

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

August 2011

Previous newsletters may be found at:
<http://www-rci.rutgers.edu/~deenr/news.html>

In Memoriam

Dr. Joan Ehrenfeld, a member of the Department of Ecology, Evolution, and Natural Resources since 1996 passed away on June 24th after a hard-fought and courageous 14 month battle with leukemia. Joan was an integral part of the department and the E&E graduate program, teaching both undergraduate and graduate courses, serving on numerous departmental and graduate program committees and mentoring many undergraduate and graduate students and post-doctoral fellows over the years. Her boundless energy, her love of teaching and scholarship and her collegiality will be missed by all who knew her.



Welcome to the Incoming Ecology and Evolution Graduate Program Students of Fall 2011:

This fall finds us welcoming 14 students to the Ecology and Evolution Graduate Program: Once again they come from diverse backgrounds and plan to study diverse areas of ecology and evolution.

- **Joni Baumgarten** comes to us from Barnard where she received a degree in Environmental Science. Joni will be working with Steven Handel.
- **Molly Bindell** is a Rutgers undergraduate with a degree in English. After several undergraduate biology and ecology courses Molly decided to pursue her Ph.D. in the field advised by Ning Zhang.

- **Tracy Busse** has her BS in Genetic Biology from Purdue. She is joining the Debashish Bhattacharya lab.
- **Michael Gallagher** is also a Rutgers undergraduate. Mike received his degree in Ecology and Evolution from Cook College.
- **Tina Harrison's** undergraduate degree in Biology is from Dartmouth College. Tina will be joining the Rae Winfree lab where she has been working as a lab/field technician for the last year.
- **Joanna Jorge**, who will be joining the Rebecca Jordan lab, has a Biology degree from New Jersey City University.
- **Natalie Lemanski** has a Biology degree from the University of Maryland, College Park. Natalie will be in the Nina Fefferman lab.
- **Nicholas Lorusso** will be joining the Peter Morin lab. Nick's undergraduate degree in Biology is from St. Bonaventure University.
- **Taryn Pittfield**, also a Cook College Ecology and Evolution undergrad, will be working Joanna Burger. Taryn has been a lab technician in Joanna's lab for the past year.
- **Nicholas Pollock** recently completed his MS in Biology at Cal Polytech St. Luis Obispo. His undergrad degree in Environmental Biology is from SUNY College of Environmental Science and Forestry in Syracuse. Nick will be joining the Henry John-Alder lab.
- **Samantha Schwab** also has her undergraduate degree from Barnard College where she majored in Biology. She will working with Rick Lathrop.
- **Lauren Spitz** comes to E&E with an undergraduate degree in Environmental Science from Ithaca College. Lauren will be working with Lena Struwe.
- **James Vasslides** has both a Cook College Ecology and Natural Resource Management undergraduate degree and an MS in Ecology and Ecology from our program. He will be working with Olaf Jensen.
- **Paul Walberg**, who will be working with Peter Morin, has his undergraduate degree in Economics from UCLA, an MBA in Nonprofit Management from Yale and an MS from the Yale School of Forestry and Environmental Studies.

Presentations:

Ecological Society of America: Austin, Texas. August 8-12.

- **Faye Benjamin** (Ph.D. candidate in the Rae Winfree lab) presented: "*Pollination services from native bees: What scale matters?*" Benjamin, F and R Winfree
- **Frank Gallagher** presented: "*Allometric Relationships of *Betula populifolia* in a Naturally Assembled Urban Woodlot*". Co-authors: Dahl, G., Gallagher, F.J., Schafer, K, and Grabosky, J
- **Steven Handel** presented: "*Reforestation of a reclaimed landfill after 19 years – a long-term test of applied nucleation*" Handel, S., J.D. Corbin and G. Robinson.
- **Karlo Hock** (Post-doc in the Nina Fefferman lab) presented: "*Impact of individual behavioral decisions and interaction structure on the spread of infectious diseases in an ecosystem*" Hock, K. & Fefferman, N.H.

