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

September thru November 2010

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

George Nieswand Retires after 45 Years at Rutgers.
George graduated from Rutgers as an undergraduate in 1964 with a BS in Agricultural Engineering, and the next year began his distinguished professional career here as an instructor in the NJ College of Agriculture and Environmental Sciences. He concluded his time here as a Professor II in The School of Environmental and Biological Sciences. During the intervening years, he chaired three different departments and served as Assistant, Associate, and Acting Dean of Cook College and the NJ Agricultural Experiment Station. His tenure here saw four university presidents, eleven deans or acting deans and three name changes on the Cook campus. George and his career were celebrated by colleagues, friends and family on November 9th at a reception given by the Department of Ecology, Evolution, and Natural Resources. A good time was shared by all as we strolled down memory lane.

Presentations:

Siobain Duffy gave an invited presentation at the 6th Noble Foundation Workshop in Virus Evolution (10/21-10/24) Ardmore Oklahoma. The title was "Novel single-stranded DNA viruses: metagenomic results from discovery to ecology."

Siobain Duffy also gave two presentations to student clubs:

- Virus Evolution (GH Cook Biochem and Microbiology club, 9/28)
- Geminiviruses: near, queer and crops' biggest fear (Designer Genes/Botanical Society of America student chapter joint event, 10/28)

Joan Ehrenfeld reports three presentations given in past months:

- **Ehrenfeld, Joan G., M.V. K.. Sukhdeo, K. Mylecraine, L..Shappell, B. J. Johnson and N. Tsipoursa.** 2010. Diversity of plants, birds, and mosquitoes in urban wetland patches: do correlations among diversity components affect potential dilution of disease risk for West Nile Virus? Ecological Society of America Annual Meeting, Pittsburgh, PA.

- **Shappell, Laura J., Joan G. Ehrenfeld, Michael Sukhdeo, Nellie Tsipoura**, Branden Johnson**, Brian Johnson, Leah Horowtiz, Kristin Mylecraine**. Diversity of Plants, Birds, and Mosquitoes in Urban Wetland Patches: Do correlations among diversity components affect potential dilution of disease risk for West Nile Virus? Society of Wetland Scientists Annual Meeting, Salt Lake City, UT
- **Johnson, Brian, Michael Sukhdeo** and **Joan Ehrenfeld**.2010. Impacts of urban wetlands on disease transmission. Ecological Society of America Annual Meeting, Pittsburgh, PA. (Poster)

Nina Fefferman has given three presentations this fall:

- Lectured at the DIMACS/MBI US - African BioMathematics Initiative: Advanced Study Institute on Conservation Biology, a two-week program for graduate students on mathematical modeling of topics in conservation biology offered at the Southern African Wildlife College, Limpopo, South Africa.
- An invited talk entitled "The Importance of Behavioral Dynamics on Disease Burden" at the DIMACS Workshop on Conservation Biology (an international meeting acting as a 'capstone event' following the Advanced Study Institute) at the Southern African Wildlife College, Limpopo, South Africa.
- An invited talk at the VisualAnalytics Workshop 2010 at Imperial College London, London, UK.

Steven Handel gave the 2010 "Willeke Frontiers in Environmental Science Distinguished Lecture" this month at Miami University, in Oxford, Ohio. He spoke on "Can we restore nature and its services to where we live and work?"
In the large crowd were three members of the Rutgers family: Profs. Henry Stevens and David Gorchov, former post-docs in the department, and Shannon Galbraith-Kent, who received her Ph.D from Rutgers in E&E in 2009.

Henry John-Alder gave an invited talk titled “Hormones and Performance: Insights from Natural History and Endocrine Experiments on Lizards” in the Department of Physiology from the Biosciences Institute of the University of São Paulo on 22nd, November, 2010.

Lena Struwe gave the Keynote lecture titled “Tracking Evolutionary Clades Across the Space-time Environmental Continuum, With an Example From Neotropical Gentianaceae” at The Fifth International Rubiaceae and Gentianales Conference: Biodiversity in the Light of Historical Information, 6-10 September 2010, Stockholm, Sweden. The presentation was co-authored with Einar Heiberg, **Scott Haag, Richard G. Lathrop,** and **Peter E. Smouse.**

Lena Struwe gave a lecture on Sept 2 for the Södertälje Garden Amateur Association (Sweden) on the "history of medicinal plants in ancient and modern gardens".

