Department of Environmental and Forest Biology

Annual Report

Summer 2015
Academic Year 2015 – 2016

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**Introduction – Overview to Annual Report**

The topics and format of this annual report generally follow instructions from the Provost’s Office. Additional, brief material is included for readers external to ESF. Individual faculty annual reports, from which much of the information within the EFB Annual Report is directly taken, are available at: [http://www.esf.edu/efb/annualreports.htm](http://www.esf.edu/efb/annualreports.htm). Only a few of the many exciting activities and accomplishments within EFB the past academic year can be included in this brief summary.

Appendix A lists EFB faculty during the 2014-2015 Academic Year, including their rank, education, and scholarly interests. Numerous contributions by, and highlights of, the faculty follow throughout this report. Each faculty member’s summary (unedited) of their most significant accomplishments this past year is in Appendix B. Of the many faculty highlights this past year, only a few are included in this section.

We have hired Dr. Brian Leydet to support the growing Environmental Health undergraduate major at ESF, including teaching Epidemiology beginning this fall semester. His research examines the ecology of Lyme disease, including the role of ticks. Brian has a Ph.D. in Veterinary Medical Sciences from Louisiana State University, M.P.H. from the University of North Florida, and B.S. in Community Health from Old Dominion University.

John Castello continues to teach Forest and Shade Tree Pathology and the senior synthesis in Forest Health; co-teach (with S. Teale) Peoples, Plagues, and Pests, and Forest Health, and serve as coordinator of the Forest Health major. Jonathan Cohen has been very busy on the research front, now advising or co-advising five Ph.D. students and three M.S. students and managing $2.6 million in grants and is co-PI on another $2.9 million. Stew Diemont received the ESF College Foundation Award for Exceptional Achievement in Teaching and was promoted to Associate Professor and awarded Continuing Appointment (effective September 1, 2016). Martin Dovciak was invited to speak to the Mountain Research Initiative (MRI), a group of researchers working in mountain regions across the U.S. and globally, held in conjunction with the American Geosciences Union Fall Meeting in San Francisco to present his research on “Monitoring Changing Forests in Mountain Regions”. John Farrell secured a new five-year contract with the NYS-DEC for $1.4 million for research on novel population of and habitat restoration initiatives to support St. Lawrence River and Great Lakes fisheries, and was an author on the cover issue for Fisheries magazine in a feature article on muskellunge ecology and management.

Shannon Farrell has a number of funded research projects on the ecology and conservation of bats, and is developing a pilot project to study the ecology and population dynamics of American robins, as well as their prospective role as a reservoir for Lyme disease and potential agent of geographic dispersal of both Lyme disease and infected ticks. Danny Fernando served as EFB’s Graduate Program Director for his 9th year, gave two invited research presentations (a NSRC webinar and talk at Cornell), and was awarded the 2016 Jewett Prize from the Arnold Arboretum of Harvard University for his work on the hardy kiwi. Melissa Fierke taught over 300 students in General Biology last fall, was instrumental in co-developing and releasing EFB’s first ever Graduate Handbook, and has received additional funding to build her research program on the emerald ash borer. Beth Folta taught four interpretive courses and co-taught one additional courses that focused on interpretation and ecotourism, and was part of two faculty teams that were awarded grants, i.e., an EPA Environmental Education grant focused on stewardship education using the Haudenosaunee’s Thanksgiving Address as a lens to look at...
the natural world and The National Institute of Food and Agriculture grant to design a new graduate program at ESF that will focus on integrating indigenous and scientific knowledge.

Jacqui Frair was honored with a research collaboration award (Wings Across the Americas) from the USFS for her part in a large collaborative project assessing potential resistance to white-nose syndrome in bats in the central US, and worked with the College Foundation and Camp Fire Club of America to secure $685,000 towards a $1 million endowment for a new wildlife faculty line to the department. James Gibbs’ publication in PLoS describing a new species of giant tortoise and a field expedition in November to harvest hybrid tortoises of purportedly extinct species from Volcan Wolf garnered significant media attention. Among other highlights, James received the SUNY Chancellor’s Award for Scholarship and Creative Activities for 2016 and continued his work as co-Director on the $1.2 million Galapagos Tortoise Restoration Initiative (effort between the Galapagos Conservancy and the Galapagos National Park Service Directorate). Hyatt Green taught EFB 303 (Environmental Microbiology) and EFB 505 (Microbial Ecology) for his first time and has much interesting research emerging in his lab including receiving funds to study the “microbial dark matter” in Green Lake, hypothesized to play a role in the methylation of mercury.

Tom Horton published his book *Mycorrhizal Networks* (Springer’s Ecological Studies Series) and was awarded a McIntire-Stennis grant to conduct a research project on the role of mycorrhizal fungi and fire in plant succession at the Albany Pine Bush Preserve. Robin Kimmerer became co-Director (with Melissa Fierke) of the Cranberry Lake Biological Station, gave over 32 public presentations, was awarded two new grants (totaling over $700,000) as principal investigator, and continued as Director of The Center for Native Peoples and the Environment. Don Leopold finished his tenth year as Chair of the department; a highlight of his career (?) was giving an invited bourbon lecture on a private bus trip that started in New York City. Karin Limburg was a co-organizer and featured speaker of the Dale L. Travis lecture series, became a Visiting Professor at two different universities in Sweden, is part of a multi-million dollar project involving five different countries, and has become increasingly engaged in international research coordination efforts involving the “collision course” of human activities on continental margins and the worsening problem of loss of oxygen in the world’s oceans.

Mark Lomolino has begun new lines of research on Soundscape Ecology and on Palaeobiogeography, which are emerging disciplines focusing on the spatial and temporal variation in the sounds of nature, and patterns in geographic variation of life before the impacts of human activities. Besides his teaching and research activities, Greg McGee continued as EFB’s Undergraduate Curriculum Director and Curriculum Coordinator for the Environmental Biology major, responsible for the coordination of undergraduate advising for the department; providing departmental orientation to freshmen and August/January transfer cohorts; pre-registration of all transfer students; representing EFB at two end-of-semester Academic Standards meetings; organizing and participating in two departmental open houses and five accepted student receptions, and maintaining EFB program catalog descriptions, plan sheets and directed elective offerings for all seven majors. Stacy McNulty solicited and edited manuscripts for and assisted with managing publication of a special volume of *Adirondack Journal of Environmental Studies*, including over a dozen peer-reviewed articles about ornithological topics.

