# *Ecology & Evolution Graduate Program Newsletter*

## March 2016

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

**Thanks to everyone who have sent in material for the newsletter! Keep those emails, cards, and letters coming! Send your news and accomplishments to pjmorin@rci.rutgers.edu.**

# Congratulations!

**Olaf Jensen** has been elected as the next Director of the Graduate Program in Ecology and Evolution. Olaf will take over the reins on July 1. We'll all be looking forward to working with Olaf on graduate program development. Congratulations Olaf!

**Joan Bennett:**

Joan Bennett received the Waksman Teaching Award from the Society for Industrial Microbiology and Biotechnology!

Joan Bennett was also elected as Secretary of Division VI of the US National Academy of Sciences!

**Steven Handel:**

American Society of Landscape Architects, National Award of Honor for Communications (2015), for "*Ecological Restoration* journal: a new platform for dialogue between landscape architects and ecologists."

American Society of Landscape Architects, National Award of Honor for Research (2015), for "Restoration in urban parks: long-term tests of forest management." (w/L. R. Johnson).

**Lena Struwe:**

Lena Struwe was awarded the *Innovation in Plant Systematics Education Prize* from the American Society for Plant Taxonomists in July 2015.

Lena Struwe was also elected as a Fellow of the Linnean Society of London in Jan. 2016!

# Presentations:

**Steven Handel –**

**In 2015-**

Society of Wetland Scientists, Pacific Northwest Chapter Conference, Olympia, WA. “Impacts of sea level rise on urban coastal ecosystem services and a pilot study to restore salt marsh plant species to higher elevations.” (w/ A. Kleinbeck, M. Aronson, and M. Meixler).

Symposium on Ecosystem Resilience Research, Science and Resilience Institute at Jamaica Bay, New York City. “Research progress on Jamaica Bay fringing habitats.” (w/NPS research team), by invitation).

Invasive Species Summit: Challenges, Strategies, and Perspectives. New York Botanical Garden, Bronx, NY. "Restoration targets in a changing biotic landscape." (invited keynote address).

University of Pennsylvania, School of Design, Dept. of Landscape Architecture

**In 2016-**

American Society of Landscape Architects, NJ Chapter annual meeting. Atlantic City, NJ. “Ecological approaches to saving the Jersey shore.” (invited plenary lecture).

**From Natalie Howe in John Dighton’s Lab:**

Natalie Howe presented a poster on lichen responses to nitrogen deposition at the Annual Rutgers Microbiology Symposium, officially known as: "Microbiology at Rutgers University: Cultivating Traditions, Current Strength and New Frontiers" on February 25th and 26th, 2016.

Natalie also gave an invited talk/workshop on lichens of the Pinelands at the 27th Annual Pinelands Short Course at Stockton University on March 12th 2016.

**Malin Pinsky –**

2016 Can we “future proof” marine conservation planning? Ocean Sciences Meeting, New Orleans, LA.

2015 Impacts of climate velocity on coastal marine communities. Department of Biology, Temple University, Philadelphia, PA.

2015 Speed traps and speeding tickets: dynamics of fish and fisheries in a warming world. Climate and fisheries workshop, 2015 Pew Fellows Program in Marine Conservation Annual Meeting, Rio Grande, Puerto Rico.

2015 Evolutionary abilities and climate change in the sea. Ecological Society of America, Baltimore, MD.

**Lena Struwe -**

"Rooting out or rooting for weeds - natural and cultural histories of superevolutionary plants", Somerset Master Gardeners, NJ, 9 Dec 2015.

"The good, the bad, and the ugly facts about medicinal plants", Short Hills Garden Club, Short Hills, NJ, Nov 2015.

"Rooting out or rooting for weeds - natural and cultural histories of superevolutionary plants", University of Vermont, Burlington, VT, Oct 2015.

"Teaching in the age of distraction", University of Vermont, Burlington, VT, Oct 2015.

"Rooting out or rooting for weeds - natural and cultural histories of superevolutionary plants", Philadelphia Botanical Club, Philadelphia, PA, 28 May 2015.

"Rooting out or rooting for weeds - natural and cultural histories of superevolutionary plants", US Botanic Garden, Washington DC, 22 May 2015.

"The good, the bad, and the ugly facts about medicinal plants", Middlesex Master Gardener Program, East Brunswick, NJ, 19 May 2015.

“The good, the bad, and the ugly facts about medicinal plants”, Archibald S. Alexander Library, Rutgers University, New Brunswick, NJ, 6 May 2015.