Publications:

Julian Avery, a Ph.D. candidate in the Lockwood lab, reports the following book chapter:

- Avery, J. D. and G. S. Keller. Short-eared Owl *(Asio flammeus*). In J.-L.E. Cartron (ed.), The Raptors of New Mexico. University of New Mexico Press, Albuquerque.

The Bhattacharya lab reports four publications:

- **Chan CX** and **Bhattacharya D** (2010) The origin of plastids. *Nature Education* 3(9):84.
- **Gross J** and **Bhattacharya D** (2010). Uniting sex and eukaryote origins in an emerging oxygenic world. *Biology Direct* 5:53.
- Boo SM, Kim HS, Shin W, Boo GH, Cho SM, Jo BY, Kim JH, Kim JH, Yang EC, Siver PA, Wolfe AP, **Bhattacharya D**, Andersen RA and Yoon HS (2010). Complex phylogeographic patterns in the freshwater alga Synura provide new insights into ubiquity vs. endemism in microbial eukaryotes. *Molecular Ecology* 19:4328-4338.
- Knudsen K, Reeb V, Westberg M, Srikantha R and **Bhattacharya D** (2010). Acarospora rosulata in Europe, North America and Asia. *The Lichenologist* 42(3): 291-296.

Joan Ehrenfeld and her advisee and 2009 E&E alumna **Emilie Stander** had two papers published:

- Stander, E. K. and J. G. Ehrenfeld. "Urban Riparian Function." Chapter in J. Aitkenhead-Peterson and A. Volder, eds*., Urban Ecosystem Ecology.* American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America (ASA-CSSA-SSSA), Madison, WI. Pp. 253-276.
- Ehrenfeld, J. G. and E. K. Stander. "Habitat Functions in Urban Riparian Zones." Chapter in J. Aitkenhead-Peterson and A. Volder, eds., *Urban Ecosystem Ecology*. ASA-CSSA-SSSA, Madison, WI. Pp. 103-118.

Joan Ehrenfeld also reports a sole-authored paper:

- Ehrenfeld, J. G. 2010. Ecosystem consequences of biological invasions*. Annual Review of Ecology, Evolution, and Systematics*. 41:59-80.

Alison Golinski, (Department of Animal Sciences) and a Ph.D. candidate in Henry John-Alder's lab in Animal Sciences had a paper accepted in *Hormones and Behavior*.

- "Male sexual behavior does not require elevated testosterone in a lizard (*Coleonyx elegans*, Eublepharidae)" A. Golinski, H. John-Alder & L. Kratochvil. As a point of information, Lukas Kratochvil is the lab's collaborator at Charles University in Prague. He was Alison's host while on a Fulbright Fellowship in Prague last year.

Robert Loveland, professor emeritus Department of Ecology, Evolution, and Natural Resources, reports the following two publications:

- Temporal and spatial patterns of organic carbon are linked to egg deposition by beach spawning horseshoe crabs (*Limulus polyphemus). Hydrobiologia* DOI 10.1007/s10750-010-0451-0 Mark L. Botton and Robert E. Loveland
- Developmental ecology of the American horseshoe crab *Limulus polyphemus*. Mark L. Botton, Richard A. Tankerskey, Robert E. Loveland. *Current Zoology* (formerly *Acta Zoologica Sinica*), 2010, 56(5): 550–562.

Cesar Rodriguez-Saona (Department of Entomology) published the following:

- Rodriguez-Saona, C., Musser, R.O., Vogel, H., Hum-Musser, S.M., and Thaler, J.S. 2010. Molecular, biochemical, and organismal analyses of tomato plants simultaneously attacked by herbivores from two different feeding guilds. *Journal of Chemical Ecology*. DOI: 10.1007/s10886-010-9854-7.

Marci Meixler has the following publication:

- Meixler, M. S**.** and M. B. Bain. 2010. Landscape scale assessment of stream channel and riparian habitat restoration needs. *Landscape and Ecological Engineering* 6(2):235-245.

Faculty Achievements and Activities:

Joanna Burger was made a fellow of the International Ornithological Union, at the annual meeting in Brazil.

Steven Handel has been named the new Editor-in-Chief of the journal *Ecological Restoration*, a quarterly published by the University of Wisconsin Press, starting January, 2011. This journal is dedicated to the restoration of natural communities, the ecological and cultural aspects of the discipline, including political, economic, and public policy issues. It is aimed at practitioners and public policy readers, in addition to restoration ecological scientists. Information is available at www.ecologicalrestoration.info. Steven is hoping to build better bridges between the ecological community and the design professions, in particular, so that ecological principles and actions are widely incorporating into new public spaces and infrastructure. Steven mentioned that members of the community that have projects/perspectives/concepts that advance ecological restoration should consider this journal for their outlet, and contact Steven (handel@aesop.rutgers.edu) with any questions.

