

## *Ecology & Evolution Graduate Program Newsletter*

**February 2016**

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

After a bit of a hiatus, the newsletter is back. Thanks to all who responded to our request for newsworthy information. We hope that the newsletter will now appear on a bimonthly schedule, or nearly so. This issue contains some information that has accumulated during the hiatus, but we will try to keep it current from here on out. Remember to send your news to [pjmorin@rci.rutgers.edu](mailto:pjmorin@rci.rutgers.edu)!

### **Congratulations!**

**Talia Young from the Jensen Lab –**

**Talia Young** was awarded a prestigious David H Smith Conservation Research Fellowship. This post-doctoral fellowship will provide two years of funding to support Talia's research on the ecological and economic implications of Community Supported Fisheries. She will be based at Princeton in Simon Levin's lab.



### **Jonathan Cole –**

**Jonathan Cole** was elected as a member of the US National Academy of Sciences in 2014! How did we miss this? Congratulations to Jon on this very impressive distinction! Jon is a member of our graduate faculty and is located at the Cary Institute of Ecosystem Studies.

And, **Jonathan Cole** received the John Martin Award from the Association for the Sciences of Limnology and Oceanography (ASLO) in November 2015!

## **Presentations:**

### **Mike Allen from the Burger Lab -**

Allen, M. and N. Tsioura. 2016. "Coastal impoundments in a changing climate: a regional GIS catalog and Lidar vulnerability analyses." Invited guest lecture, Brooklyn College, Intro to Urban Sustainability course, 8 February 2016, New York, NY. Talk.

Allen, M. and N. Tsioura. 2015. "Climate change and managed wetlands in the Northeast and Mid-Atlantic." Greater New York/New Jersey Harbor Herons and Waterbirds Working Group 11th Annual Meeting, 3-4 December 2015, New York, NY. Talk.

Allen, M. C. and J. Burger. 2015. "Refugia as a conservation tool for hayfield insects and their vertebrate predators." Student Conference on Conservation Science, American Museum of Natural History, Center for Biodiversity and Conservation, 7-9 October 2015, New York. Poster.

Kelly\*, J. F., N. Tsioura\*, M. Allen\*, J. Hafstad, and A. Severino. 2015. "Assessing Forest Health in Central New Jersey: Community College Students and Citizen Science." New Jersey Native Plant Society Annual Fall Conference, 7 November 2015, Branchburg, NJ. Joint talk.

### **Paulina Arancibia from the Morin Lab –**

On the trophic role of filter feeders in rocky intertidal shores. 2015. Ann. Meeting Ecological Society of America, Baltimore, MD

### **Molly Bindell from the Zhang Lab–**

Presented a talk on her research at the Northeastern Plant, Pest, and Soils Conference (NEPPSC) in Philadelphia in January, 2016

### **Jennifer Blake-Mahmud from the Struwe Lab -**

Blake-Mahmud, Jennifer, & Lena Struwe (2015). Temporal and environmental variables affecting changing sex expression in striped maple (*Acer pensylvanicum*, Sapindaceae). Poster presentation at ESA 2015 conference, August 2015, Baltimore, MD.

Blake-Mahmud, Jennifer, & Lena Struwe (2015). Temporal and environmental variables affecting changing sex expression in striped maple (*Acer pensylvanicum*, Sapindaceae). Poster presentation at Botany 2015 conference, July 2015, Edmonton, Canada.

Blake-Mahmud, Jennifer, & Lena Struwe (2015). Not that kind of weed: using spontaneous weedy vegetation in elementary through post-secondary education. Presentation at Botany 2015 conference, July 2015, Edmonton, Canada.

Blake-Mahmud, Jennifer, & Lena Struwe (2015). Patterns of plant species diversity in extreme urban environments. Presentation at Botany 2015 conference, July 2015, Edmonton, Canada.

**Daniel Clark from the Jordan Lab –**

"Uncovering the role of socio-demographic factors and place on environmental literacy among urban and suburban park users". ESA 2015 conference, August 2015, Baltimore, MD.

