Ecology and Evolutionary Biology

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Photo by Peter Moranus

EEB FACULTY FOCUS

Professor **Charlie Yarish** has developed an internationally known laboratory for seaweed research including ecophysiology, ecology, biogeography and aquaculture. Seaweeds have significant value in US agriculture as foods, organic fertilizers, feeds (shrimps, cattle, pets, etc.), as well as functional foods, cosmeceuticals, nutraceuticals, and alternative medicinal products. Based upon decades of his own basic research, his current is laser focused on making seaweed aquaculture systems available to meet market demands in Northeast America, and improving water quality through nutrient bioextraction and integrated multi-trophic aquaculture (IMTA). See http://today.uconn.edu/blog/2013/08/from-the-lab-to-the-dinner-table-kelp/.

The Council of the New England Botanical Club honors Merritt Lyndon Fernald's exemplary contributions to the botany of northeastern North America through the Merritt Lyndon Fernald Award. The award is given annually, if deemed appropriate, to the author(s) of the best paper published in each volume of *Rhodora* that has made use of herbarium specimens and/or involved fieldwork. Dr. Yarish, along with his co-authors, Jeremy Nettleton, Arthur Mathieson, Carol Thornber, and Christoper Neefus have been awarded the Fernald Award for the best paper published in Rhodora [115 (961): 28-41 (January)]. The paper, "Introduction Of Gracilaria vermiculophylla (Rhodophyta, Gracilariales) To New England, USA: Estimated Arrival Times And Current Distribution," was praised by the Fernald panel.

Charlie, along with Mark A. Tedesco, director of the EPA Long Island Sound Office in Stamford; R. Lawrence Swanson, a professor at the School of Marine and Atmospheric Sciences at Stony Brook University; Paul E. Stacey, a research coordinator at the Great Bay National Estuarine Research Reserve in Durham, NH; and Corey Garza, a professor at the Division of Science and Environmental Policy at California State University in Monterey Bay, CA edited a new publication which synthesizes decades of Long Island Sound research entitled "*Long Island Sound Prospects for the Urban Sea.*" See http://longislandsoundstudy.net/2013/12/liss-announces-publication-of-new-science-book-synthesizing-decades-of-long-island-sound-research/

FACULTY RESEARCH

Dr. Bernard Goffinet is currently working on three NSF-funded projects:

Starting from scratch with *Sticta:* Evolution, diversification, and conservation of a megadiverse flagship lichen genus.
Co-PI: Dr. T. Lumbsch & Dr. R. Lücking (Field Museum Chicago).
Main collaborator: Dr. E. Sérusiaux (Uni. Liège, Belgium)

AToL: Assembling the Pleurocarp Tree of Life: Resolving the rapid radiation using genomics and transcriptomics. (go here to project web-site)
Co-PI: Dr. A.J. Shaw (Duke) & Dr. N. Wickett (Chicago Botanical Garden). Research collaborators: Dr. Yang Liu (UCONN), Dr. Nicolas Devos (Duke) and Dr. Matt Johnsson (Chicago).

Rapid radiation and sporophyte evolution in the Funariaceae: inferences from phylogenomics and cross generational cuticle development studies. (go here to project web-site)
Research associates: Drs. Rafael Medina and Jessica Budke.

Dr. Charlie Yarish received a 3-year grant from BARD (Binational Agricultural Research and Development Fund), a competitive funding program for mutually beneficial, mission-oriented strategic and applied research of agricultural problems, jointly conducted by American and Israeli scientists.

The use of aquaculture effluents in spray culture for the production of high protein macroalgae for shrimp aqua-feeds.
Research collaborators for this project include B.G. Mitchell, Scripps Instituion of Oceanography, UC San Diego, A. Neori, Israel Oceanographic and Limnological Research Institute, T.M. Samocha, Texas A & M.

In addition to the BARD project, Dr. Yarish is currently involved with other projects dealing with watershed management (embayments) and seagrasses with colleagues at UCONN (Marine Sciences) and the Cornell Cooperative Extension (New York).