Lena Struwe has started a 3-year term as Associate Editor for the journal *TAXON,* published by the International Association for Plant Taxonomists.

A student chapter at Rutgers University of the Botanical Society of America has been started at Rutgers University, and **Lena Struwe** serves as the faculty advisor for this campus club.

Grants:

Nina Fefferman (and her lab) received $100,000 of funding from the Department of Homeland Security as a new project through the Command, Control and Interoperability Center for Advanced Data Analysis (CCICADA) to model crowd behavior during emergency evacuations**.**

Ed Green and Co-PI's **Joan Ehrenfeld** and **Rick Lathrop** received a $100,000 from the Forest Service for two years to map soil organic carbon in the NJ coastal plain.

Steven Handel received a grant from the State of California to plan for the greening of public schoolyards and "schoolyard ecology" in Los Angeles. This is being done in conjunction with the landscape architect company Mia Lehrer Associates of Los Angeles.

Josh Kohut, Olaf Jensen(both of the Institute of Marine and Coastal Sciences) and **Steven Gray** (Ph.D. 2010, advisor Rebecca Jordan) received a NOAA Broad Agency Announcement Cooperative Research grant for their proposal titled "Integrating habitat models into commercial fishing practice for by-catch reduction." The grant is $217,089.

Julie Lockwood reports two grants:

- One from the National Geographic Society for a project titled "Parasites and the invasion success of hosts" $8,500 (with M. Hauber and P. Cassey)
- The second is from the Critical Ecosystems Science Initiative of the National Park Service. The proposal titled "Recovering small Cape Sable seaside sparrow subpopulations: the breeding and dispersal of sparrows in the eastern Everglades" was funded for $230,000.

Tim Zimmerman, Assistant Professor of Science Education, jointly appointed in the Dept. of Learning and Teaching (Graduate School of Education) and the Dept. of Marine and Coastal Sciences (SEBS/IMCS), was awarded a National Science Foundation, ITEST (Innovative Technology Experiences for Students and Teachers) grant. This $1,127,609 three-year grant was awarded to PI Zimmerman and co-PI Dr. James Slotta, University of Toronto, to conduct research on middle-school students' incoming technology skills and the connection of those skills to learning science. This project, in collaboration with scientists at IMCS, teachers at Camden City Public Schools, learning sciences researchers at RU's Graduate School of Education (Zimmerman), and educational technologists, will utilize cutting-edge ocean observing system data along with mobile technologies and real-world environmental challenges to explore new ways to improve science education.

Advisory Panels:

Judy Weis (Federated Department of Biology –Newark/NJIT) participated in a "consultation meeting" set up by UNEP (United Nations Environment Programme) to set priorities for the next version of GEO - the Global Environment Outlook. Judy also participated in the first meeting of the Science Advisory Board of NJDEP.

Student Awards, Achievements, and Activities:

Orion Weldon reported on the Run for the Woods. This year's run was organized by Orion Weldon and Colleen Conover. The Ecology and Evolution Graduate Student Association (EcoGSA) held their seventh annual 'Run for the Woods' on Oct. 2nd. 'Run for the Woods' is a benefit race to support EcoGSA's conservation grants and other events, and for the care of Helyar Woods by Rutgers Gardens. This year's race hosted 54 participants on a challenging and dynamic course through the woods and gardens. The weather could not have been better and naturally contributed to everyone's enjoyment of the event. Runners ranged in age from 15 to 74 and came from all over New Jersey and New York. The first place men's and women's finishers received a free pair of shoes from RoadRunner Sports, while subsequent winners won Road I.D bracelets or native plants. This year's first place women's finisher was Jill Remmier with a time of 23:11, and the first place men's finisher was Nacho Bartomeus with a time of 18:55. In all, the weather and participants made this year's 'Run for the Woods' the second most successful yet, and we look forward to many more.

Transitions:

Congratulations to **Nick Skowronski**, advisor Ming Xu, on the successful defense of his Ph.D. Dissertation on November 9, 2010.

Congratulations to **Jessica Cummings,** advisor Steven Handel, on the successful defense of her Master's Thesis on September 16, 2010.

Congratulations to **Paul Reiss,** advisor Ken Able on the successful completion of his Qualifying Exam on September 23, 2010.

