

Notes

ne biannual newsletter of the Intercollege Graduate Degree Program in Ecology at The Pennsylvania State University

from

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Field

Fall Semester

2012

Announcing the Ecology Spring Seminar Series: Coping with Global Environmental Change

By Jenny Tennessen & Gail McCormick

Our planet is currently undergoing rapid changes that are predicted to have wide-ranging consequences for ecological processes. Ecological units face a variety of stressors such as drought, changing climate, emerging disease, increased frequency/magnitude of disturbance, and increased frequency of contact with novel predators or competitors. Research and media often highlight the negative ecological effects of global environmental change, suggesting ecological systems are static units that experience phenomena but do not respond. Although some systems may be unable to persist under novel conditions without human intervention, abundant data is emerging that shows that others can respond and adapt to changing conditions over relatively short time-scales. For example, over the past 130 years the phenology of 10 species of wild bees, among the most important pollinators worldwide, has changed at a pace consistent with phenological changes in flowering of host plants¹. Poison ivy is thriving and becoming more toxic, and certain strains of soybeans and rice are growing faster in response to increases in atmospheric CO₂ levels². Native lizards are rapidly acquiring novel behavioral strategies and altered morphology to avoid potentially lethal attacks by invasive ants³. Whales are calling louder in noisy environments in order to be heard above the sounds from commercial ships and tourist vessels^{4,5}.

Our spring 2013 graduate student-run seminar series we will explore the diverse ways that ecological units—from microbes to ecosystems—respond and adapt to global changes in the environment. We have lined up 12 speakers (to be revealed at the upcoming Ecology Mini-Symposium on December 3rd), whose exciting research programs highlight a diverse range of ecological responses to global environmental change. By hearing from experts that focus on mechanisms by which species can cope with environmental change, we hope to convey the multi-level resilience of some ecological systems and foster hope for our changing planet.

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2012 Andersen Award Reflections

Reflections on the 2012 Ecological Society of America Annual Meeting

By Christopher Fernandez

This past August, graduate students, post docs and faculty members from the Ecology Program at Penn State attended the Ecological Society of America (ESA) annual meeting, held this year in Portland, Oregon. This year's meeting had record attendance with nearly 5,000 ecologists making the pilgrimage to Portland. That's a lot of ecologists in one place. Usually while in an ESA host city, ecologists are readily identified from locals by their standard issue outdoor-performance-trailgarb and requisite pair of Chacos[®] (ecologists must be prepared for spontaneous fieldwork at all times). However, getting a positive ID this year proved to be significantly harder, as a large proportion of Portland's population apparently takes cues from the ecologist fashion handbook. Luckily, ESA still hands out those ultra-hip khaki-colored tote bags.

In addition to enjoying a new city and catching up with colleagues, the ESA annual meeting is a great opportunity for ecologists to share their research and reach a wide range of ecologists from around the world. This year with the help of the Andersen Travel Award, I was able to present some of my research examining the functional role of melanin, a polymer deposited in fungal cell walls, in an important and cosmopolitan ectomycorrhizal fungus, *Cenococcum geophilum*. Relative to macroscopic organisms, the functional traits of microbes and how they influence community structure is poorly understood. The distribution and dominance of *C. geophilum* in arid communities has always led investigators to draw conclusions about the species' ability to tolerate low water availability but the underlying mechanism responsible has not been clear. With this work we were able to clearly demonstrate that the production of melanin in *C. geophilum* is a trait that is important in the tolerance or reduced water potential. Having the opportunity to share this work with the many prominent microbial ecologists, mycorrhizologists (I didn't make this word up), and root ecologists in the audience was a very exciting and rewarding experience.

I would like to thank Dr. Frank A. Andersen and the Andersen Travel Award Committee for making this opportunity a possibility.

Reflections on the 2012 Animal Behavior Society Meeting

By Lindsey Swierk

The 2012 Animal Behavior Society (ABS) meeting was held in early June at the University of New Mexico —otherwise known as the surface of the sun. Albuquerque, New Mexico was a nevertheless a great venue for the 49th annual meeting, nestled between the Rio Grande River and the spectacular Sandia Mountains. The other attendees and myself were able to eat our fill of *real* tortillas, sopapillas, and chile relleno around town, and had some near wildfire-dodging experiences while hiking before the start of the conference.