“The good, the bad, and the ugly facts about medicinal plants”, Garden Club of Madison, Madison, NJ, 23 February 2015.

# Publications:

**From Joan Bennett –**

Hung, Richard, Samantha Lee and **Joan W. Bennett**. 2015. Fungal volatile organic compounds and their role in ecosystems. Appl Microbiol Biotechnol. DOI 10.1007/s00253-015-6494-4.

Pennerman K. K. , G. Yin, **J. W. Bennett**. 2015. Health effects of small volatile compounds from East Asian medicinal mushrooms. Mycobiology 43:9-13. doi: 10.5941/myco.2015.43.1.9

Lee, Samantha, R. Hung, M. Yap and **Joan W. Bennett**. 2015. Age matters: the effects of volatile organic compounds emitted by *Trichoderma atroviride* on plant growth. Arch. Microbiol. doi 10.1007/s00203-015-1104-5.

**Bennett, Joan W**. 2015. Silver linings: a personal memoir about Hurricane Katrina and fungal volatiles Frontiers in Microbiology doi: 10.3389/fmicb.2015.00206

Guohua Yin, Sally Padhi , Samantha Lee, Richard Hung, Guozhu Zhao and **Joan W. Bennett**. 2015. Effects of three volatile oxylipins on colony development in two species of fungi and on *Drosophila* larval metamorphosis. Current Microbiol. DOI 10.1007/s00284-015-0864-0

**Bennett, Joan W**. 2015. The fungi that ate my house. Science 349: 1018.

**Bennett, Joan W**. and Arati Inamdar. 2015. Are some volatile organic compounds (VOCs) mycotoxins? Toxins. 7: 1-20, doi:10.3390/toxins70x000x

**Bennett, J. W.** 2015. What is an antibiotic? *Antibiotics: Current Innovations and Future Trends*. Eds: Sergio Sánchez and Arnold L. Demain, pp. 1-18, Horizon Sci Press, Caister Acad. Press Poole, UK.

**From John Dighton –**

John's book *Fungi in Ecosystem Processes 2nd Edition*, has just come out. Published by CRC Press.

**From Ed Green and Alum Brian Clough –**

**Clough, B.J.** & **E.J. Green**. (2016) Comparing statistical approaches for selecting optimal models of stem volume in Loblolly Pine plantations. *Forest Science*. 62:9-17.

**Steven Handel –**

Handel, S.N. 2015. Not so novel ecosystems. Ecological Restoration 33:235-236.

Handel, S.N. 2015. On a woodland sedge. Ecological Restoration 33: 339-340.

Elmqvist, T., Setälä, H., Handel, S.N., van der Ploeg, S., Aronson, J., Blignaut, J.N., Gómez-Baggethun, E., Nowak, D.J., Kronenberg, J., and de Groot, R. 2015. Benefits of restoring ecosystem services in urban areas. Current Opinion in Environmental Sustainability 14:101-108.

Corbin, J.D., G.R. Robinson, L.F. Hafkemeyer, and S.N. Handel. 2016. A long-term evaluation of applied nucleation as a strategy to facilitate forest restoration. Ecological Applications 26:104-114.

Johnson L. R. and S. N. Handel. 2016. Restoration treatments in urban park forests drive long-term changes in vegetation trajectories. Ecological Applications 26: http://dx.doi.org/10.1890/14-2063.1

**Malin Pinsky –**

Kleisner, K. M, M. J. Fogarty, S. McGee, A. Barnett, P. Fratantoni, J. Greene, J. A. Hare, S. Lucy, C. McGuire, J. Odell, V. S. Saba, L. Smith, K. J. Weaver and M. L. Pinsky. (accepted) The effects of sub-regional climate velocity on the distribution and spatial extent of marine species assemblages. PLoS One

Thorson, J., M. L. Pinsky, and E. Ward. Model-based inference for estimating shifts in species distribution, area occupied, and center of gravity. (accepted) Methods in Ecology and Evolution

Fenichel, E. P., S. A. Levin, B. McCay, K. St. Martin, J. K. Abbott, M. L. Pinsky. (2016) Wealth reallocation and sustainability under climate change. Nature Climate Change 6: 237-244 doi: 10.1038/NCLIMATE2871