Alumni:

Robert Cox, Ph.D. 2005, advisor Henry John-Alder, has been selected to win the 2011 Bartholomew Award in the Society for Comparative and Integrative Biology (http://sicb.org/newsletters/nl11-2010/dcpb.pdf). This is the society's highest award to a young and emerging investigator. Bob is currently a post-doc at Dartmouth College.

Greg Dahle, Ph.D. 2009, advisor Jason Grabosky, delivered the following presentation on August 27 at the Tree Biomechanics Symposium: "Can Changes in Branch Allometry and Material Properties Lead to Structurally Safe Branches?"

Frank Gallagher, Ph.D. 2008, advisor Jason Grabosky, reports the following publication and presentation:

- "The Places You Live: Bayonne N.J.", *Orion*, November/December, 2010,17.
- "From Blight to Bright Solutions for Remediation and Adaptive Re-use of Postindustrial Sites". Wolfram Hoefer, Frank Gallagher, Brian Clemson at the American Society of Landscape Architects Annual Conference in Washington, D.C, Sept 10, 2010

Steven Gray, Ph.D. 2010 advisor Rebecca Jordan, gave two presentations this fall:

- "Benefits and limitations to knowledge diversity in social-ecological decision-making" at the Human Dimensions of Fisheries and Wildlife Conference in Estes Park, CO.
- "Integrating stakeholder knowledge into the management of marine fisheries" at the NOAA NMFS Howard Marine Laboratory in Sandy Hook, NJ

Matt Kimball, Ph.D. 2008, advisor Ken able, reports the following publication:

- Evaluation of Long-Term Response of Intertidal Creek Nekton to *Phragmites australis* (Common Reed) Removal in Oligohaline Delaware Bay Salt Marshes Matthew E. Kimball, Kenneth W. Able and Thomas M. Grothues. *Restoration Ecology,* Vol. 18, No. 5, pp. 772–779

Brooke Maslo, Ph.D. 2010, advisor Steven Handel, presented a talk entitled "Modeling Foraging Behavior to Improve Beach Restoration Practice: a Case Study with Piping Plovers" at the Restore America's Estuaries 5th National Conference on Coastal and Estuarine Habitat Restoration in Galveston, TX, on November 17, 2010.

Brooke Maslo also co-authored a proposal with Kimberly Terwilliger, a Linden public school science teacher for a PSE&G Environmental Education Grant. Ms. Terwilliger was one of 9 recipients of this grant out of a total of 55 applicants. She will receive $3,335 to construct a rain garden at Soehl Middle School in Linden, NJ, and will integrate this project into the science curriculum for 6th, 7th, and 8th grade. Brooke is providing voluntary technical assistance for the project.
http://njtoday.net/2010/11/15/linden-school-teacher-wins-environmental-education-grant/

Jeanmaire Molina, Ph.D. 2009, advisor Lena Struwe, has accepted a tenure-track position in Long Island university (LIU Brooklyn campus). One of her first tasks is to help setup an MS program in Ecology & Evolution and develop a systematic botany course. Jean also reports some publications and presentations:

- Mather, K.*, J. Molina*, J. Flowers, S. Rubinstein, B. Rauh, A. Lawton-Rauh, A. Caicedo, K. McNally, M. D. Purugganan. Migration, isolation and hybridization in island crop populations: the case of Madagascar rice. *Molecular Ecology.* In press.
- Molina, J. Phylogeny and biogeography of Leeaceae (Vitales): Laurasian tertiary dispersals to Gondwanan continents [Poster presentation]. Frontiers in Plant Systematics. July 7-9, 2010. Beijing, China.

- Molina, J. (presenting author), J. Flowers, S. Rubinstein, et al. Identifying candidate domestication genes for rice crop improvement [Poster presentation]. Tropical biodiversity: surviving the food, energy and climate crisis. July 20-24, 2010. Bali, Indonesia.

Carl Safina, Ph.D. 1995, advisor Joanna Burger, was a finalist for the Indianapolis Prize for Wildlife Conservation.

Patricia Ramey, Ph.D. 2008, co-advisors Fred and Judy Grassle, has two new publications:

- Fiege, D., Ramey, P.A., Ebbe B. (2010) Diversity and distributional patterns of Polychaeta in the deep South Atlantic. *Deep-sea Research I* 57: 1329-1344
- Grassle, J.F., Ramey, P.A., and Petrecca, R.F. (2009) Temporal and spatial variation in infaunal community structure in physically active continental shelf sediments at a long-term ecosystem observatory (LEO-15) off New Jersey, USA. *Journal of Marine Research* 67: 869-897

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