Attending the ABS meeting was the perfect opportunity to learn about the newest advancements in a cross-section of topics: animal communication, life history evolution, parental care, and neuroendocrine mechanisms, to name a few. For me, the real highlights this year were the symposia. During an NSF-funded symposium on Behavioral Plasticity and Evolution, discussions focused on how phenotypic plasticity over evolutionary history may affect future generations of a population, and some new insights regarding how plasticity may interact with spatial and temporal variation in sexual selection. And prior to another symposium, Sexual Selection in the Neotropics, I hadn't realized the extent to which some typical sexual selection paradigms fail to "match up" with results from temperate regions. This symposium encouraged us to consider how tropical climate and resource distribution may dramatically alter mating systems and strength of selection.

During a session on sexual selection and conflict, I presented results from my most recent project regarding how male competition may indirectly impact female fitness. I was pleased (though intimidated) to discover that my talk was standingroom only. Afterwards, I got some great feedback and reconnected with other researchers I hadn't seen in a while. The week concluded with an amusing talk by Mary Jane West -Eberhard on her speculations on the evolutionary origins of human obesity, concluding with a simple, memorable reminder: "If you're interested in the evolution of behavior, really *look* at behavior—in the field, in every stage of an organism's life. That'll tell you what's really going on."

I would like to thank Frank A. Andersen and the Andersen Travel Award Committee for making possible this exceptional opportunity.



Biology Behind Bars

By Brad Carlson

Six days earlier, I was in front of a class of junior and senior biology students. I was struggling to keep their attention. It felt impossible to get them to respond to simple questions, and, most importantly, to engage the subject matter by asking their own questions. While this was certainly partly my fault as a guest lecturer for taking on the exciting topic of statistics, it also speaks to a certain lack of enthusiasm on the part of many undergraduate students. You wouldn't guess that this was something they had been paying about \$17,000 a year to do (around as much as some of us graduate students make.)

I bring this up primarily to contrast it with my recent experience sharing ecology with a different segment of society: inmates at Centre County Correctional Facility. I had a connection with a member of the Pennsylvania Prison Society, an organization that advocates on behalf of prisoners and brings enriching experiences to them while they serve their sentences. They often set up workshops for the prisoners and after learning that a friend of mine, Jason Smith, was a graduate student in entomology, they decided an insect-themed presentation would be well-received. I'm very interested in arthropods too, so I decided to tag along and help Jason out. We compiled a presentation highlighting some of the most unusual and fascinating behaviors and interactions in insects and their relatives, including courtship, parental care, predation, pest control, and parasitoidism. We used a lot of clips of David Attenborough documentaries, as well as photographs, slides, and whatever additional video footage we had recorded ourselves.

After checking in, we were brought to a small classroom and set up our projector and computer. A couple guards then escorted into the room about 20 inmates who had voluntarily chosen to attend the advertised bug workshop (apparently the largest number that had ever signed up for a Prison Society program!) For the next hour, we talked about the functional purpose of UV fluorescence in scorpions, predatory fireflies that attract victims by mimicking their courtship flashes, and parental care by wolf spiders. The inmates were clearly very engaged: they asked spontaneous questions, pointed out insects that they had seen before, offered answers to questions we posed, shared looks of surprise and amazement, and cracked a few jokes. After we finished, many of them came up to thank us, chat a little about their interest in nature, page through field guides to figure out what other bugs they had seen, and even share some personal details about their lives. In summary, Jason and I agreed that they were easily the best group of individuals we've had the privilege of teaching.

This was an amazing and unexpected opportunity for science outreach. These were men that were genuinely appreciative of people taking time out of their day to come and share their love of science and living things. Moreover, we got the impression that they were hungry for experiences of surprise, wonder, and beauty. It reminded us of how lucky we are to be able to immerse ourselves in the complexity and diversity of living systems, and how innate the interest in our fellow creatures is in so many of us. When people aren't distracted by computer screens, concerns about grades, or the getting the right pvalue, they can truly appreciate how fascinating biology and ecology really are. I think that was part of what made this so much more fun than speaking to students, or even other scientists, and I encourage anyone with an interest in outreach and community education to investigate opportunities that may be available at correctional facilities.

New Ecology Student Introductions 2012



Christina Aiello

I grew up in Chicago where I completed my undergrad in Biology at Elmhurst College and participated in research on threatened turtle species in IL. After traveling and working various places as a technician, I

developed an intense love of the desert southwest and began working for the USGS in Nevada in 2010 on desert tortoise conservation. My field studies in Southern California have centered around the effect of the Fort Irwin National Training Center expansion and translocation of desert tortoise populations. I am pursuing a Ph.D. via collaboration with the USGS and Peter Hudson lab examining contact network disruption as a consequence of translocation with implications for the transmission of Mycoplasma in the desert tortoise. When I'm not chasing tortoises (or whatever other herp is around), you'll find me rock climbing or canyoneering, after which I'll whip up something complicated in the kitchen and wash it down with a homebrew.



