ECOLOGY AND EVOLUTIONARY BIOLOGY

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EEB FACULTY FOCUS

Dr. **Morgan Tingley** joined the EEB Department as an Assistant Professor. Morgan earned his Ph.D. at the University of California, Berkley and completed a post doctoral position with Princeton before coming to EEB

Morgan's research focuses on how individual bird distributions as well as composite bird communities respond to large-scale changes to their environment. He notes, from a conservation perspective as well as ecological one, as we look to the future we are interested in knowing (1) where will individual species be 100 years from now and (2) what will avian communities (their structure, their function, and their composition) look like at that point in time look like at that point in time?

The ability to make these predictions relies on current understanding of how changing environments affect species individually and compositely. Unfortunately, this understanding currently is quite weak.

Morgan's research takes two general approaches to filling in these critical knowledge gaps. First, using repeated surveys over time (from decades to centuries) he looks empirically at how birds have changed in response to changing environments. While climate change is one big issue which with he is concerned and upon which his research focuses, he also studies fire (and its impacts on forest communities), invasive species (and how they change forest structure), and land-use change (including fragmentation, urbanization, and deforestation).

In addition, Morgan conducts studies that seek to understand the processes underlying changing bird distributions. He believes it is not enough to just know how species' ranges have changed over time if we do not know what factors are actually causing these observed changes. While Morgan is an ornithologist at heart, as well as by training, he enjoys working on plants, mammals, reptiles, and other species; he primarily works in the mountains of North America, as elevational gradients are one of the best places to go looking for range shifts with climate change.

Before coming to UConn, Morgan was a David H. Smith Conservation Fellow. This program selects 4 early-career leaders in conservation and funds their research in applied topics. In March of 2014, Morgan was awarded the "Wings Across Americas" Conservation Award from the USDA Forest Service for research in collaboration with the Institute for Bird Populations on the effects of fire in California on bird populations and communities, with particular focus on the Black-backed Woodpecker. In 2012 Morgan was awarded the prestigious "Young Professionals Award" by the Cooper Ornithological Society.

About coming to EEB Morgan says, "I am delighted to find colleagues that have an incredible diversity of interests and research foci, yet each with a deep and broad understanding not just of their specific fields, but of our entire, integrative discipline. Ecology and Evolutionary Biology as a field is an incredibly exciting place to be in science right now as we are leading the forefronts of understanding the living world, and how we, as humans interact with it. My colleagues here within EEB at UConn truly exemplify scientific curiosity and scientific discovery, and I am excited to be joining them as we help our species better understand our role on this planet." More about Morgan and his research can be found at http://www.morgantingley.com/

FACULTY NEWS

Paul and Louise Lewis, together with two faculty members from Statistics, Ming-Hui Chen and Lynn Kuo, were awarded a $600,000 NSF grant. The project, entitled, Estimating the Bayesian phylogenetic information content of systematic data," will develop statistical methods for estimating the amount of phylogenetic information in systematic data, which includes morphological trait data as well as protein and DNA/ RNA sequences. The grant will support one EEB postdoc and one Statistics graduate student for 2.5 years, as well as significantly increase the computational infrastructure of the Bioinformatics Facility. In addition, Paul will work with 2 E. O. Smith High School seniors to develop Android apps for mobile devices that will be useful for explaining statistical concepts related to Bayesian phylogenetics to the general public.

In addition to the grant, **Paul Lewis,** along with Ming-Hui Chen and Lynn Kuo edited the recently published "Bayesian Phylogenetics: Methods, Algorithms, and Applications." The book is published by Chapman & Hall/CRC Mathematical and Computational Biology.

Mark Urban has been awarded a 2-year $1.2 million National Science Foundation grant. Co-PI on the grant, entitled, "Adaptability of a key Arctic freshwater species to climate change" is Dr. Linda Deegan, Senior Scientist at the Marine Biological Laboratory at Woods Hole.

The grant will allow researchers to evaluate how movement, plasticity and adaptation mediate climate responses of the Arctic grayling, a keystone species in Arctic streams; and will study populations from three remote Arctic streams on the north slope of Alaska that differ in temperature, connectivity, and sensitivity to climate change.

Pilot data indicates increasing drying events threaten grayling return to overwintering sites and substantial population structure among and within watersheds and will test how differing watershed characteristics impose selection on life history strategies using individual tagging, otolith (ear bone) micro-chemistry, and genomics.

Researchers will quantify genetic and environmental contributions to performance of fish from divergent environments. Species can respond to climate change through movement, phenotypic plasticity, or local adaptive evolution. The grant allows researchers to address all three strategies to understand the persistence of a key Arctic species.