**John Dighton –**

EUFORIA European Forest Research and Innovation Area, Rogla, Slovenia September 2015. Invited keynote address: Dighton, J. & Gray, D. M. 'Disturbance and resilience in forests: examples from the New Jersey Pine Barrens'.

Asian Mycological Society, Goa, India, October 2015. Invited keynote address: Dighton, J. 'Fungi in ecosystem processes'.

**Cara Faillace from the Morin Lab –**

Faillace, C. A., J. Caplan, J. Grabosky, and P. Morin. Competition in the understory; rooting out the mechanisms. 2015. Ann. Meeting Ecological Society of America, Baltimore, MD.

Co-evolutionary dynamics of invaders and invaded species in experimental microbial communities. American Society of Naturalists, Asilomar, CA. 11 January 2016.

Co-evolutionary dynamics of invaders and invaded species in experimental microbial communities. Contributed poster at the First MIT Quantitative Ecology Meeting, Department of Physics, MIT. Organizers Jeff Gore and Serguei Saavedra.

**Heidi Fuchs -**

Fuchs, H.L. 2015. Sensing mechanisms and ecological consequences of flow-induced larval behavior. Ecology seminar. Scripps Institution of Oceanography, University of California, San Diego, CA.

**Frank Gallagher –**

2015 "An Introduction to Wetland Ecology" Natural Lands Stewardship Workshop. Focus on Wetlands Management. Eco Complex Bordentown Township, NJ Dec. 3.

2015 "Post-Industrial Ecology -The Road Less Traveled" Ecological Society of America, Annual Conference, Baltimore Maryland August 14.

**Tina Harrison from the Winfree Lab –**

Harrison, T., R. Winfree 2015. Urbanization homogenizes traits within and between bee communities. Ecological Society of America Annual Meeting. Baltimore, MD.

**Nick Lorusso from the Morin Lab –**

Predator-Contingent Exploitation of an Inducible Defense: When is it Best to Sink or Swim? American Society of Naturalists, Asilomar, CA. 13 January 2016.

Working with what you've got: linking defensive colony formation with the evolution of the multicellular volvocine algae. Contributed poster at the First MIT Quantitative Ecology Meeting, Department of Physics, MIT, 29 January 2016 . Organizers Jeff Gore and Serguei Saavedra.

**Marci Meixler –**

Sanderson, E., K. Fisher, M. Giampieri, J. Barr, M. S. Meixler, S. Allred, K. Bunting-Howarth, and B. DuBois. 2015. Visionmaker NYC: A bottom-up approach to finding shared socioeconomic pathways in New York City. American Geophysical Union. San Francisco, CA. 14-18 December.

Piana, M., A. Kleinbeck, and M. S. Meixler. 2015. Modeling the impacts of sea level rise on ecosystem services of the urban-coastal fringe in Jamaica Bay, New York. Ecological Society of America. Baltimore, MD. 9-14 August.

**Peter Morin –**

Small worlds: using microbes to test and extend ecological theory. 29 Jan. 2016. Invited presentation at the First Quantitative Ecology Meeting, Department of Physics, MIT. Organizers Jeff Gore and Serguei Saavedra.

**Rachel Paseka from the Morin Lab-**

2015 **Paseka, R.** "Deviation from homeostasis and elemental imbalance in host-parasite interactions". Conference on Biological Stoichiometry. Trent University, Peterborough, Ontario, Canada. *(poster)*

2015 **Paseka, R.** "Deviation from homeostasis and elemental imbalance in host-parasite interactions". Theo Murphy International Scientific Meeting-- Elements, genomes and ecosystems: cascading nitrogen and phosphorus impacts across levels of biological organisation, Kavli Royal Society International Centre. Buckinghamshire, UK. *(poster)*

**Nick Pollock from the John-Alder Lab –**

Dihydrotestosterone inhibits growth in a female-larger lizard (*Sceloporus undulatus*): implications for the development of sexual size dimorphism. Society of Integrative and Comparative Biology Conference. Portland, OR, January 6, 2016.