Lee Newman continues to lead ESF’s Environmental Health programs (including the undergrad major), her NASA-funded research on hyperspectral imaging of plants to detect stress and contaminant exposure, and her significant community work on using horticultural therapy to improve quality of life for veterans and seniors. Dylan Parry stepped down as coordinator for
the department’s Conservation Biology major then assumed the role of Director of the Graduate Program in Environmental Science; additionally, Dylan continues his collaboration with other scientists to examine the effects of climatic shifts on invasive insects. Gord Paterson taught Toxic Health Hazards, co-taught the Adaptive Peaks Graduate Seminar course and Tropical Ecology, recruited two graduate students to work on projects in the Finger Lakes and Lake Ontario, and was invited to present a research proposal to the Great Lakes Fishery Commission’s Board of Technical Experts. Bill Powell’s (with FNRM colleague, Chuck Maynard) American chestnut research program led to 38 news articles in some of the most prominent outlets including The New York, National Geographic, New York Times, Wall Street Journal and Smithsonian. Beyond his many duties as Vice Provost for Research, Neil Ringler finished four graduate students who were supported on grants from NY Sea Grant and Honeywell.

Rebecca Rundell was an invited panelist and speaker for the “The Tree of Life: State of the Art” discussion at Ithaca’s Darwin Days 2016, served as proofreader and reviewer for the third edition of Brusca et al.’s *Invertebrates* (Sinauer Associates), asked to serve as Associate Editor for *Malacologia*, and invited to speak at the American Malacological Society Annual Meeting at the University of Michigan Biological Station. Kim Schulz taught Limnology and Marine Ecology, directed the new CIRTAS facility in Illick, chaired the department’s Course and Curriculum Assessment Committee, and published six manuscripts. Steve Teale and his lab have been very productive, publishing a paper in PLoS One on the identification of a pheromone of the citrus longhorned beetle (a potential invasive from China that is significantly more threatening than the Asian longhorned beetle), developing a synthetic lure for *Philornis downsi* (a parasite of Darwin’s finches in the Galapagos), and publishing a paper on self-medication with the endemic plant, *Psidium galapageum*, by Darwin’s finches that repels parasites.

In collaboration with others from Ben-Gurion University of the Negev, National Museum of Namibia, and Gobabeb Desert Research and Training Centre, Namibia) Scott Turner launched a new hybrid online/field course, “Biophysical Field Methods”, a course that has an online component, which culminates in a capstone field research experience at the Gobabeb Desert Research and Training Centre in Namibia. Alex Weir was promoted to Professor, offered a new class on the biology of lichens, and is coordinating a huge effort involving 6 undergraduates and one graduate student to digitize the microfungal collections in the ESF Mycological Herbarium. Chris Whipp was invited to serve as an Associate Editor for the Journal of Parasitology, chaired the successful Disease Ecology/Epidemiology search, and continues to chair ESF’s Institutional Animal Care and Use Committee (IACUC).

Among the over 600 undergraduates in EFB, seniors Margaret Foley and Fareya Zubair distinguished themselves by receiving the SUNY Chancellor’s Awards for Student Excellence. Seamus McKenney was named the Environmental and Forest Biology Departmental Scholar. The ESF Chapter of The Wildlife Society (team members Allison Smith, Kim Savides, Heather Swenson, and James Lee) beat 13 other teams to win Northeast Conclave Quiz Bowl of TWS. Thomas Evans (K. Limburg, major professor) was selected by the faculty as the department’s outstanding doctoral student.

Dale L. Travis lectures were again very successful. On Halloween, Karin Limburg gathered a group of scientists, artists, and filmmakers to discuss fish conservation. In March, about 400 people attended Neil Ringler’s presentation on decades of Onondaga Lake research and importance of collaboration.

Undergraduate and graduate enrollments and quality, external funding to the department, and worldwide attention in the media have never been better. I hope that you agree after reading
this brief summary that the Department of Environmental and Forest Biology is doing well, because of its excellent students, successful alumni, fine faculty, and dedicated staff. Please let us know how you are doing, and visit us during the annual Fall BBQ Weekend/Senior Reunion on October 7 to 8. You can contact me directly at djleopold@esf.edu or 315-470-6760.

Building(s)
After over seven years of regular meetings the groundbreaking for the Academic Research Building, home for about one-third of the EFB faculty and adjacent to Illick Hall, is supposed to take place at the end of the spring 2017 semester, with completion about two years thereafter. This new building will occupy most of the space east of Illick and Oak Leaf Drive. As part of this construction, the quad will be landscaped to better integrate the buildings with campus plantings, and provide numerous examples of green infrastructure and a sustainable landscape.

Teaching

Summary of main courses taught by faculty and enrollment in each course
(as reported by each; does not include 420, 495, 498, 499, 798, 899, 999; Course prefix EFB unless otherwise noted)