Jen Berkebile

My name is Jen Berkebile. I am originally from Johnstown, PA, and have my B.S. in Biology from Duquesne University in Pittsburgh. I am studying ecology and working under Kim Steiner on the Emerald Ash Bor-

er. My outside interests include biking and reading.



Josh Brinks

I was born and raised in West Michigan, but I most recently came to Penn State from the Smithsonian Environmental Research Center (SERC) just outside of DC where I spent 2 years as the head techni-

cian in the Forest Ecology Lab. I currently work in the Applied Forest Ecology Lab (silviculture) with Dr. Eric Zenner. My research focuses on modeling large scale forest growth and structure utilizing ground based and LiDar measurements. In my spare time I enjoy cooking and rock music.



Kelly Brossman

I am from Carlisle, PA and obtained my BS in Biology from Penn State in May 2012. I am excited to be joining Dr. Tracy Langkilde's lab this fall as a Master's student. My research will focus on the predator-

induced defenses of newts. Outside of the lab, I enjoy cooking,

running, kayaking, gardening, and traveling.

Spencer Carran



I am originally from Ohio and completed my B.S. in applied math at the University of Miami. I will be working in Matt Ferrari's group studying disease dynamics and vaccination strategies. Outside of work, I enjoy

biking, playing chess, music, and science fiction.

🏾 Weile Chen



Hey all, my name is Weile Chen. After finished my master study at Peking University from China, I started my PhD study in Dave Eissenstat's lab. Generally speaking, my research topic focus on the relationship

between mycorrhizal fungi and plant roots, and their responses to soil nutrient variation. After school, I usually stay at home, watching TV and surfing the websites. However, I like watching sport games, especially the European football (which is called soccer here), and I am a big fan of the team Arsenal in the England Premier League.



Ethan Davis

I will be working with Dr. Erica Smithwick investigating the ecological impacts of our energy choices, with a likely focus on how bioenergy impacts greenhouse gas stocks and flows, land use

change, food, or other sustainability indicators. I am from Philadelphia originally, but most recently have been living in Boston working as an analyst for a national environmental group on issues related to energy and the environment. Prior to this, I was a research assistant at Dartmouth College, and a HERE Fellow and research assistant at Oak Ridge National Lab working for the DOE. The ORNL work was part of my master's thesis at Aalborg University in Denmark. I earned a BS from Cornell University with a focus on forest ecology and biogeochemistry. In between my Bachelors and Masters I walked from Mexico to Canada with my malamute on the Pacific Crest Trail working on farms along the way. I love traveling and backpacking including trips to Sri Lanka, South America, Central America, Europe, and the Appalachians; and have done some mountaineering including solo summits of Rainier and other US peaks, and Elbrus in Russia. When not dreaming of the Seven Summits, I like to cook (vegetarian), ice climb/climb, read, practice martial arts, play with my dog, and organic farming.



Joe Keller

I'm originally from Connecticut, and I didn't venture far as an undergraduate, earning by bachelor's degree from the University of Connecticut. Here at Penn State, I'll be pur-

suing a Ph.D under the guidance of Dr. Katriona Shea. I'm interested in studying plant invasions and biological control. In my free time, I like to photograph tiny things outside and listen to good music.



Mackenzie Kessenich

I am from Manitowish Waters, WI and I studied Biology at Lawrence University in Appleton, WI for undergrad. I am pursuing a doctoral degree in Ecology and I am work-

ing in Kim Steiner's lab. In his lab, I will be researching (in general) the restoration of the American Chestnut and am interested in plant population Ecology and forest stand dynamics as well as conservation and restoration Ecology.



Shuang Liang

I am Shuang Liang from Beijing, China. I am working in Matthew Hurteau's Earth Systems Ecology Team to pursue a PhD degree. I will research on projecting forest ecosystem response to climate change, wildfire and

future management strategies using models. I am also interested in interdisciplinary research which can provide sciencebased information to policymakers. Hobbies: traveling, swimming, singing, movies.