Proximate Factors Affecting Growth and Ectoparasitism in a Sexually Dimorphic Lizard. An invited seminar at Kean University. Union, NJ, October 29, 2015.

#### **Robert Trivers –**

“Genomic imprinting from a developmental perspective”, NEEPS, Ninth Annual Conference on the evolutionary behavioral sciences, Suffolk University, Boston, Mass., April 11, 2015.

“The evolutionary dynamics of self-deception”, Keynote address for conference on Menschliches Verhalten in Evolutionärer Perspektive, Universität Würzburg, Würzburg, Germany, March 17, 2015.

## **Publications:**

#### **Jonathan Cole –**

Wilkinson, G.M., J.J. Cole, M.L. Pace, R.A. Johnson, and M. J. Kleinhans. 2015. Physical and biological contributions to metalimnetic oxygen maxima in lakes. *Limnol & Oceanogr*:60 (1): 242-251.

Batt,R.D., S.R. Carpenter, J. J. Cole, M.L. Pace, R.A. Johnson, J.T. Kurtzweil and G.M. Wilkinson 2015. Altered energy flow in the food web of an experimentally darkened lake. *Ecosphere* 6(3):33. <http://dx.doi.org/10.1890/ES14-00241.1>

Hanson, P.H., M.L. Pace, S.R. Carpenter, J.J. Cole and E. Stanley. 2015. Integrating Landscape Carbon Cycling: Research Needs for Resolving Organic Carbon Budgets of Lakes. *Ecosystems*. 18(3): 363-375 ( DOI: 10.1002/lno.10022)

Wilkinson, G.M., J.J. Cole and M.L. Pace. 2015. Deuterium as a food source tracer: Sensitivity to environmental water, lipid content, and hydrogen exchange. *Limnology and Oceanography: Methods* DOI:10.1002/lom3.10019

Carpenter, S.R., J.J. Cole, M.L. Pace, and G.M. Wilkinson. 2015. Response of plankton to nutrients, planktivory and terrestrial organic matter: a model analysis of whole-lake experiments. *Ecology Letters* doi:10.1111/ele.12558.

Pace, M.L., S.R. Carpenter, and J.J. Cole. 2015. With and without warning: managing ecosystems in a changing world. *Frontiers in Ecology and Environment* 13: 460-467.

#### **Heidi Fuchs-**

Fuchs, H. L. and G. P. Gerbi (2016). Seascape-level variation in turbulence- and wave-generated hydrodynamic signals experienced by plankton. *Progr. Oceanogr.* 141: 109-129.

Fuchs, H. L., A. J. Christman, G. P. Gerbi, E. J. Hunter and F. J. Diez (2015). Directional flow sensing by passively stable larvae. *J. Exp. Biol.* 218: 2782-2792.

Fuchs, H. L., G. P. Gerbi, E. J. Hunter, A. J. Christman and F. J. Diez (2015). Hydrodynamic sensing and behavior by oyster larvae in turbulence and waves. *J. Exp. Biol.* 218: 1419-1432.

#### **Frank Gallagher -**

2015 June-Wells. M. **Gallagher, F. J.**, Gibbons, J., and Bugbee, G.,. The Influences of Water and Soil Chemistries on the Structure of Lentic Plant Communities. *The Journal of Lake and Reservoir Management*. Accepted December.

2015 Hoefer, W., **Gallagher, F.J.**, Hyslop, T., Wibbelt, T., and Ravit, B., Unique Landfill Restoration Designs Increase Opportunities to Create Urban Open Space. *Environmental Practice*. Accepted: November.

2015 Huan Feng, Qian, Y., **Gallagher F.J.**, Chang-Jun Liu, Weiguo Zhang, Lizhong Yu, Keith W Jones, Ryan Tappero, Synchrotron micro-scale study of trace metal translocation and distribution in wetland plant root systems. *Science of the Total Environment*. Accepted September.