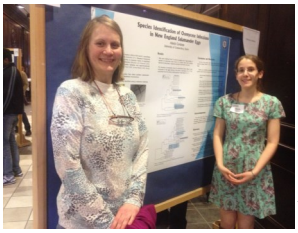
Dr. John Silander wrote a successful Research Experience for Undergraduates (REU) supplement to the NSF Dimensions of Biodiversity grant (PI—Carl Schlichting, co-PIs—Kent Holsinger and Cindi Jones). This award will bring two "under-represented" undergraduates from Rhode Island College and their faculty member, an EEB grad, Dr. Roland de Gouvenain (Ph.D. 2001) to South Africa to participate in the upcoming field season. At least one of the undergraduates will use this research to form part of his B.S. Honors thesis at Rhode Island College. The specific research is exploring functional trait and taxonomic diversity within and among communities in South Africa. This year the field crew will investigate the Succulent Karoo Biome.

John is the PI on a new NSF grant in collaboration with 4 other UCONN PIs: Jenica Allen (EEB), Mark Boyer, (Political Sciences), Kathy Segerson (Economics) and Chuanrong Zhang (Geography). The research will focus on the interactive effects of economics, public policy, land use change, and invasive plants in Long Island Sound watersheds. This research is being funded by NSF's Dynamics of Coupled Natural and Human Systems program

ELEVEN EEB LABS REPRESENTED AT 2014 UCONN FRONTIERS IN UNDERGRADUATE RESEARCH POSTER SESSION

Relationships Between Two Northeastern Bats, Myotis lucifugus and Eptesicus fuscus, and Landscape Structure
Ekaterina Morozova, Ecology and Evolutionary Biology
Advisor: Michael Willig, Director and Professor, Center for Environmental Sciences and Engineering

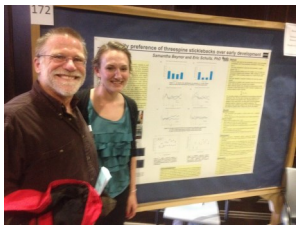
Centipedes of Connecticut: New Faunal Records
Joseph DeSisto, Ecology and Evolutionary Biology
Advisor: Jane O'Donnell, Invertebrate Collections Manager, Ecology and Evolutionary Biology



Species Identification of Oomycete Infections in New England Salamander Eggs
Alexis Cordone, Religion and Biological Sciences
Advisor: Mark Urban, Assistant Professor, Ecology and Evolutionary Biology
Advisor: Louise Lewis, Associate Professor, Ecology and Evolutionary Biology
Photo by Eric Schultz

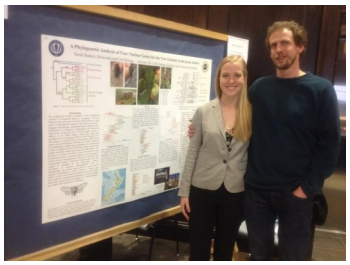
The Effects of Nectar Robbing in Colombia
Briana Lechkun, Natural Resources
Advisor: Margaret Rubega, Professor, Ecology & Evolutionary Biology

A Comparison of Traits in Native Alternatives to Invasive Plant Species
Kylie Martinod, Ecology & Evolutionary Biology
Advisor: John Silander, Professor Emeritus, Ecology and Evolutionary Biology



Salinity Preference of Threespine Stickleback over Early Development
Samantha Beynor, Biological Sciences
Advisor: Eric Schultz, Professor, Ecology and Evolutionary Biology

Do Visitors Affect Zebra Behavior in Zoos?
Christine Conte, Biological Sciences
Advisor: Chris Elphick, Associate Professor, Ecology and Evolutionary Biology

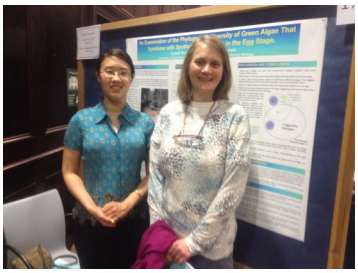


Gene Trees vs Species Trees: Piecing Together the Evolutionary History of the New Zealand Cicada Genus Kikihia
Sarah Banker, Molecular and Cell Biology
Advisor: Chris Simon, Professor, Ecology and Evolutionary Biology
Sarah with Geert Goemans, Ph.D. student in Chris Simon's lab
Photo by Eric Schultz