Chad Nihranz

My name is Chad Nihranz and I am from Roseville, Michigan. I have my B.S. in Ecology & Evolutionary Biology and Spanish from The University of Michigan. I am currently pursuing a Ph.D. in Ecology while working

in Dr. Andy Stephenson's lab. My research interests include: 1) plant-herbivore interactions mediated through plant volatile emissions, 2) the effects of inbreeding on plant fitness, and 3) plantvulnerability to disease. Outside of academia I enjoy all outdoor activities, cooking, Spanish culture, and the cinema.



Wren Patton

My name is Wren Patton. I'm a PhD student from Corvallis, Oregon where I got an HBS in Fisheries & Wildlife Science and Biology and an HBA in International Studies at Ore-

gon State University. I'll be working in Dr. Victoria Braithwaite's lab on cognitive ecology. I'm particularly interested in the learning and decision-making processes in fish as well as understanding the cognitive basis of interspecies cooperation. I enjoy hiking, biking, ballroom dancing and reading as well as taking care of my rather enormous collection of houseplants.



Laura Radville

I'm originally from Massachusetts, where I went to Holy Cross for my bachelors degree in Studio Art and Biology, and I recently got my master's degree in Biology from the Uni-

versity of Rhode Island. I'll be working with

Dr. Dave Eissenstat on root phenology as it relates to climate change in Greenland. Outside of science, I love hiking, baking,

and painting.



Emilia Sola-Gracia

I am from the tropical island of Puerto Rico, graduated from the University of Rochester with a bachelor in science. My interest is in animal behavior focusing on parasite-host

interactions.Throughout my time in here I will be working with Dr.David Hughes and death grip fungus in the carpenter ant system. In my free time I enjoy taking pictures of nature.



Morgan Wiechmann

I am from Sleepy Hollow, IL and am pursuing a master's degree in ecology. I am a part of Matt Hurteau's lab (Earth's system ecology lab) where I will be looking at different forest managment treatments, such as pre-

scribed burns and thinning techniques, and their effect on carbon stocks. I also enjoy running and backpacking.

Announcing the EGSO Winter Retreat 2013

The Ecology Graduate Student Organization is having their annual winter retreat at Black Moshannon State Park on February 22-24 2013. All students, post-docs, faculty, friends and family are welcome to join in the festivities. A cabin with heat and furnishings has been reserved. Bring food & beverages , warm clothes, sleeping bags, and snow-sport equipment

(hopefully we get some snow by then).

Stay tuned for more information to come!



Tech Corner-Using Microsoft OneNote as an Electronic Lab Notebook

By Larry Matt York

You have probably seen OneNote while using Microsoft's Office Suite and just skipped over it without giving much thought to its function or capabilities. Recently, I decided to give it a try and figure out its applicability to my research workflow. Quickly, I realized its potential as an electronic lab notebook. If you are anything like me, you may find yourself struggling to make your digital life backwards compatible with paper records that have been the standard of scientific enterprise the past few hundred years. Experimental proposals, designs, data collection, statistics and manuscript writing are commonly done on the computer, so how can we easily keep track of this and also print the record at will?

I will briefly describe how OneNote can be used as a lab notebook and some of its key functions. First, keep each experiment as a separate notebook within One-Note and save that notebook in the same directory as the related experiment. Notebooks are organized with sections, pages and subpages. The first page could be "Background" where you give the reasoning for the experiment and any other pertinent information. Within a page you can make subpages that are shown as indented. You might include a literature review or notes from meetings as subpages under the "Background" page. Notebooks can also have sections, similar to the sections of a multiple subject paper notebook. I find sections useful for multiple experiments within a field season but it's really up to you. With these three levels of organization anybody should be able to do something sensible.

The ribbon toolbars of OneNote will be familiar to anybody who has used Office products but have some unique features. The "Home" ribbon has normal font operations and also the ability to add tags to a page and to search for tags. Tags are essentially searchable keywords used to relate different pages to one another. For example, I tag pages about using image analysis so I can find pages about that topic later. Some of the really useful features are found in the "Insert" toolbar. From here you can clip an area of your screen, add a picture, add a hyperlink, or attach a file. This last feature adds a link to a file on your drive that will open the file when clicked. Alternatively, the "File Printout" function can be used to display the contents of the file inside of the notebook. In other words, adding an Excel printout will render the spreadsheet. Most of these features also automatically insert the date and time. Pages will automatically expand by default which would be useful in a purely digital world, but for printing the page size should be set to letter and all contents fit within a page. The "Draw" toolbar allows freehand writing and drawing which is difficult with a mouse but easy with the use of a graphics tablet or digitizer. OneNote is available for Android and iOS devices. but those versions still lack features. It seems something like OneNote combined with a tablet would be the end goal for

those of us in the sciences. Other third party note-taking-applications are available and have the potential to serve a similar role, most notably Evernote, which is a free application that syncs across all platforms (Windows, Mac OSX, iOS, and Android) over the internet.