<table>
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<th>Course #</th>
<th>Course Name</th>
<th>Enrollment</th>
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<td>Castello</td>
<td>217 (0.5)</td>
<td>Peoples, Plagues, &amp; Pests</td>
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<tr>
<td></td>
<td>340</td>
<td>Forest &amp; Shade Tree Pathology</td>
<td>33</td>
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<td></td>
<td>345</td>
<td>Forest Health – CLBS</td>
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<td></td>
<td>494</td>
<td>Senior Synthesis Forest Health</td>
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<td>Cohen</td>
<td>493/693</td>
<td>Wildlife Habitats and Populations</td>
<td>58</td>
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<tr>
<td></td>
<td>796</td>
<td>WinBUGS for Ecologists</td>
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<td></td>
<td>797</td>
<td>Core Seminar</td>
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<td></td>
<td>797 (0.5)</td>
<td>Classic Readings in Population Ecology</td>
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<tr>
<td>Diemont</td>
<td>120</td>
<td>Global Env/Evol. Human Soc.</td>
<td>101</td>
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<tr>
<td></td>
<td>496/796</td>
<td>Restoring Ecosystems: Princ. &amp; Prac.</td>
<td>13</td>
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<td></td>
<td>496/796</td>
<td>Princ. of Restoring Ecosystems</td>
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<td></td>
<td>518</td>
<td>Systems Ecology</td>
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<td>(EST) 797 (0.5)</td>
<td>Complex Adaptive Systems</td>
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<td>Dovciak</td>
<td>435/635</td>
<td>Flowering Plants: Diversity, Evol., &amp; Syst.</td>
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<td></td>
<td>445/645</td>
<td>Plant Ecology &amp; Global Change</td>
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<td>Farrell, J.</td>
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<td>Ecology of Adirondack Fishes – CLBS</td>
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<td>492</td>
<td>Senior Synthesis AFS</td>
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<td>Farrell, S.</td>
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<td>Ecological Monitoring .. (CLBS – 2 days)</td>
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<td>482/796</td>
<td>Ornithology</td>
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<td>Wildlife Ecology &amp; Management</td>
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<td>Adaptive Peaks Grad Seminar (fall)</td>
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<td>Fernando</td>
<td>Diversity of Plants</td>
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<td>Anatomy and Development of Plants</td>
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<td>427/627</td>
<td>Research Design &amp; Prof Development</td>
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<td>Fierke</td>
<td>General Biology Lecture I</td>
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<td>Entomol, Stats, Projects (13 days)</td>
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<td>Systematic Entomology</td>
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<td>Applied Wildlife Science</td>
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<td>Problem-solving in Conservation Biology</td>
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<td>Green</td>
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<td>Horton</td>
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<td>Advanced Mycology: Basidiomycetes</td>
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<td>Field Ethnobotany – CLBS</td>
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<td>Ecology of Mosses</td>
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<td>Indigenous Environmental Leaders Future</td>
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<td>Wetlands of the Adirondacks</td>
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<td>Limburg</td>
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<td>The Hudson River Watershed</td>
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<td>Ecological Modeling</td>
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<td>Melting in the Anthropocene</td>
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<td>Sharing a River to Save It</td>
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<td>Migration Ecology of Marine Fishes</td>
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<td>Lomolino</td>
<td>Mammal Diversity</td>
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<td>Classic Readings in Biog., Ecol., and Evol.</td>
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<td>General Biology Lab I</td>
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<td>General Biology Lab II</td>
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<td>Orientation Seminar: EFB</td>
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<td>Ecological Monitor. Biodiversity Assess. (4 days)</td>
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<td>Winter Mammalian Ecology</td>
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<td>Cell Biology</td>
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<td>496/796</td>
<td>Plant Physiology Recitation</td>
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<td>496/796</td>
<td>Phytoremediation</td>
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<td>496/796</td>
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<td>Ecol. Monitor., Entomology</td>
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<td>(FSC) 462/662 Forensic Entomology</td>
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<td>502</td>
<td>Ecology &amp; Mgt. Invasive Species</td>
<td>31</td>
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<tr>
<td></td>
<td>797</td>
<td>Insects/Climate Change</td>
<td>10</td>
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<tr>
<td>Paterson</td>
<td>202</td>
<td>Ecol. Monitoring &amp; Assess.</td>
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<tr>
<td></td>
<td>400/600</td>
<td>Toxic Health Hazards</td>
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<td></td>
<td>(ENS) 470</td>
<td>Environmental Risk Assessment</td>
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<td></td>
<td>523 (0.5)</td>
<td>Tropical Ecology</td>
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<tr>
<td></td>
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<td>Special Topics in Environmental Toxicology</td>
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<td></td>
<td>797</td>
<td>Adaptive Peaks Grad Seminar (fall)</td>
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<td></td>
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<td>Adaptive Peaks Grad Seminar (spring)</td>
<td>9</td>
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<td></td>
<td>797 (0.33)</td>
<td>Hydrology and Biogeochemistry</td>
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<tr>
<td>Powell</td>
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<td>Orientation Seminar</td>
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<tr>
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<td>307</td>
<td>Principles of Genetics</td>
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<td>Genetics Lab</td>
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<td></td>
<td>(BTC) 425/EFB 625 Plant Biotechnology</td>
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<td>554</td>
<td>Aquatic Entomology</td>
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<td>Rundell</td>
<td>311</td>
<td>Principles of Evolution</td>
<td>142</td>
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<td>355</td>
<td>Invertebrate Zoology</td>
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<td>Schulz</td>
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<td>Marine Ecology</td>
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<td>424/624</td>
<td>Limnology: Study of Inland Waters</td>
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<td></td>
<td>497</td>
<td>Advanced Topics in Marine Ecology</td>
<td>2</td>
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<td>Limnology Practicum</td>
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<td>Ichthyology</td>
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<td>(no report)</td>
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<td>796</td>
<td>Advanced Ichthyology</td>
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<td>Teale</td>
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<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------</td>
<td>---------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td></td>
<td>217 (0.5)</td>
<td>Peoples, Plagues and Pests</td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>345 (0.5)</td>
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<td></td>
<td>352/552</td>
<td>Entomology</td>
<td>57</td>
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<td>Chemical Ecology Insect-Host-Micro…</td>
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<tr>
<td></td>
<td>200</td>
<td>Physics of Life</td>
<td>20 (summer)</td>
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<td></td>
<td>200</td>
<td>Physics of Life</td>
<td>148 (fall)</td>
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<tr>
<td></td>
<td>462/662</td>
<td>Animal Physiology: Environ. &amp; Ecol.</td>
<td>35</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>496 (0.5)</td>
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<table>
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<td>202</td>
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<tr>
<td></td>
<td>342</td>
<td>Fungal Diversity and Ecology – CLBS</td>
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<tr>
<td></td>
<td>440/640</td>
<td>Mycology</td>
<td>48</td>
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<tr>
<td></td>
<td>496/796</td>
<td>Biology of Lichens</td>
<td>23</td>
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<td></td>
<td>500</td>
<td>Forest Biol Field Trip – Ireland</td>
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<th>Credits</th>
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<td></td>
<td>103</td>
<td>General Biology II: Cell Biology and Gen.</td>
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<td></td>
<td>453/653</td>
<td>Parasitology</td>
<td>25</td>
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<tr>
<td></td>
<td>797</td>
<td>Host-Pathogen Interactions</td>
<td>4</td>
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<tr>
<td></td>
<td>797</td>
<td>Population Genetics</td>
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**Courses by Instructional Support Specialists, Adjuncts, & Visiting Instructors**