Effect of the Invasive Zebra Mussel on Rainbow Smelt Feeding Ecology in the Hudson River
Cody Roberge, Ecology and Evolutionary Biology
Advisor: Eric Schultz, Professor, Ecology and Evolutionary Biology

Investigation into the Development of Magicicada of Different Species throughout the Eastern United States
Erin Dwyer, Physiology and Neurobiology
Advisor: Chris Simon, Professor, Ecology and Evolutionary Biology

Phylogenetic Identification of Green Algae that Symbiose with Spotted Salamander Eggs
Crystal Xue, Molecular and Cell Biology
Advisor: Louise Lewis, Professor, Ecology and Evolutionary Biology
Photo by Eric Schultz



EEB Departmental awards were presented to graduate and undergraduate students in May 2014

Awards for botany research were granted from the Ronald Bamford Fund and the Francis Rice Trainor Endowment Fund: Simona Augyte, Hayley Kilroy, James Mickley, Nora Mitchell, Kerri Mocko, Timothy Moore, Ray Dustin, Hamid Razifard, Tanisha Williams, Ellen Woods.

Awards for invertebrate research were granted from the EEB Fund and the James A. Slater Fund: Russ Meister, Brigette Zacharzcenko.

Awards for vertebrate research were granted from the EEB Fund, George Clark Jr. Fund, Manter Fund, Ralph M. Wetzel Fund, and the John Rankin Scholarship Fund: Andrew Frank, Johana Goyes Vallejos, Jessie Rack, Heidi Golden, Michael Hutson and Jeff Divino.

Awards for conservation and biology research were granted from the Center for Conservation and Biodiversity: Graduates—Manette Sandor and Ellen Woods (who received the A.I. and A.N Silander Conservation and Biodiversity Award); Undergraduates—Kali Block and Zachary Skelton.

EEB STUDENT AWARDS

Chris Field, Ph.D. student in Dr. Chris Elphick's lab, received a Switzer Environmental Fellowship. The goal of the Switzer Environmental Fellowship Program is to "support highly talented graduate students in New England and California whose studies are directed toward improving environmental quality and who clearly demonstrate leadership potential in their field." In addition to the Switzer Fellowship, Chris was awarded a CLAS Graduate Fellowship as well as an EEB Bamford Fund Award this spring.

Cera Fisher, Ph.D. student in Dr. Eliazabeth Jockusch's lab, received a Sigma Xi Grant. She was also awarded a EEB & MNH James A. Slater Endowment Fund Award (Entomology)

Lily Lewis, Ph.D. student in Dr. Kent Holsinger's lab received a CLAS Graduate Fellowship.

Emily Behling, and undergraduate student working in Dr. Goffinet's lab, has received a NESCent Undergraduate Diversity at Evolution travel award to present her work at the 2014 Evolution meeting in Raleigh, NC in June. Emily has also received a 2014 UCONN SURF (Summer Undergraduate Research Fund) Grant and will work throughout the summer in Dr. Goffinet's lab.

Samantha Beynor, Biological Sciences major, received the 2014 Outstanding Senior in EEB Award.

Zachary Skelton and **Rebecca Colby**, undergraduates working in Dr. Eric Schultz's lab, received a 2014 UCONN SURF (Summer Undergraduate Research Fund) Grant and will work throughout the summer in his lab.

Aaron Rosman, undergraduate working in Dr. Don Les' lab, received a UCONN IDEA Grant. The UConn IDEA Grant Program awards undergraduates funding to support self-designed projects including artistic endeavors, community service initiatives, traditional research projects, entrepreneurial ventures, and other innovative projects.

Mohammed Sayeem, an EEB major working in Dr. Carl Schlichting's lab, received the Lt. Paul Drotch Memorial Scholarship given annually to high achievement undergraduate biology majors.