I hope this brief introduction may lead some of you to give electronic notebooks a try. OneNote is not perfect, but has solved two problems for me. I can now keep track of my experimental planning, communication, and digital files from one place. Also, I can print all this to satisfy any mandate to leave a hard copy to sit on my advisor's dusty shelf. Please visit the following web page on the subect for more information, a basic OneNote lab notebook file, and helpful OneNote tutorials.

http://plantscience.psu.edu/roots/ methods/computer/onenote



An example notebook showing sections along the top for two different experiments. On the right side are pages for a particular experiment. On this page we can see a drawing and a link to a relevant website. The fuller and more complete the notebook can be made the

Citizen Science: Monitoring Wildlife using Smartphone Technology

By Danielle Garneau

The goal of this citizen science project is to collect fine- and coarse-scale data on animal movement patterns around the globe. With the aid of mobile smart devices and opensource data sharing/storage repositories (Google's AppEngine), citizens can participate in a project well beyond the scope of traditional research endeavors. Since June, we have been observing real-time trends in wildlife sightings as a function of numerous factors including season, precipitation, surrounding habitat, road type, speed limit, and region. These wildlife reported sightings have resulted in regional hotspots illustrating biodiversity patterns. Animals logged as sightings have ranged from crayfish, to woodcock, coyote, alligator, armadillo, opossum, fisher, and fox squirrel to name a few. The importance of this cooperative research effort cannot be overstated, given current trends in habitat loss, fragmentation, and climate change.

In an attempt to grow my citizen science project, I am getting the word out about the 2 projects (RoadkillGarneau and Wildlife-BlitzGarneau) for the Epicollect smartphone app. These wildlife sighting projects can be logged using smartphones/iPads/iPod Touch (models w/ camera and GPS). In order to get started, one must download Epicollect from the App store (iPhone)/Google Play store (Android) onto these smart devices. Once downloaded my project forms RoadkillGarneau or WildlifeBlitzGarneau can be brought into the app as new project forms (case sensitive). For directions to install these projects on Epicollect, I would recommend visiting my website, where information about the project, screenshots of the data, and install instructions for iPhone/iPad/iPod Touches, as well as Android devices is located.

https://sites.google.com/site/daniellegarneau/ home/smartphone-apps-for-wildlifeobservations

Currently, the RoadkillGarneau project has logged wildlife road mortalities in 11 states (CO, FL, MA, MI, NC, NY, NH, OK, PA, TX, VT) totaling 220 individuals, representing 37 species. Concurrently, WildlifeBlitzGarneau has reported live wildlife sightings in 2 countries (US, Quebec Canada), 7 states (AK, FL, MA, NC, NY, SC, TX) totaling 128 individuals, representing 73 species.

When driving/hiking, animals can be logged using the NEW ENTRY option in the app, at which point participants are directed to click for a current GPS location, click on the camera icon to take a photo, and later fill out form questions all contained within the app. Once the entry is completed, one MUST SYNC the data to the epicollect server and a pushpin will be made live for viewing in the DISPLAY MAP menu option of the app. This SYNC step is really important and occurs in the upper right hand corner of the VIEW ENTRIES listing. If data are not SYNCed, then your device is the only place that animal sighting is viewed (not the global project). The devices also have an option to VIEW THE MAP (local-your entries, or globalanyone collecting on the project), serving as instant gratification for participating.

Additionally, in an attempt to leave no one out, I embedded some google forms, which can be accessed at the bottom of my webpage, to enable those without these smart devices to participate. The embedded form is associated with a google map below to facilitate viewing those reported sightings not on smart devices. In this situation, photos can be sent to me via email at dgarn001@gmail.com and GPS location can be derived from a google maps window outside of my website by zooming in on your sighting location and using the "What's here" option--> right click on location.

These projects blur the lines between research and pedagogy, as (RoadkillGarneau and WildlifeBlitzGarneau) have been used in courses at SUNY Plattsburgh as part of a 70 student Ecology course (mixed majors) and an upper-level Wildlife Ecology and Management course.