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<th>Adams</th>
<th>Course ID</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
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<tr>
<td>(0.5)</td>
<td>210</td>
<td>Diversity of Life I</td>
<td>188</td>
</tr>
<tr>
<td>(0.5)</td>
<td>211</td>
<td>Diversity of Life II</td>
<td>189</td>
</tr>
</tbody>
</table>

| Beal           |           |                                                  |         |
|               | 120       | Global Environment                                | 91      |

| Evans          |           |                                                  |         |
|               | 496/796   | Dinosaurs                                         | 13      |

| Ettinger       |           |                                                  |         |
|               | 437/637   | Plant Propagation                                 | 16      |

| Folta, J.      |           |                                                  |         |
|               | 496       | Issues in Mgt. & Conflict Resolut.               | 18      |

| Giegerich      |           |                                                  |         |
|               | 381       | Vertebrate Museum Techniques                      | 11      |

| LaPan          |           |                                                  |         |
|               | 485       | Herpetology                                       | 60      |

| Marshall       |           |                                                  |         |
|               | 414       | Senior Synthesis Cons. Biology                   | 65      |

| Powrozek       |           |                                                  |         |
|               | 480       | Principles of Animal Behavior                     | 52      |

| Raney          |           |                                                  |         |
|               | 542       | Freshwater Wetland Ecosystems                     | 71      |

| Schummer       |           |                                                  |         |
|               | 496/692   | Ecology and Management of Waterfowl              | 34      |

| Weber          |           |                                                  |         |
| (0.5)         | 210       | Diversity of Life I                              | 188     |
| (0.5)         | 211       | Diversity of Life II                             | 189     |
Course teaching load summary by faculty members

The following data are from the Faculty “Provost Resource Allocation Model (sent 8/8/16) by Sophie Gublo-Jantzen, and summarize the number of students multiplied by the number of credit hours for courses categorized as Research (e.g., EFB 498, 798, 899, 999), Problems/Seminars (e.g., EFB 420, 495, 797), and regular classes. The first number in each column is for undergraduate credit hours, the second for graduate. Co-taught courses yield the number of credit hours for that course divided by number of instructors. All courses are credited, regardless of departmental prefix. Note that although these data come from an administrative report titled “Resource Allocation Model”, only the teaching portion of a faculty member’s complete workload is included in that report.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Research CH</th>
<th>Prob./Sem. CH</th>
<th>Class CH</th>
<th>Total (U/G)</th>
</tr>
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<tbody>
<tr>
<td>Fierke (1*)</td>
<td>16/40</td>
<td>24/16</td>
<td>946/23</td>
<td>1065 (986/79)</td>
</tr>
<tr>
<td>Horton (2)</td>
<td>15/15</td>
<td>22/0</td>
<td>988/4</td>
<td>1044 (1025/19)</td>
</tr>
<tr>
<td>Powell (3)</td>
<td>13/40</td>
<td>15/6</td>
<td>783/6</td>
<td>863 (811/52)</td>
</tr>
<tr>
<td>Rundell (4)</td>
<td>4/32</td>
<td>45/0</td>
<td>599/8</td>
<td>688 (648/40)</td>
</tr>
<tr>
<td>Whipps (4)</td>
<td>19/28</td>
<td>24/16</td>
<td>583/18</td>
<td>688 (626/62)</td>
</tr>
<tr>
<td>Farrell, S. (6)</td>
<td>22/12</td>
<td>12/25</td>
<td>597/4</td>
<td>672 (631/41)</td>
</tr>
<tr>
<td>McGee (7)</td>
<td>12/5</td>
<td>112/0</td>
<td>530/2</td>
<td>661 (654/7)</td>
</tr>
<tr>
<td>Turner (8)</td>
<td>0/0</td>
<td>9/0</td>
<td>630/12</td>
<td>651 (639/12)</td>
</tr>
<tr>
<td>Schulz (9)</td>
<td>1/7</td>
<td>16/0</td>
<td>576/33</td>
<td>633 (593/40)</td>
</tr>
<tr>
<td>Newman (10)</td>
<td>73/57</td>
<td>57/0</td>
<td>378/23</td>
<td>588 (508/80)</td>
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<tr>
<td>Leopold (11)</td>
<td>1/94</td>
<td>30/6</td>
<td>429/3</td>
<td>563 (460/103)</td>
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<tr>
<td>Gibbs (12)</td>
<td>9/49</td>
<td>25/1</td>
<td>475/0</td>
<td>559 (509/50)</td>
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<tr>
<td>Diemont (13)</td>
<td>0/28</td>
<td>5/2</td>
<td>400/41</td>
<td>476 (405/71)</td>
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<tr>
<td>Teale (14)</td>
<td>20/63</td>
<td>8/8</td>
<td>365/15</td>
<td>470 (384/86)</td>
</tr>
<tr>
<td>Cohen (15)</td>
<td>8/96</td>
<td>9/13</td>
<td>249/58</td>
<td>433 (266/167)</td>
</tr>
<tr>
<td>Folta (16)</td>
<td>4/19</td>
<td>14/7</td>
<td>248/33</td>
<td>325 (266/59)</td>
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<tr>
<td>Weir (17)</td>
<td>7/9</td>
<td>36/3</td>
<td>249/15</td>
<td>319 (292/27)</td>
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<td>Castello (18)</td>
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<td>13/0</td>
<td>295/3</td>
<td>315 (308/7)</td>
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<td>Kimmerer (19)</td>
<td>2/18</td>
<td>13/6</td>
<td>211/27</td>
<td>277 (226/51)</td>
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<tr>
<td>Fernando (20)</td>
<td>15/23</td>
<td>40/0</td>
<td>192/2</td>
<td>272 (247/25)</td>
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<tr>
<td>Green (21)</td>
<td>9/0</td>
<td>10/0</td>
<td>192/52</td>
<td>263 (211/52)</td>
</tr>
<tr>
<td>Stewart (22)</td>
<td>9/7</td>
<td>3/0</td>
<td>207/12</td>
<td>238 (219/19)</td>
</tr>
<tr>
<td>Dovciak (23)</td>
<td>2/25</td>
<td>17/0</td>
<td>144/48</td>
<td>236 (163/73)</td>
</tr>
<tr>
<td>Frair (24)</td>
<td>3/24</td>
<td>16/5</td>
<td>142/34</td>
<td>224 (161/63)</td>
</tr>
<tr>
<td>Parry (25)</td>
<td>3/18</td>
<td>25/10</td>
<td>136/18</td>
<td>210 (164/46)</td>
</tr>
<tr>
<td>Paterson (26)</td>
<td>0/5</td>
<td>13/19</td>
<td>146/24</td>
<td>207 (159/48)</td>
</tr>
<tr>
<td>Lomolino (27)</td>
<td>0/0</td>
<td>3/17</td>
<td>176/4</td>
<td>200 (179/21)</td>
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<tr>
<td>Ringler (28)</td>
<td>6/19</td>
<td>6/0</td>
<td>135/9</td>
<td>175 (147/28)</td>
</tr>
<tr>
<td>Limburg (29)</td>
<td>5/16</td>
<td>20/14</td>
<td>86/21</td>
<td>162 (111/51)</td>
</tr>
<tr>
<td>Farrell, J. (30)</td>
<td>0/19</td>
<td>5/0</td>
<td>54/0</td>
<td>78 (59/19)</td>
</tr>
<tr>
<td>McNulty (31)</td>
<td>8/11</td>
<td>0/0</td>
<td>33/15</td>
<td>67 (41/26)</td>
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</table>

*rank out of all faculty; 1 highest, 31 lowest  
** sabbatical leave during time period
Teaching Load Statistics by Adjunct Faculty, Emeriti, Instructional Support Specialists, AEC Staff, Visiting Instructors, etc.