Lea Johnson (Ph.D. candidate in the Handel lab) presented: *"Long-term outcomes of urban forest restoration: Assessing trajectories in plant community ecology to improve environmental health."* Johnson, L.

- **Holly Vuong** (Ph.D. candidate in the Morin lab) presented: *Infection prevalence of two vector-borne zoonotic pathogens in the tick vectors across a gradient of reported human incidence rates.* Vuong, HB, D Fonseca, D Brisson and RS Ostfeld.
- **Elena Tartaglia** (Ph.D. candidate in the Handel lab) presented: *Flower foraging behavior in the nectar feeding moth Hemaris (Lepidoptera: Sphingidae), a mimic of Bombus (Hymenoptera: Apidae).* Tartaglia, ES and SN Handel.
- **Rachael Winfree** (Department of Entomology) presented: *"Pollinator community disassembly across land use gradients."* Winfree, R. and was co-author on *"Response diversity across bee species stabilizes pollination function."* D Cariveau and R Winfree. and *Complementary habitat use by wild bees in agro-natural landscapes,* Y Mandelik, R Winfree.

Other venues:

Wes Brooks, a Ph.D. candidate in Rebecca Jordan's lab, gave a presentation at the Dade Chapter of the Florida Native Plant Society Meeting. *"Why the future may not quite look like the past: the science and art of ecological restoration."* Talk given June 28th in Miami, FL.

Joanna Burger and **Michael Gochfeld** attended the "Mercury as a Global Pollutant" Conference in Halifax Nova Scotia and gave the following presentations:

- Risk and policy implications of selenium-mercury ratios: variability within and among species. Burger and Gochfeld.
- Selenium-Mercury interactions: mechanistic questions, molar ratios, and risk policy. Gochfeld, Burger and Meline Lemire:

Curtis Burkhalter, a Ph.D. student in the Julie Lockwood lab, gave two presentations this summer:

- The 129th AOU meeting in Jacksonville, FL on July 29th *"Conspecific attraction of a threatened grassland bird"* Burkhalter, C., and J. Lockwood
- Invited talk at the NJAES Sustainable Energy Work group meeting in Freehold NJ on July 22nd. *"Conspecific attraction: Using conservation biology to achieve ecological sustainability in a changing world"*. Burkhalter, C., and J. Lockwood

Josh Caplan, a post-doc in the Joan Ehrenfeld lab, presented a poster at the USDA Multi-Program Project Directors' Meeting/. Washington, DC

- *"Belowground competition: a mechanism to explain the invasiveness of exotic forest understory shrubs"*. Caplan JS, Ehrenfeld JG, Grabosky JC, Faillace CA

Siobain Duffy gave an invited seminar at Georgian Court University titled "Emerging RNA viruses" on April 27th .

Frank Gallagher, Ph.D. 2008 and Visiting Scholar in the Jason Grabosky lab, gave the following presentations:

- "How Ecosystem Service Markets Challenge the Public Trust" and "Focusing on Forests or Soybeans?" at the American Forest Foundation, Project Learning Tree, International Conference in Montgomery Texas on June 10.
- Growth of *Betula populifolia* Marsh. along a metal contamination gradient". International Society of Arboriculture Annual Conference, Sydney Australia. July 27.

Steven Handel has given the three following invited presentations:

- Festival of Ideas for New York City, New York. "Saturday in the Park with Steven." (public tour).
- 3rd Sustainable Raritan River Conference, New Brunswick, NJ. "Economic benefits of brownfield redevelopment and restoration ecology."
- Morristown National Historical Park, NJ. Public Hearing on a Vegetation Management Plan. "Impact of deer on forest structure and the landscape ecology."
- World Restoration Conference, Merida, Mexico. Symposium on ecological restoration in urban areas. (co-convener) "Dream and nightmares of urban restoration ecology."