2015 Evans, J.M., Adam Parker, **Gallagher, F.J.**, Krumins, J.A. Plant Productivity, Ectomycorrhiza and Metal Contamination in Urban Brownfield Soils. *Soil Science*. doi: 10.1097/SS.000000000000128.

2015 Qian, Y., Feng, F. H., **Gallagher, F.J.**, Zhu, Q., Wu, M., Liu, C.J., Jones, K., and Tappero, R. Synchrotron Study of Metal Localization in *Typha latifolia* L. Root Sections. *Journal of Synchrotron Radiation*, 22, 1459–1468.

2015 Hagmann, D.F., Goodey, N.M., Mathieu C., Evens, J., Aronson, M.F.J., **Gallagher, F.J.**, Krumins, J.A. Effect of Metal Contamination on Microbial Enzymatic Activity in Soil. *Soil Biochemistry and Biology*. 91 291-297.

#### **Steven Handel –**

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.

#### **Tina Harrison from the Winfree Lab –**

**Harrison, T**, R Winfree. 2015. Urban drivers of plant-pollinator interactions. *Functional Ecology* 29: 879-888.

Winfree, R, M MacLeod, **T Harrison**, D Cariveau. 2015. Conserving and restoring mutualisms. Pages 268-286 in J Bronstein, ed, *Mutualism*. Oxford University Press.

#### **Marci Meixler –**

Hauser, S., M. S. Meixler, and M. Laba. 2015. Quantification of impacts and ecosystem services loss in New Jersey coastal wetlands due to Hurricane Sandy storm surge. *Wetlands*, 35(6): 1137-1148.

Meixler, M. S. and M. B. Bain. 2015. Modeling aquatic macroinvertebrate richness using landscape attributes. *International Journal of Ecology*, 2015: 926526.

Walter, J. A., M. S. Meixler, T. Mueller, W. Fagan, P. C. Tobin, and K. J. Haynes. 2015. How topography induces reproductive asynchrony and alters gypsy moth invasion dynamics. *Journal of Animal Ecology*, 84(1): 188-198.

**Nick Pollock from the John-Alder Lab –**

Pollock NB, Howe N, Irizarry I, Lorusso N, Kruger A, Himmler K, Struwe L (2015) Personal BioBlitz: A New Way to Encourage Biodiversity Discovery and Knowledge in K-99 Education and Outreach. *BioScience* 65: 1154-1164.

Pollock NB, Gawne E, Taylor EN (2015) Effects of temperature on feeding duration, success, and efficiency of larval western black-legged ticks (Acari: Ixodidae) on western fence lizards. *Experimental and Applied Acarology* 67: 299-307.

**Lauren Poster from the Handel Lab-**

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

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

**Peter Smouse –**

Ledig FT, Hom JL, Smouse PE (2013) The evolution of the New Jersey pine plains. *AM J BOT* 100:778–791.

Ledig FT, Smouse PE, Hom JL (2015) Post-glacial migration and adaptation for dispersal in pitch pine (Pinaceae). *AM J BOT* 102:2074-2091.

Vuong HB, Canham CD, Fonseca DM, Brisson D, Morin PJ, Smouse PE, Ostfeld RS (2014) Occurrence and transmission efficiencies of *Borrelia burgdorferi ospC* types in avian and mammalian wildlife. *INFECT GENET EVOL* 27:594-600.

**Amanda Sorensen from the Jordan Lab –**

Amanda E. Sorensen, Rebecca C. Jordan, Rachel Shwom, Diane Ebert-May, Cindy Isenhour, Aaron M. McCright, Jennifer Meta Robinson. 2015. Model-based reasoning to foster environmental and socio-scientific literacy in higher education. *Journal of Environmental Sciences and Studies*

Amanda E. Sorensen, Daniel Clark, Rebecca C. Jordan. 2015. Effects of alternative framing on the public's perceived importance of environmental conservation. *Frontiers in Environmental Science*.

#### **Robert Trivers –**

Trivers, R. 2015. *Wild Life: Adventures of an Evolutionary Biologist*. New Brunswick: Biosocial Research Publishers.