<table>
<thead>
<tr>
<th>Name</th>
<th>Teaching Load (Credit Hours)</th>
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<tbody>
<tr>
<td>Adams</td>
<td>29/0 1131/0 1160 (1160/0)</td>
</tr>
<tr>
<td>Bastille-Rousseau</td>
<td>0/0 29/0 324/0 324 (324/0)</td>
</tr>
<tr>
<td>Beal</td>
<td>0/0 0/0 33/0 33 (33/0)</td>
</tr>
<tr>
<td>Brainard</td>
<td>0/0 0/0 5/3 45/3 52 (49/3)</td>
</tr>
<tr>
<td>Ettinger</td>
<td>0/0 0/0 22/4 26 (22/4)</td>
</tr>
<tr>
<td>Evans</td>
<td>0/0 0/0 438/0 438 (438/0)</td>
</tr>
<tr>
<td>Fiene</td>
<td>0/0 36/18 57 (39/18)</td>
</tr>
<tr>
<td>Folta, J.</td>
<td>0/0 0/0 48/3 51 (48/3)</td>
</tr>
<tr>
<td>Giegerich</td>
<td>0/0 0/0 222/3 225 (222/3)</td>
</tr>
<tr>
<td>Hager</td>
<td>0/0 0/0 246/27 246 (246/0)</td>
</tr>
<tr>
<td>Helenbrook</td>
<td>0/0 0/0 30/0 36 (36/0)</td>
</tr>
<tr>
<td>Hough</td>
<td>0/0 0/0 87/21 108 (87/21)</td>
</tr>
<tr>
<td>LaPan</td>
<td>0/0 0/0 208/0 208 (208/0)</td>
</tr>
<tr>
<td>Marshall</td>
<td>0/0 0/0 180/33 213 (180/33)</td>
</tr>
<tr>
<td>Noori</td>
<td>0/0 0/0 75/27 105 (78/27)</td>
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<tr>
<td>Powrozek</td>
<td>0/0 0/0 5/14 70 (15/55)</td>
</tr>
<tr>
<td>Raney</td>
<td>0/0 0/0 1131/0 1131 (1131/0)</td>
</tr>
</tbody>
</table>

Dr. Fierke had the highest teaching workload (1065 total credit hours), followed by Drs. Horton (1044), Powell (863), Rundell (688), and Whipps (688). EFB faculty was responsible for 13,532 credit hours (versus 12,429 last reporting period) of instruction, an average of 437 credit hours per faculty per year (vs. 401 hours last reporting period). Another 4556 credit hours were delivered by Visiting Instructors and others (versus 5185 in last reporting period) for an EFB total of 18,088 credit hours (vs. 17,614 credit hours last reporting period). Using the total number of credit hours for the past year (i.e., 61,286) as provided by Sophie Gublo-Jantzen, these EFB credit hours are nearly 30% (28% last year) of the total credit hours generated by all departments during this reporting period.

Undergraduate Student Advising Loads

Listed below is the number of undergraduate advisees assigned to each faculty member, as reported by that faculty member. EFB faculty advise their students from the time the students matriculate at ESF until they graduate. Some faculty members also regularly and informally advise a much larger number of undergraduates, and some advise ESC undergraduate students. Advisees are temporarily reassigned to other faculty during an advisor’s sabbatical leave.
Curriculum changes
There have been no significant changes in the curriculum for any of EFB’s seven majors.

Undergraduate students enrolled in each EFB major
Enrollment numbers change throughout the year, especially after December and May graduations, e.g., there were 639 EFB undergraduate students enrolled in classes during the fall ’14 semester and 591 registered for the spring ’15 semester (versus 631 and 596, respectively, fall ’13 and spring ’14; 639 undergraduates is the second largest number in the history of the department – the greatest number enrolled (641) was during the fall ’12 semester. The third largest number of 634 enrolled at the beginning of fall ’13). The total number of undergraduates in EFB represented over 38% of all full and part-time undergraduates (1680) at ESF last fall.

Fall ’15 undergraduate enrollments (and percent of total) in each major were:

- Conservation Biology: 191 (30%)
- Environmental Biology: 169 (26%)
- Wildlife Science: 131 (21%)
- Biotechnology: 69 (11%)
- Aquatic and Fisheries Science: 45 (7%)
- Environmental Ed. & Interpretation: 22 (3%)
- Forest Health: 12 (2%)

Total 639 undergraduates in EFB (fall ’15)

Listing of awards and recognition
Stewart Diemont: ESF College Foundation Award for Exceptional Achievement in Teaching

Research/Scholarship

Summary of publications/presentations
Appendix C lists books and refereed publications of the EFB faculty; papers submitted, in review, or pending decision are shown in Appendix D. Presentations by EFB faculty at science meetings are shown in Appendix E. Other products of scholarship are shown in Appendix L (Miscellaneous Publications…).
Science Citation Indices
Scholarly Metrics (written by Jessica Clemons, Senior Assistant Librarian and Interim Director, Moon Library, and liaison to the department)

The impact of one’s overall publication record can be assessed by a variety of citation indices. The tools used for this analysis include Scopus, a subscription database from Elsevier, and Google Scholar, a freely available database.

Citation analysis is a tool by which faculty can gauge the impact and visibility of their work on the scholarly community, and the relative influence of their research. Scopus is the world’s largest abstract and citation database containing peer-reviewed research and other scholarly sources. Scopus includes over 57 million records from journals, conference proceedings, books, and patents. Content is expanding but inconsistent prior to 1996. Google Scholar offers additional insight into the analysis of research impact. Some faculty have chosen to set up their profiles in Google Scholar which offers additional insight and visibility. Google Scholar aims to index all of the peer-reviewed research and scholarly literature available on the web from any time period.

