. Her current research is focused on the use of sound by both North Atlantic and Southern right whales; studying behavioral aspects of sound production, perceptual abilities and impacts of noise on acoustic communication.

Paul Bartell's research focuses on the regulation of biological clocks in birds at the system level. He uses behavioral, molecular, and electrophysiological techniques to understand the neural and endocrine mechanisms by which



these daily clocks and yearly calendars control the temporal organization of behaviors and life history stages. He has recently determined that biological clocks temporally organize pre-migratory and migratory behaviors, and is currently seeking to identify the changes in protein and gene expression that allow normally diurnal birds to become nocturnally active during migration. He is also working to identify the signals that the biological clock transmits, amplifies or gates in timing reproductive development and maintaining reproductive viability.

Victoria Braithwaite is interested in evolutionary ecology and animal cognition, specifically in combining information concerning an animal's sensory and neural capabilities with



information about its evolution and its environment to understand how and why animals vary in their cognitive abilities and behavior. She is specifically focusing on the role of predation pressures and other ecological variables on variation in learning and memory ability in different natural populations. She also has two further research interests; one is investigating the effects of variable rearing environments on the development of behavior in hatchery

reared fish to promote behavioral flexibility and increase survival in hatchery reared fish that are released into the wild, and the second project addresses pain perception, fear and suffering in fish.

Jean Pierce – Please welcome the new assistant to the Ecology Program! Jean graduated Magna Cum Laude from University of Massachusetts at Amherst, double majoring in psychology and zoology in 1990 and then went on to get a PhD in Biomedical Science (Neuroscience) at the University of Connecticut (1996). The last 10 yrs she has been out of academia as she has been raising her two children. She has been looking to get “slowly” back into the workforce and so will be working mornings three days a week similar to Mary.

And in other news...

Congratulations to Andy Wilson, who is the recipient of ENRI’s outstanding graduate student award!

Congratulations to Ruscena Wiederholt, who was awarded Penn State’s academic computing fellowship!

Congratulations to Nick Polato, who was recently awarded an NSF graduate fellowship!

Congratulations to Kevin Mueller, who was awarded an NSF international Dissertation Improvement proposal entitled: Using ¹³C NMR Spectroscopy to Study the Influence of Litter Chemistry on Soil Organic Matter Formation in Forests. The award provides Kevin Funds to collect samples in common garden research plots in southwestern Poland and conduct research for 3 months in Dr. Ingrid Kogel-Knabner’s lab at the Technical University of Munich, Germany, where he will use 2 highly-specialized techniques (physical soil fractionation and ¹³C NMR spectroscopy) to examine how litter chemistry affects soil organic matter formation. Kevin was also a major contributor to a proposal recently funded by NSF Ecosystem Program to support his

research entitled “The Influence of Tree Species on Soil Organic Matter Dynamics in Temperate Forests”.

Congratulations to Dr. Peter Hudson, who was recently elected to the Royal Society, the national academy of science of the UK and the Commonwealth!

Congratulations to Dr. Consuelo De Moraes, associate professor of entomology, who is the first recipient of the Early Career Innovation Award from the Entomological Society of America (ESA). The award honors young professionals working in entomology who have demonstrated innovation through contributions within any area of specialization – research, teaching, extension, product development or public service. The award will be presented at the 2008 ESA Annual Meeting in Reno, Nev., on Nov. 16, 2008. A native Brazilian, De Moraes earned her B.Sc. in ecology from the Universidade Federal de Minas Gerais. She received her doctorate in entomology from the University of Georgia. De Moraes’ primary scientific interests are in understanding the critical roles of chemical communication in ecological interactions. She focuses on the role of plant volatiles in mediating interactions among plants and insects. De Moraes is active in teaching and outreach and is particularly committed to promoting the integration of minorities and women in science.

And a thank you...

To Andy Wilson, who did a wonderful job as the graduate service assistant for 2007-2008. Andy has been extraordinarily dedicated to the Ecology program, through his involvement with the EGSO for several years in a variety of different positions, by proposing and planning a very successful seminar series last spring on the theme of Sustainable Ecology, and for consistently being available for a helping hand to other students.

And to Mary Hudson, who has recently left her position as the Ecology Service Assistant. We’ll all miss Mary’s knowledge, friendliness, and helpfulness to all of the students in the program, and we wish her the best of luck in her new position! Thank you, Andy and Mary!