Karlo Hock, a Post-doctoral fellow in Nina Fefferman's lab gave two presentations this summer:

- "Modeling the formation and maintenance of crayfish dominance hierarchies" Hock, K. & Huber, R. The Crustacean Society Summer Meeting, USA: June
- "Effects of behavioral decisions on performance of individuals and interaction structure of groups". Hock, K. & Fefferman, N.H. 7th ECEM (2011) - European Conference on Ecological Modelling, Italy:

Wayne Rossiter, a Ph.D. candidate in the Mike Sukhdeo lab, gave a presentation at the .the 86th Meeting of the American Society of Parasitologists in Anchorage, Alaska "Patterns in the distribution of parasite biomass in a riverine food web." W. Rossiter, M.V. Sukhdeo

Lena Struwe presented a talk at the Botany 2011 conference in St Louis on July 11 titled "Tropical *Fagraea* and *Tachia* (*Gentianaceae*) as potential sources of antimalarial treatments". Co-authors were Rocky Graziose, Stacy Brody, M. Sugumaran, Peter Smith, Patricio Rojas Ilya Raskin, and Adrian Pohlit, and this research team includes scientists from Brazil, Malaysia, South Africa, and USA.

Judy Weis, (Federated Department of Biology, Rutgers Newark/NJIT) was the keynote speaker at the Rhode Island Natural History Survey conference on coastal ponds and lagoons in late April.

Publications:

Ignacio (Nacho) Bartomeus, a post-doctoral fellow in the Rachael Winfree lab reports two publications:

- Bartomeus I., Sol, D., Pino J., Vicente, P., Font, X. (2011) Deconstructing the native-exotic richness relationship in plants. *Global Ecology and Biogeography* 00:000-000
- Sol, D., Griffin, AS., Bartomeus I., Boyce H. (2011) Exploring or Avoiding Novel Food Resources? The Novelty Conflict in an Invasive Bird. *PLoS ONE* 6(5): e19535

Siobain Duffy reports the the following publications:

- T.F.F. Ng, S. Duffy, E. Bixby, G.E Vallad, J.E. Polston, M. Breitbart. Exploring the diversity of plant viruses and their satellites using vector-enabled metagenomics on whiteflies. *PLoS One*. 6:e19050.
- H.S. Yoon, D.C. Price, R. Stepanauskas, V.D. Rajah, M.E. Sieracki, W.H. Wilson, E.C. Yang, S. Duffy, D. Bhattacharya. Single cell genomics reveals trophic interactions and evolutionary history of uncultured protists. *Science*
- A.L. Hicks and S. Duffy. Genus-specific substitution rate variability among picornaviruses. *Journal of Virology*. 85:7942-7947.

Inga La Puma has the following publications:

- Robert M. Scheller, Steve Van Tuyl, Kenneth L. Clark, John Hom, and Inga La Puma. Carbon Sequestration in the New Jersey Pine Barrens Under Different Scenarios of Fire Management, published online July 12, 2011, *Ecosystems*.
- Miao Z, Lathrop RG, Xu M, La Puma IP, Clark KL, Hom J, Skowronski N, Van Tuyl S (2011) Simulating and sensitivity analysis of carbon storage and fluxes in the New Jersey Pinelands, *Environmental Modeling and Software* 26(9).

The newly updated second edition of **Peter Morin's** textbook, "Community Ecology", was published by Wiley-Blackwell on August 15.

Romina Rader, a post-doctoral fellow in the Rae Winfree lab reports two publications:

- Rader, R, Edwards, W, Westcott, D, Cunningham, S, and Howlett, B. (2011). Pollen transport differs among taxa in a human-modified landscape: bees carry more viable pollen but flies travel further. *Diversity and Distributions* 17, 519-529
- Rader, R, Howlett, B, Cunningham, S, Westcott, D. and Edwards, W. (in press 2011) Spatial and temporal variation in pollinator effectiveness: Do unmanaged insects provide consistent pollination services to mass flowering crops? *Journal of Applied Ecology*.