FACULTY NEWS

Robin Chazdon became the Executive Director of the Association of Tropical Biology and Conservation on January 1, 2014. During the 2014 Annual Meeting on July 21 she addressed the delegates gathered from all around the world at the opening session in the Cairns Conference Center. Robin has been an active member of ATBC since her graduate school days and has served as Council Member (1989-1991), President (1998), and Editor of the society's international journal, Biotropica (2003-2007).

Chris Elphick was featured on an episode of AquaKids Adventures on NBC's CoziTV. The focus of this adventure was "Beach Biodiversity" and was part of a Worldwide Beach Survey which was conducted with the help of "Project Oceanology" at the University of Connecticut, Avery Point. They helped monitor a wide variety of Sea Life found on the beaches of Connecticut.

Gene Likens received the 2014 Alfred C. Redfield Lifetime Achievement Award at the Joint Aquatic Sciences Meeting 2014 Association for the Sciences of Limnology and Oceanography; Society for Freshwater Sciences; Phycological Society of America; Society of Wetland Scientists. This award was given in recognition of his 50+ years of research at Hubbard Brook in the White Mountains of New Hampshire. The Hubbard Brook Ecosystem Study was initiated in 1963 to advance understanding of ecological, hydrological, and biogeochemical interactions in watershed ecosystems. More information can be found at: http://www.caryinstitute.org/science-program/our-scientists/dr-gene-e-likens.

Eric Schultz is a member of the Technical Working Group convened by NOAA to analyze existing data and identify options for managing recovery of two species of fish known collectively as River Herring (Alewife and Blueback Herring). He is chairing a subgroup studying species interactions that may impede the recovery, such as the predatory role of striped bass, and is a member of subgroups studying the effects of climate change and habitat alteration.

Kent Wells attended a symposium on frog behavior entitled "Contemporary Research on Anuran Communication: A Symposium Celebrating the Extraordinary Careers and Contributions of Albert Feng, Carl Gerhardt, Walter Hodl, Darcy Kelley, Peter Narins and Kent Wells." This was satellite symposium associated with the meeting of the International Society for Behavioral Ecology.

EEB STUDENT NEWS

Alyssa Borowske, doctoral candidate in Chris Elphick's lab, was awarded one of two Louis Agassiz Fuertes Awards at the annual meeting of the Wilson Ornithological Society. This award is "available to all ornithologists although graduate students and young professionals are preferred." More than 150 people applied for the award.

Justin Davis, doctoral candidate in Eric Schultz's lab, was awarded an AFS Emerging Leader Mentorship Award at the 144th Annual Meeting of the American Fisheries Society in Quebec City earlier this summer. This award recognizes fishery professionals who have been actively involved with the American Fisheries Society and have demonstrated potential to become future leaders in the Society and the fisheries profession as a whole. Justin works for the Inland Fisheries Division of Connecticut's Department of Energy and Environmental Protection.

Jeff Divino, doctoral candidate in Eric Schultz's lab, was awarded a 2014 EEB Excellence in Teaching Award for his teaching in EEB2244, General Ecology, and EEB4200, Biology of Fishes, in the 2013-2014 academic year.

Lily Lewis, doctoral candidate in Bernard Goffinet's lab, wrote a paper regarding the transportation of tiny parts of spore producing plants in the feathers of migrating birds which has been widely published. This newly discovered aspect of long-distance dispersal of diaspores has created quite a bit of excitement in the scientific community. EEB's Dr. Chris Elphick is co-author on the paper. The paper has been published in more than 16 notable media outlets and publications including BBC Nature News, AAAS, Science News online, Discovery News, Bio-Medicine to name but a few. For more information about Lily's research go to: http://lilyrlewis.com/

Manette Sandor, doctoral candidate in Chris Elphick' S lab, received a grant from Audubon Connecticut to support her research on the interactions between fruiting shrubs and their birds that eat their berries. Manette also received a 2014 EEB Excellence in Teaching Award for her teaching in EEB4230W, Methods of Ecology, EEB4261, Ornithology Lab, and EEB2208, Introduction to Conservation Biology, the 2013-2014 academic year.

Jon Velotta, doctoral candidate in Eric Schultz's lab, has accepted a postdoctoral fellowship at University of Illinois at Urbana-Champaign with Dr. Zac Cheviron.

EEB undergrads, **Rob Turnbull** and **Joseph DeSisto** were recently recognized for their research. Turnbull, working in the Elphick lab, won first place in the Alfred Russell Wallace Grants for Outstanding Field Ecologists awarded by Operation Wallacea. **Joe Desisto**, a UCONN Holster Scholar and mentored by EEB's Jane O'Donnell, presented his research entitled, "The Centipedes of Great Smokey Mountain National Park" to the University in September at a special event for Holster Scholars. More information about the Holster Scholar First Year Program can be found at: http://honors.uconn.edu/special-programs/holster-scholars/