The databases referenced above do not correct errors in citing papers. This means that one paper may be cited several different ways and appear as separate entries. These tools concatenate citation when possible but there are inevitable errors. Also, author and institutional naming inconsistencies complicate these analyses. Comparisons between these tools should be avoided. They should be seen as complementary. The databases use different sources to generate data and some are more comprehensive than others.

The Hirsch index, or h-index, has become the standard accepted measurement of academic output and can be generated in both Scopus and Google Scholar. The h-index is defined as: A scientist has index h if h of his/her Np papers have at least h citations each and the other (Np − h) papers have no more than h citations each. However, the h-index has significant limitations in terms of what it measures: (1) it does not include citations to the same work that have small mistakes in their referencing (of which for some publications there are many); (2) it only includes citation to journal articles (not to books, book chapters, working papers, reports, etc.); and, (3) it only includes citations in journals that are listed in the database being searched, which is never comprehensive of academic journals in the field. Therefore, the h-index should be viewed as one metric among many in considering academic output and productivity.

In addition to the h-index, faculty 1, 5, and 10 year citation numbers are included to provide a more meaningful understanding of their work. The total number of documents in the databases is included which may offer more context of faculty work. This table was generated by Jessica Clemons, Senior Assistant Librarian in, and Interim Director of, Moon Library, and liaison to the department.

Using the number of citations for 2006 to 2015 as determined by Scopus, Dr. Karin Limburg had the highest number of citations followed by Drs. James Gibbs, Tom Horton, Mark Lomolino, and Jacqui Frair. Using this same data base for only last year, Dr. Karin Limburg had the highest number of citations followed by James Gibbs, Jacqui Frair, Tom Horton, and Mark Lomolino.
<table>
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<tr>
<td>Castello, John</td>
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<td>170</td>
<td>325</td>
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<td>336</td>
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<td></td>
</tr>
<tr>
<td>Cohen, Jonathan</td>
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<td>139</td>
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<td>18</td>
<td>32</td>
<td>147</td>
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Summary of grant activity

From July 1, 2015 to June 30, 2016, EFB submitted 41.1% of all proposals (of 234 total) submitted by all units (academic and non-academic) at ESF. These EFB proposals represent 34.5% of the $40,292,215 amount for all proposals submitted by all units to the ESF Office of Research Programs. The average amount per EFB proposal was $44,525. By the end of this reporting period, 26% of EFB proposals submitted during this period (for $3,041,826) have already been awarded, with another nearly 61% still pending (for $9,323,281) and 13% rejected (for $1,540,623).

The proposal submission activity of each faculty member for the 12 month period ending June 30, 2016 follows. Dr. J. Cohen had the highest credited number of proposals submitted, followed by Drs. L. Newman, N. Ringler, S. Farrell and J. Gibbs. Dr. J. Farrell had the highest credited dollar amount of proposals submitted, followed by Drs. S. Turner, N. Ringler, and L. Newman.

Proposal Activity Summary by PI/CoPI
(12-Month Period ending 6/30/16)

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* credit percentages are calculated by ORP to distribute credit for award and proposal activity to each faculty member identified as a PI or CoPI on each Sponsored Program proposal or award, as well as their respective college Departments. As an initial starting point this fiscal year, ORP has issued credit as follows: the identified Principal Investigator of a proposal or award will receive 2-parts credit and each coPrincipal Investigator will receive 1-part credit. For example: For a proposal or award with a PI and two CoPIs, the PI and his/her respective Faculty will receive $2/4=50\%$ credit, and each CoPI and respective Faculty would receive $\frac{1}{4}=25\%$ credit, for all sponsored program activities. This procedure generally results in fractional numbers of proposal/awards credited to each faculty member and his/her respective college Department, as well as the respective fractional portion of the total proposal, award or expenditure amount.
**rank by credited amount; 1 highest, 30 lowest**

Appendix F lists all active grants of each EFB faculty. For the 12-month period ending June 30, 2016, EFB accounted for 46\% of all active sponsored research projects (of 420 total) submitted by all units at ESF, versus nearly the same \% during the previous reporting period, and nearly 50\% of the $15,307,676 of all sponsored program expenditures by all units at ESF. The average amount of expenditure per project was $39,147 versus $27,209 in the last reporting period.

Sponsored program expenditure activity by PI/coPI among EFB faculty for the 12-month reporting period ending 6/30/16 follows. Dr. Cohen had the highest credited number of program expenditures, followed by Drs. Leopold, Frair, Limburg, and W. Powell. Dr. Cohen had the highest credited dollar amount of program expenditures, followed by Drs. Frair, Ringler, Gibbs, and Powell.

Sponsored Program Expenditure Activity Summary by PI/CoPI
(12-Month Period ending 6/30/16)

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<td>Frair, Jacqueline</td>
<td>11.12</td>
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<td>$326,845 (4)</td>
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<td>Green, Hyatt</td>
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<td>$1,990 (28)</td>
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<tr>
<td>Horton, Thomas</td>
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<td>Kimmerer, Robin</td>
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<tr>
<td>Leopold, Donald</td>
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<td>$178,749 (11)</td>
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<td>Limburg, Karin</td>
<td>9.67</td>
<td>$203,773 (9)</td>
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<tr>
<td>Lomolino, Mark</td>
<td>1.00</td>
<td>$6,504 (23)</td>
</tr>
<tr>
<td>McGee, Gregory</td>
<td>4.20</td>
<td>$35,773 (20)</td>
</tr>
<tr>
<td>Newman, Lee</td>
<td>6.37</td>
<td>$137,101 (12)</td>
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</table>
Parry, Dylan  
4.67 $60,209 (17)
Paterson, Gordon  
0.00 $0 (31)
Powell, William  
8.33 $311,945 (5)
Ringler, Neil  
8.25 $522,466 (3)
Rundell, Rebecca  
1.00 $31,439 (21)
Schulz, Kimberly  
2.00 $1,532 (29)
Stewart, Donald  
1.00 $6,010 (24)
Teale, Stephen  
8.25 $230,284 (8)
Turner, Scott  
2.00 $119,502 (13)
Weir, Alexander  
1.00 $27,167 (22)
Whipps, Christopher  
2.33 $271,402 (6)

*rank by credited amount; 1 highest, 31 lowest

**Patents and Patent Applications**

**Listing of Awards and Recognition**

A. Darrah and J. Cohen: Scott Melvin Award for Most Valuable Contribution to Applied Piping Plover Conservation. Atlantic Coast Piping Plover/Least Tern Workshop
Jacqueline L. Frair: USFS Wings Across the America Research Partnership Award
James P. Gibbs: SUNY Chancellor’s Award for Excellence in Scholarship and Creative Activities
Karin E. Limburg: Visiting Professor, Department of Aquatic Resources, Swedish University of Agricultural Sciences (SLU); 5/2015 – 4/2018.
Karin E. Limburg: Lise Meitner Visiting Professor, Division of Nuclear Physics, Dept. of Physics, Lund University; 11/2015 – 10/2018.
Rebecca Rundell: Research Associate, Paleontological Research Institution, Ithaca, New York (3-yr term beginning January 2015)
Rebecca Rundell: Research Associate, Carnegie Museum of Natural History, Pittsburgh, PA

**Outreach and Service**

**Service to the department, college, and university**

A summary of service by each faculty member to the department, college, and university is given in Appendix G.