Orin (Robbie) Robinson had the following publication:

- Robinson, O.J. and Dindo, J.J., 2011. Egg success, hatching success, and nest-site selection in Brown Pelicans, Gaillard Island, Alabama, USA. *The Wilson Journal of Ornithology*. Vol. 123. No. 2.

Judy Weis (Federated Department of Biology, Rutgers Newark/NJIT) reports the publication of the following with her co-authors. Allison Candelmo is an E&E alumnae.

- Living in a Contaminated Estuary: Behavioral Changes and Ecological Consequences for Five Species : Judith S. Weis, Lauren Bergey, Jessica Reichmuth, Allison Candelmo Source: *BioScience*, Vol. 61, No. 5 (May 2011), pp. 375-385

Student Achievements and Activities:

Faye Benjamin, a Ph.D candidate in the Rae Winfree lab, participated in the Rutgers Gardens Outreach Program for kids “Exploration Camp.” The children’s experiences and Faye’s contribution on pollinators in the garden can be seen at:

<http://www.youtube.com/rutgerstoday#p/u/1/jr7JhzYWcpk>

Wes Brooks, a Ph.D. candidate in the Rebecca Jordan lab, led a field trip on June 25th in Miami FL.:

- Dade Chapter of the Florida Native Plant Society Field Trip. “Kendall Indian Hammocks Park and Swamp Fern Hammock Experimental Restoration.” in

Lea Johnson, a Ph.D. candidate working with Steven Handel, was awarded a Travel Grant from the Urban Ecosystems Ecology Section of the Ecological Society of America for travel to the Ecological Society of America meeting in Austin, TX.

Alicia Shenko, a Ph.D. candidate working with Rebecca Jordan, has accepted a position as Lecturer of Animal Biotechnology and Conservation for Delaware Valley College, Doylestown PA. Her primary teaching responsibilities are animal behavior, wildlife management, and mammalogy.

Maria Stanko, Ph.D candidate in Peter Morin’s lab, was an invited faculty member for the summer 2011 Organization of Tropical Studies (OTS)-Duke Undergraduate Study Abroad Program Fundamentals of Tropical Biology course. As part of her participation in the course, Maria gave a lecture on pollination ecology.

Grants:

Ravit Golan-Duncan received an National Science Foundation CAREER award for 2011- 2016 “Investigating Core Issues in Learning Progressions Research” \$ 850, 132

Molly MacLeod, a Ph.D. student advised by Rae Winfree, received the Garden Club of America Caroline Thorn Kissel summer environmental studies scholarship for \$2000.

Linda Rohleder, Ph.D. candidate in Claus Holzapfel’s lab, received a \$5,000 grant from the EASTER Foundation in support of the New York - New Jersey Trail Conference’s (NYNJTC) invasives species program. Linda led the creation of the NYNJTC Invasives Strike Force this year and has trained more than 100 volunteers to identify 14 invasive plants. These volunteers are mapping occurrences of these plants along more than 200 miles of trails in northern New Jersey and the lower Hudson Valley region of New York.

The data is being used to target eradication efforts by volunteer removal crews. This program builds upon a 2006-2009 research study conducted by the NYNJTC, Dr. Rebecca Jordan and Dr. Joan Ehrenfeld which studied the feasibility of using hikers as citizen scientists to collect data on invasive species along hiking trails.

Sona Mason, M.S. student in the Judy Weis lab, and Elena Tartaglia, Ph.D. candidate in the Steven Handel lab, assisted with some of the training. Denise Hewitt, Ph.D. candidate in Garrett Russell's lab, and Sona are participating as strike force volunteers.

Faculty Achievements, and Activities:



Ed Green was recently selected as a Fellow of the Society of American Foresters. This highlights the hybrid nature of his expertise, complementing his distinction as an elected Fellow of the American Statistical Association. [The Society of American Foresters](#) the world's largest professional society for foresters is the leading scientific organization representing the forestry profession in the United States.