Trivers, R., Palestis, B.G., Fink, B., & Manning, J.T. 2015. Is foot asymmetry a correlate of hand performance asymmetry? Evidence from the Jamaican Symmetry Project. *Evolutionary Psychological Science*, 1, 13-17.

#### **Judy Weis -**

Weis, J. *Marine Pollution. What everyone needs to know*. 2014. Oxford University Press. 296 pages.

## **Media:**

#### **Jennifer Blake-Mahmud -**

Short film on urban diversity and weeds for PACT: Plants are Cool Too, with Dr. Christopher Martine. "Extreme Weeds of Parking Lots" <https://www.youtube.com/watch?v=HpstofPFX0I>. Released summer 2015

#### **Robert Trivers –**

Check out the following links!

<http://www.roberttriversfilm.com/>

<https://www.psychologytoday.com/articles/201601/trivers-pursuit>

<http://tedxtalks.ted.com/video/Symmetrical-Knees-and-Sprinting>

#### **Judy Weis –**

Quoted in the Guardian:

<http://www.theguardian.com/us-news/2016/jan/21/david-koch-american-museum-of-natural-history-climate-change-fossil-fuel-money>



## Grants:

### **Molly Bindell –**

Rutgers TA/GA Professional Development Summer Fund and Fall Fund (\$2000 and \$698 respectively)

### **Jennifer Blake-Mahmud –**

Botanical Society of America Graduate Student Research Award. Research proposal: “Temporal, spatial, and environmental dimensions of variable sex expression in striped maple, *Acer pensylvanicum* (Sapindaceae)” \$500. (May 2015)

First Prize - Graduate Student Research Fellowships Competition, April 2015 (\$2,500) Torrey Botanical Society

### **Tina Harrison –**

New Jersey State Wildlife Grant. Comprehensively Evaluating New Jersey’s Bee Pollinators for the State Wildlife Action Plan. Role: Co-PI, *With* R Winfree, G Fowles, R Somes (Co-PIs) and D Jenkins (Project Manager) 2016-2017. \$75,000

### **Marci Meixler –**

2014-2016 National Park Service: “Restoration of Jamaica Bay fringing habitats: Post-Sandy status and new approaches for a resilient future” (\$483,000; \$40k to MSM; Nov 2014-Oct 2016; PI: S. Handel, C. Kaunzinger, M. Aronson and M. Meixler; co-investigator, multi-institutional)

2014-2016 Wildlife Conservation Society: “Visionmaker Jamaica Bay: Analysis of community generated adaptation strategies to enhance resilient ecosystems in Jamaica Bay, New York” (\$349,999; \$103k to MSM, Nov 2014-Oct 2016; PI: E. Sanderson, S. Allred, and M. Meixler; co-investigator, multi-institutional)

### **Robert Trivers –**

2015 Australian Research Council, \$290,000, co-PI

2015 Enhanced Education Foundation, \$20,000

2015 CHES \$6018 and Biosocial Research Foundation, \$7510

## Faculty Achievements and Activities:

**Jonathan Cole-**

**Jon** writes that "Our paper from 1988 just recently was cited more than 1000 times according to Web of Science. Cole, J. J., S. Findlay and M. L. Pace. 1988. Bacterial production in fresh and saltwater ecosystems: A cross system overview. Mar. Ecol. Prog. Ser. 43:1 10."

## Student Achievements and Activities:

**Dan Clark from the Jordan Lab –**

Participated in a panel at Delaware Valley University in Doylestown in November 2015 on human and wildlife competition in landscapes. It was hosted by **Alicia Shenko**, who graduated from the E&E program.

## Transitions:

**Jim Vasslides from the Jensen Lab –**

Jim Vasslides successfully defended his Ph.D. dissertation, "Using ecosystem models to understand the faunal response to non-trophic impacts in an urbanizing estuary ", on December 14, 2015. Jim's research employed quantitative and qualitative ecosystem modeling techniques to predict the direct and indirect influences of different management actions on the food web of Barnegat Bay.



## Alumni News:

We'd love to hear from you! Send us some news!