**Enumeration of outreach activities**

Appendix H shows unfunded service by EFB faculty to government agencies, public interest groups, etc. This list does not include the many hours of outreach made by our Instructional Support Specialists, graduate students, and undergraduate students. For example, the Instructional Support Specialists who manage our Roosevelt Wildlife Collection and the Illick greenhouses (Ron Giegerich and Terry Ettinger, respectively) host numerous tours for the ESF community (e.g., Family & Friends Barbeque, Annual Alumni Tour, college visitors which include many school groups).

Besides the numerous phone and email inquiries that faculty receive from the public, news channels, and newspapers, Ron Giegerich, Terry Ettinger, and Kim Adams respond to
many similar requests for information from these sources. For example, Kim Adams receives hundreds of requests for information. Terry Ettinger assisted in the development and delivery of dozens of episodes of the ESF/Time Warner Cable “Going Green” collaboration which is broadcast weekly across all of upstate New York, western Massachusetts, and northern Pennsylvania and available on the web.

Although there are no data to support this claim, the Department generates more print in the Syracuse Post-Standard than all other academic departments combined, and all other offices at ESF (except for the Top 10 Species List) and Syracuse University (except their athletic programs). Most of the dozens of local newspaper articles of this past year are posted in the main foyer of Illick. Much media attention often comes from beyond central New York. In this past reporting period, Elizabeth Kolbert (who won the 2015 Pulitzer Prize for general nonfiction) wrote an article in The New Yorker, featuring the American chestnut research being done by Bill Powell and Chuck Maynard. Increasingly, important web sites are featuring work done by EFB faculty. This increased national attention by EFB faculty has resulted in tens of thousands of new viewers to ESF web pages.

Unfunded service to professional societies and organizations is summarized in Appendix I. Appendix J summarizes the funded service by EFB faculty to government agencies, public interest groups, etc. Appendix K lists the presentations made to the public by EFB faculty and Appendix L includes miscellaneous publications and outreach materials.

**Summary of grant panel service (by agency)**
K. Schulz: National Science Foundation Panel

**Summary of journal editorial board service**
*Applied Vegetation Science*: M. Dovciak  
*Bio-Complexity*: S. Turner  
*Bulletin of Environmental Contamination & Toxicology*: G. Paterson  
*Ecology and Society*: K. Limburg  
*Ecology of Freshwater Fish*: N. Ringler  
*Estuaries and Coasts*: K. Limburg  
*Forest Science*: M. Fierke (Associate Editor)  
*Frontier of Biogeography*, Monographs in Biogeography: M. Lomolino (Editor)  
*Frontiers in Ecology and Evolution* (Chem. Ecol.): S. Teale (Review Editor)  
*Frontiers in Ecology and the Environment*: K. Limburg  
*Intelligent Buildings International*: S. Turner (Guest Editor)  
*International Journal of Phytoremediation*: L. Newman (co-Editor-in-Chief)  
*Journal of Applied Ecology*: J. Frair (Associate Editor)  
*Journal of Parasitology*: C. Whipps  
*Journal of Vegetation Science*: M. Dovciak  
*Malacologia*: R. Rundell  
*Mycorrhiza*: T. Horton  
*Phytoremediation: Management of Environmental Contaminants*: L. Newman  
*The Canadian Entomologist*: D. Parry
Number of journal manuscripts reviewed by faculty (#journals/total #manuscripts reviewed; excludes reviews of NSF, EPA, USDA, McIntire-Stennis, state agency, etc. proposals)

<table>
<thead>
<tr>
<th>Name</th>
<th>Manuscripts Reviewed</th>
</tr>
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<tr>
<td>Castello, J.</td>
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<td>Cohen, J.</td>
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</tr>
<tr>
<td>Diemont, S.</td>
<td>2/4</td>
</tr>
<tr>
<td>Dovciak, M.</td>
<td>6/9</td>
</tr>
<tr>
<td>Farrell, J.</td>
<td>3/3</td>
</tr>
<tr>
<td>Farrell, S.</td>
<td>2/3</td>
</tr>
<tr>
<td>Fernando, D.</td>
<td>8/11</td>
</tr>
<tr>
<td>Fierke, M.</td>
<td>6/6</td>
</tr>
<tr>
<td>Folta, E.</td>
<td>3/3</td>
</tr>
<tr>
<td>Fraise, J.</td>
<td>2/15</td>
</tr>
<tr>
<td>Gibbs, J.</td>
<td>?</td>
</tr>
<tr>
<td>Green</td>
<td>1/2</td>
</tr>
<tr>
<td>Horton, T.</td>
<td>5/6</td>
</tr>
<tr>
<td>Kimmerer, R.</td>
<td>2/3</td>
</tr>
<tr>
<td>Leopold, D.</td>
<td>3/4</td>
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<tr>
<td>Limburg, K.</td>
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</tr>
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<td>Lomolino, M.</td>
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</tr>
<tr>
<td>McGee</td>
<td>3/4</td>
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<tr>
<td>McNulty</td>
<td>4/4</td>
</tr>
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<td>Newman, L.</td>
<td>8/11</td>
</tr>
<tr>
<td>Parry, D.</td>
<td>4/7</td>
</tr>
<tr>
<td>Paterson, G.</td>
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<tr>
<td>Powell, W.</td>
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</tr>
<tr>
<td>Ringler, N.</td>
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<tr>
<td>Rundell, R.</td>
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<tr>
<td>Schulz, K.</td>
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<tr>
<td>Stewart, D.</td>
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<tr>
<td>Teale, S.</td>
<td>4/?</td>
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<tr>
<td>Turner, S.</td>
<td>9/9</td>
</tr>
<tr>
<td>Weir, A.</td>
<td>2/3</td>
</tr>
<tr>
<td>Whipps, C.</td>
<td>11/16</td>
</tr>
</tbody>
</table>

Listing of Awards and Recognition
Lee A. Newman: SUNY-ESF President’s Award for Community Service

Service Learning

Besides the engagement of students in classes listed below, EFB students were also very involved through independent studies (EFB 498) and internships (EFB 420).