Steven Handel was recently selected as the winner of the Society for Ecological Restoration's 2011 Theodore M. Sperry Award. This award honors individuals who have made significant advancements to the science or techniques used in restoration practices.



The letter of the award stated "The Society for Ecological Restoration (SER) recognizes you for your pioneering work in the restoration of urban areas such as the Fresh Kills landfill site on Staten Island, Brooklyn Bridge Park in New York City, Orange County Great Park in Irvine, and the areas surrounding Beijing's 2008 Olympic sites. Your work is an exemplary embodiment of this year's conference theme,

"Re-establishing the Link between Nature and Culture."

In June, **Rick Lathrop** visited Tibet as part of an academic interchange trip at the invitation of the Institute of Geographic Sciences and Natural Resources Research (IGSNRR) of the Chinese Academy of Science. He visited several ecological field research stations in the Lhasa valley and Tibetan plateau, as well as the IGSNRR headquarters in Beijing

Peter Morin has been on the road again....

- March 28-29 - Peter was part of an international panel of experts convened in Berlin by the DFG to evaluate proposals for a new integrative science center envisioned by the German Government.
- April 10-12 – Peter was a member of a review team formed to assess the University of Notre Dame’s Environmental Research Center (UNDERC).
- May 22-26 – Peter was an invited outside expert at a workshop on "The importance of trait variation for the dynamics of ecological systems", organized by Prof. Dr. Ursula Gaedke from the Institute of Biochemistry and Biology, Department Ecology & Ecosystem Modeling, University of Potsdam and funded by the DFG. Peter gave a talk titled: “Experimental Approaches to Studying Effects of Trait Plasticity on Population and Community Dynamics”. Afterwards, Peter met with members of the Ecology and Ecosystem Modeling Group led by Prof. Gaedke.

Peter Morin participated in a special symposium titled “The Mighty Reach of Community Ecology” honoring the retirement of eminent community ecologist and soil ecologist Professor Herman Verhoef at the Free University, Amsterdam, Netherlands on July 7. The title of Peter’s lead-off talk was “What Everyone Should Know About Community Ecology, and What We Still Don’t Know “.

Peter Morin presented a plenary lecture on July 25 at the sixth European Congress of Protistology held at the Free University in Berlin, Germany. The title of Peter’s lecture was “Protists as model organisms in studies of community ecology and ecosystem functioning.”

The **Morin lab** held its first “official” reunion on August 4-5, organized by Dr. Owen Petchey (University of Zurich) and Dr. Jeremy Fox (University of Calgary). There were two sessions of talks on Thursday and Friday. The Thursday session had talks by Owen Petchey, Dr. Sharon Lawler (University of California, Davis), Dr. Florence Hulot (Université Paris-Sud), and Dr. Christina Kaunzinger (RU, CURE). After that, participants enjoyed a catered lunch and a field trip led by Christina Kaunzinger to view restoration sites at Duke Farms, followed by a group dinner at Makeda. Friday’s talks were given by Jeremy Fox, Dr. Lin Jiang (Georgia Tech University), Dr. Jennifer Krumins (Montclair State University), Holly Vuong (RU), Dr. Ben Baiser (Harvard Forest), and Dr. Jennifer Price (Charlottesville).



Lunch out at Pad Thai was followed by preparation for an excellent BBQ at the Morin house. Additional alums and current lab members attending talks or visiting at the BBQ included Dr. Zac Long (University of North Carolina, Wilmington), Dr. Aabir Banerji (University of Zurich), Maria Stanko (NJIT), Cara Faillace (RU), Paul Walberg (RU), Dr. Ellen Pehek (NYC Parks), Liz Johnson (American Museum of Natural History), and Dr. Timon McPhearson (The New School, NYC). And of course, many spouses, children, and friends were in attendance as well. A grand time was had by all.