Participants can access project data on the server to download and analyze: http://epicollectserver.appspot.com/ project.html?name=RoadkillGarneau http://epicollectserver.appspot.com/ project.html?name=WildlifeBlitzGarneau

For my General Ecology class, I built a Bioblitz lab assignment around the Wildlife-BlitzGarneau app and had students spend the week in groups collecting live animal sightings. Later they submitted a powerpoint or word document analyzing their findings using graphs. In my Wildlife Ecology and Management class, I added a take-home test question, which included analyzing some aspect of the RoadkillGarneau data, and presenting these in graphical form. Many thoughtful data interpretations resulted and it was a great way to expose students to technology, get them outside, as well as crunching some numbers.

Currently, the participants are primarily myself, and current and former students from SUNY Plattsburgh, but I am hoping this exposure will generate some buzz and get some



Top: Representative species logged as road mortality in RoadkillGarneau **Bottom**: Screenshots of RoadkillGarneau project form questions from mobile smart devices.

of my fellow Penn Staters excited to try it for yourselves. Please share this information about the wildlife app citizen science project with your institutions, colleagues, Facebook friends, and family! The best way to share the info might be a brief summary sentence and then directing interested parties to my webpage which contains the majority of the above information.

I hope to see more pushpins on the map!

Danielle Garneau is an Assistant Professor of Environmental Science SUNY Plattsburgh and a Penn State Ecology alumnus Class of 2005

Recent Publications

- Brossman, K., Carlson, B., Swierk, L. and Langkilde, T. (2012) Aquatic tail size carries over to the terrestrial phase without impairing locomotion in adult eastern red-spotted newts (*Notophthalmus v. viridescens*). Can. J. Zoolog. *Accepted*.
- Cahoon, S.M.P., Sullivan P.F., Shaver G.R., Welker J.M., Post E. (2012). Interactions among shrub cover and the soil microcli mate may determine future Arctic carbon budgets. *Ecology Letters*, DOI: 10.1111/j.1461-0248.2012.01865.x.
- Campbell C., S. Yang, K. Shea, R. Albert. (2012) Topology of plant-pollinator networks that are vulnerable to collapse from species extinction Phys. Rev. E 86, 021924
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Fellowships, Awards, and Other Achievements

Denise Finney received the National Institute of Food and Agriculture (NIFA) pre-doctoral fellowship for my project entitled "Building Belowground Diversity with Cover Crops to Enhance Agroecosystem Resilience to Climate Change."

Lindsey Swierk was awarded the Ernst Mayer Fellowship from the Smithsonian Tropical Research Institute earlier this year

Aliana Briston received the Nina Federoff teaching award and was awarded a Pennsylvania Space Grant Consortium Graduate Research Fellowship

Franklin Egan received the EcoService Award from the Student Section of the Ecological Society of America & the Union of Concerned Scientists. Franklin also received a Student Travel Award from the Agroecology section of the Ecological Society of America. was an invited speaker in a Symposium session "Land Sparing or Land Sharing? Different Visions for Producing Enough Food while Preserving Ecosystems in a

Grants

Matthew Hurteau was awarded a USDA NIFA grant titled "Projecting climate change mitigation and adaptation in fire-prone forests under future climate change" co-PIs: Anthony Westerling, Tamara Wall, Christine Wiedinmyer, \$749,335 Tomás Carlo was awarded a NSF grant titled "Frugivory networks and community assembly rules during early tropical forest regeneration". 150,000. Changing World" at the 2012 ESA meeting in Portland. "Building multifunctional agricultural through the interplay of land sparing and land-sharing strategies."

Jenny Tennessen. E.O. Wilson Conservation Award, Animal Behavior Society titled "The impacts of novel sounds: acoustic competition between invasive and native species"

Anjel Helms won the President's Prize for Best Talk of her section at the Annual Meeting of the Entomological Society of America recently held in Knoxville, TN. "Perception of an insect semiochemical primes host-plant defenses."

Dave Eissenstat was awarded the Chinese Academy of Sciences Fellowship for Senior International Scientists

Jeff Kerby placed 3rd in the "Running of the Moskus" Half Marathon with a time of 1:39:46.7. **Sean Cahoon** participated but did not finish due to injury.

Recent Program Graduates

Big congratulations to all the Fall Semester Graduates!

Jason Hill, Ph.D. Luke McCormack, Ph.D. Franklin Egan, Ph.D. Cara Hotchkin, Ph.D. Jeffery Law, Ph.D. Steven Beri, M.S.



Ecology Gift Fund

The Intercollege Graduate Degree Program in Ecology has established a gift fund that the 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.

For more information about financially supporting the Ecology Program, please contact Dave Eissenstat, program Chair, dme9@psu.edu

Notes from the Field is edited by Christopher W. Fernandez