Cheung, W. W. L., T. L. Frölicher, R. M. Asch, M. C. Jones, M. L. Pinsky, G. Reygondeau, K. B. Rodgers, R. R. Rykaczewski, J. L. Sarmiento, C. Stock, and J. R. Watson. (2016) Building confidence in projections of the responses of living marine resources to climate change. ICES Journal of Marine Science doi: 10.1093/icesjms/fsv250

Fuller, E.*, E. Brush*, and M. L. Pinsky. (2015) The persistence of populations facing climate shifts and harvest. Ecosphere 6(9): 153 doi: 10.1890/ES14-00533.1

Pinsky, M. L. and D. Byler*. (2015) Fishing, fast growth, and climate variability increase the risk of collapse. Proceedings of the Royal Society B: Biological Sciences 282: 20151053 doi: 10.1098/rspb.2015.1053

**Lena Struwe –**

Lima, R. B. S, G. Frausin, S. Brody, L. Struwe, & A. M. Pohlit. 2015. Gentians used in South America as antimalarial agents. In: *The Gentianaceae - Volume 2: Biotechnology and Applications* (J. J. Rybczyński, M. R. Davey, & A. Mikuła, eds.), Springer Verlag, Heidelberg & New York.

Grant, J., L. Struwe, J. Pringle, B. von Hagen, J. Molina. & K. Lepis. 2015. Gentianaceae. In: Catálogo de plantas y líquenes de Colombia (R. Bernal, S.R. Gradstein, & M. Celis, eds.), Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá. http://catalogoplantascolombia.unal.edu.co

Poinar, G., Jr. & L. Struwe. 2016. An asterid flower from neotropical mid-Tertiary amber. Nature Plants. DOI: 10.1038/NPLANTS.2016.5

Mattera, R., T. Molnar, & L. Struwe. 2015. Cornus × elwinortonii and Cornus × rutgersensis (Cornaceae), new names for two artificially produced hybrids of big-bracted dogwoods. PhytoKeys 55: 93-111

Pollock, N.B, N. Howe, N, I. Irizarry, N. Lorusso, A. Kruger, K. Himmler, & L. Struwe. 2015. Personal BioBlitz: a new way to encourage biodiversity discovery and knowledge in k-99 education and outreach. BioScience 65 (12): 1154-1164.

Poster, L. S., J. S. Pringle, & L. Struwe. 2015. Identification and descriptions of the Gentianaceae in New Jersey. Bartonia 67: 1-34.

Pringle, J., L. S. Poster, & L. Struwe. 2015. Nomenclature and typification of the Gentianaceae in New Jersey. Bartonia 67: 35-57.

Shappell, L., J. Blake, B. Angell, & L. Struwe. 2015. Field Guide to Weedy Plants of the Eastern US. Chrysler Herbarium, Rutgers University, New Brunswick, NJ.

Shappell, L., J. Blake, B. Angell, & L. Struwe. 2015. Weedy Grasses & Grass-like Plants of the Eastern US. Chrysler Herbarium, Rutgers University, New Brunswick, NJ.

# Media:

**Jon Cole –**

Here is a link to more information about Jon's recent John Martin Award from ASLO
http://www.caryinstitute.org/newsroom/cary-scientists-win-prestigious-john-h-martin-award

**Malin Pinsky –**

Pinsky & Byler 2015 was covered by BBC News and ClimateWire.

Fenichel et al. 2016 was covered by Newsweek, The Weather Channel, Christian Science Monitor, NJTV, and GreenWire.

Malin Pinsky was quoted in Carl Zimmer's NY Times article, "Warming Oceans Putting Marine Life "In a Blender"" on 9/18/2015.

Malin Pinsky was interviewed for EarthWise radio (NPR) about climate change and lobster.

**Lena Struwe –**

On February 15, 2016 **Lena Struwe** and George Poinar (Oregon State University) published a paper on the newly discovered 15-million year old asterid flower described as *Strychnos electri* in *Nature Plants*. It was the first asterid fossil found in neotropical amber. This resulted in news stories in a large number

of media worldwide, including Reuters, CNN, BBC, Fox News, Newsweek, Time, UPI, The Guardian, ABC Australia, The New Yorker, New Scientist, Philly.com, Swedish public radio and TV, Rutgers Today, El Mundo, Business Insider, Washington Post, NY Daily News, Christian Science Monitor, etc. and reached such remote areas as Mauritania, Armenia, Indonesia, Sri Lanka, China, Portugal and Russia and many more.

For example, see https://www.newscientist.com/article/2077484-beautiful-amber-fossil-flower-reveals-plant-history-of-new-world/.