The American Littoral Society (ALS) <http://www.littoralsociety.org/> in partnership with the National Park Service (NPS) <http://www.nps.gov/> Rutgers University <http://www.rutgers.edu/> and the New Jersey Sea Grant Consortium <http://www.njmsc.org/> are organizing the first BioBlitz of Sandy Hook from 3pm Friday, September 16th through 3pm Saturday, September 17th 2011.
/*<http://nbii-nin.ciesin.columbia.edu/sandyhook/bioblitz/>*/

Lena Struwe will lead one of the botanical teams at the Sandy Hook Bioblitz inventorying the floristic biodiversity of Sandy Hook.



Michael Sukhdeo was selected by the American Society of Parasitologists to become Chief Editor of the *Journal of Parasitology*, the official outlet of the society for published works. His selection is indicative of his high standing among peers within his professional society.

Transitions:

The graduate program has been busy with Qualifying Exams, Preliminary Proposal Defenses and Degree Defenses.

Congratulations to the following on the successful defense of their Ph.D. Dissertation:

- **Aabir Banerji** May 5th, advisor Peter Morin
- **Joanne Harvey** June 8th, advisor Ed Green

Congratulations to the following on the successful defense of their Master's thesis:

- **Brian Johnson** May 24th, advisor Michael Sukhdeo

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

- **Andrea Egizi** May 18th, advisor Dina Fonseca
- **Ashley DeNegre** May 18th, advisor Nina Fefferman
- **Brad Greening** May 19th, advisor Nina Fefferman
- **Orin (Robbie) Robinson** May 11th, advisor Julie Lockwood
- **Suzanne Rose** August 22nd, advisor Kay Bidle

Congratulations to the following on the successful defense of their Preliminary Proposal::

- **Alicia Shenko** May 17th, advisor Rebecca Jordan
- **Jean Deo** May 6th, advisor Peter Morin

Alumni:

Robert Cox, Ph.D. 2006, advisor Henry John-Alder, has accepted a tenure track position as an assistant professor in the Department of Biology at the University of Virginia, Charlottesville.

Zac Long, Ph.D. 2004, advisor Peter Morin has the following publication:

- Food chain length and omnivory determine the stability of a marine subtidal food web. Zachary T. Long, John F. Bruno, J. Emmett Duffy. *Journal of Animal Ecology*. Article first published online: 20 JAN 2011 DOI: 10.1111/j.1365-2656.2010.01800.x

Matthew Kimball, Ph.D. 2008, advisor Ken Able, accepted a joint position of sorts in Jacksonville, Florida. His primary duties are as the Research Coordinator at the Guana-Tolomato-Matanzas National Estuarine Research Reserve (GTMNERR) and Matt also has an appointment as an Assistant Research Professor in the Biology Department at the University of North Florida.

Brooke Maslo, Ph.D. 2010, advisor Steven Handel, gave a talk entitled, "Defining Targets for Habitat Restoration: a Case Study at the Jersey Shore," at Society of Ecological Restoration (SER) 2011 World Conference on Ecological Restoration in Merida, Mexico on August 22.

Jennifer Price, Ph.D. 2004, advisor Peter Morin, has accepted a position as a research Associate at Virginia Tech in the Crop & Soil Environmental Science Department.

E&E Family continues to grow:

Ian Benjamin Kent born on May 5th to **Shannon Galbraith-Kent** (Ph.D. 2008, advisor Steven Handel) and Dan Kent. He's doing really well and has been sleeping through the night for a few of weeks now!

Wayne Rossiter and his wife Melissa welcomed daughter Lauren Abigail on July 25th. Lauren weighed 7lbs, 4oz and was 20.5 inches long. All reports are that Mom, Dad and Lauren are doing well.

Tim Zimmerman and his wife welcomed Autumn Zimmerman DeJong on July 5th at 6:01am at home after a great home birth. Autumn weighed 7lbs 5oz, was 19 inches long.

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