For a link to the abstract: http://www.nature.com/articles/nplants20165.

# Grants:

**Liz Ballare in Erin Vogel's lab received two grants:**

Riverbanks Conservation Support Fund (CSF)
Cleveland Metroparks Zoo and Cleveland Zoological Society conservation grants program

**Joan Bennett –**

"Fumigation with safe aroma compounds for control of *Pseudogymnoascus destructans,"* $44,000; The Nature Conservancy (Bat Conservation International) (Sept 2015- August 2017)

"Yeast synthetic genetic array (SGA) analyses for studying fungal volatile organic compounds," $49,725; Sloan Foundation, (Sept. 2015-August 2016)

"*Penicillium* genomics for solving postharvest apple decay," $87,050; Cooperative Agreement, U. S. Department of Agriculture (September 2015-August 2016)

**Steven Handel -**

NJ Conservation Foundation. "Camden, NJ Riverfront Park renewal." 2015. $4,000. (w/ETM Associates, landscape architects).

**Malin Pinsky –**

2015-18 NOAA Cooperative Institute for the North Atlantic Region. "Tracking changes in North American marine species distributions." Pinsky, M. L. $48,000

2015-17 U.S. Fish and Wildlife Service. "Are Bat Populations Infected with White-nose Syndrome Undergoing Rapid Natural Selection?" B. Maslo, N. Fefferman, and M. L. Pinsky. $395,630.

2015-17 Gordon and Betty Moore Foundation. "Managing Coral Reefs for Adaptation Potential." Webster, M., M. Colton, M. Pinsky, and D. Schindler. $500,000 ($23,859 to Rutgers)

2015-17 National Oceanic and Atmospheric Administration (NOAA) Climate Program Office. “Climate velocity over the 21st century and its implications for fisheries management in the Northeast U.S.” Pinsky, M. and R. Seagraves. $299,896.

# Faculty Achievements and Activities:

**Lena Struwe –**

2015-present At-large-member, Board of Directors, Organization of Tropical Studies (3 years, elected).

# Student Achievements and Activities:

**Alexis Kleinbeck from Steven Handel’s Lab –**

2015 Society of Wetland Scientists, Pacific Northwest Chapter, McMillan Student Scholarship Award

2015 Ecological Society of America, Mid-Atlantic Annual Conference, Graduate Poster Presentation, Honorable Mention

# Transitions:

**Laura Shappell, advised by Lena Struwe,** graduated in October 2015, and now works as a wetland scientist for NY Dep of Environmental Protection in Albany, NY.

**Taryn Pittfield, advised by Joanna Burger**, defended her M.S. thesis on March 16.

**Katalin Malcolm, advised by John Dighton**, defended her Ph.D. dissertation on March 10.

# Alumni News:

**Zac Freedman** (advisor **Tamar Barkay**) will be moving from his postdoctoral position at the University of Michigan to his new job as an Assistant Professor of Environmental Microbiology in the Division of Plant and Soil Sciences at West Virginia University on July 1. Zac has also been publishing!

Freedman, Z. B., R. A. Upchurch, D. R. Zak, and L. C. Cline. (2016) Anthropogenic N deposition slows decay by favoring bacterial metabolism: Insights from metagenomic analyses. Frontiers in Microbiology. Online only, doi:10.3389/fmicb.2016.00259

Freedman, Z. B., and D. R. Zak. (2015) Atmospheric N deposition alters connectance, but not functional potential among saprotrophic bacterial communities. Molecular Ecology. 24: 3170-3180

Freedman, Z. B., R. A. Upchurch, K. J. Romanowicz, and D. R. Zak. (2015) Differential responses of total and active soil microbial communities to future rates of atmospheric N deposition. Soil Biology and Biochemistry. 90: 275-282

Freedman, Z. B., and D. R. Zak. (2015) Soil bacterial communities are shaped by dispersal limitation and environmental filtering: evidence from a long-term chronosequence. Environmental Microbiology. 17: 3208-3218

Peschel, A., D. R. Zak, L. C. Cline, and Z. B. Freedman. (2015) Elk, sagebrush, and saprotrophs: indirect top-down control on microbial community composition and function. Ecology. 96: 2383–2393

Freedman, Z. B., and D. R. Zak. (2014) Atmospheric N deposition increases bacterial laccase-like multicopper oxidases: implications for organic matter decay. Applied and Environmental Microbiology. 80: 4460-4468