EFB faculty indicate that the following courses have specific service learning components:

**EFB 120, The Global Environment and the Evolution of the Human Society** (Diemont) to make service learning central to the group projects, each group (of 4-5 students) proposes and develops a project that is related to course topics and that in some way serves the sustainability of the campus, Syracuse, or regionally. EFB 120 presents what sometimes appear to be the insurmountable problems of our world, such as climate change, poverty, population pressures, and water, soil, and pollution. This project encourages the students as they develop tangible designs, processes, or products, to begin to take necessary steps to meeting these challenges, and to consider how their education at ESF, and even a small project, will address the needs of the world. Projects included childhood education programs (where they taught elementary school students about sustainability), green roof and rain garden designs, re-designed lighting programs for ESF, clothing exchange programs, elephant waste to paper (actually making usable paper!), mycrofiltration, and numerous others.

**EFB 496 and EFB 796, Restoring Ecosystems** students worked with a neighborhood community in San Cristobal de Las Casas, Chiapas, Mexico and a faculty member at El Colegio de La Frontera in San Cristobal de Las Casas in the design of both a stream and wetland restoration that would be used in the community to reduce surface water pollution, develop community engagement with the site, and restore bird and plant diversity.
EFB 417/617 Non-Personal Environmental Interpretative Methods – This year the students worked with two community organizations and two ESF groups. The students worked with Beaver Lake Nature Center and the Central Region of NY State Parks, ESF Greenhouses, and the Environmental Health program. The students created brochures, waysides, and podcasts for the organizations to use. Not all organizations needed all three projects, so at minimum the students created a brochure and one of the other projects for their organization. Below are links to the podcasts created by the students in EFB 417/617:

- Beaver Lake - [https://drive.google.com/open?id=0B5Gq8xMtqyrZbHAzWkRyRnVkJVEE](https://drive.google.com/open?id=0B5Gq8xMtqyrZbHAzWkRyRnVkJVEE)
- Central Region NY State Parks - [https://drive.google.com/open?id=0Bzu45VkLEJlsdC16NDJGYukQxcXM](https://drive.google.com/open?id=0Bzu45VkLEJlsdC16NDJGYukQxcXM)
- ESF Greenhouses - [https://drive.google.com/open?id=0B5Gq8xMtqyrZeUg5Sm9fWWJ4TkU](https://drive.google.com/open?id=0B5Gq8xMtqyrZeUg5Sm9fWWJ4TkU)
- ESF’s Environmental Health Program – [https://drive.google.com/open?id=0B5Gq8xMtqyrZeUg5Sm9fWWJ4TkU](https://drive.google.com/open?id=0B5Gq8xMtqyrZeUg5Sm9fWWJ4TkU)

In total, the students donated over 352 hours to the two community organizations and 359 to the two ESF groups. All of the community organizations have worked with us for before and would like to participate again in the future.

FOR 496 Ecotourism Abroad created interpretive/promotional brochures for the homestays and guide services available in the village of Sontule through the women’s cooperative.

EFB 305/605 Indigenous Issues and the Environment includes a service learning component. This year the students developed educational modules to share with existing classes at ESF to enrich the content with an indigenous perspective.

EFB 414 Senior Synthesis in Conservation Biology. Students focused the entire semester on developing a Conservation Management Plan for the Skaneateles Conservation Area with a focus on managing invasive species and maximizing the conservation value of the area.

EFB 446/646 Ecology of Mosses has a service-learning component. The students participated in the Skaneateles BioBlitz by creating a moss list and developed bryophyte educational materials for inclusion in the mobile Mosslab directed by Dr. Marion Wilson.

EFB 525, Limnology Practicum, had a significant service learning component. Students could choose to work with two allied local lake associations (Song Lake Association and COFOKLA – Cortland Onondaga Federation of Kettle Lake Associations) to develop their independent projects on topics that were both scientifically relevant and of interest to the homeowners. About half of student time in the course was devoted to developing and performing these independent projects, in co-operation with homeowners (when applicable) or sometimes with managers and practitioners in other areas.

The independent projects culminated in a scientific poster session and reception in 12 Illick Hall during finals week (17 December 2015) that was open to the public and attended by other undergraduate and graduate students not in the Practicum, faculty, members of the Song Lake Association and COFOKLA, as well as the general community. The projects continue to expand a database of water quality and species presence data that will be useful to the homeowners in lake management decisions. Among student final posters were:

- The Effects of Land Cover on the Water Quality of Upper Little York Lake
- A Historical Examination of Macrophyte Percent Coverage on Little York Lake
- An Assessment of Phosphorus Sources & Sinks in the West Branch of the Tioughnioga River
- Does Light Climate Influence Macrophyte Chlorophyll Content?
• What Makes Roads Accessible, Makes Streams Inaccessible: The Effects of Road-Stream Crossings on Aquatic Connectivity of Eastern Trout Species within the Housatonic River Watershed
• Our Ties to the Water: Is There a Relationship Between Socio-Economic Conditions and Water Quality Parameters?
• Analyzing the Effects of Climate Change on Temperature in Different Lake Mixing Types in Upstate New York
• Using a 3-D Bathymetric Model to Re-calculate Methyl-Mercury in Onondaga Lake, Syracuse, New York
• Effects of Wastewater Treatment Plant Inputs on Water Quality and Macroinvertebrate Assemblages Along the Chenango River, NY.
• How Does the Age of Restored Wetlands Affect their Species Richness?

Four of the posters related to the kettle lake district were presented to a meeting of COFOKLA on 18 April 2016, and were very well-received, with students talking for over an hour, including after the poster session, with members of the public and the DEC.

Three of the poster projects were used as final capstone projects in Environmental Science or Environmental Studies, another one was presented by students at the New York meeting of the American Fisheries Society; two students (one graduate student and one undergraduate) are following up on their project with me during the spring semester and continuing this summer to do additional research and writing to produce a paper for publication (planned submission to Limnology and Oceanography Methods before fall 2016).

Graduate Students

By the end of this reporting period, 29 (33, previous year) graduate students (Appendices N and O) completed all degree requirements for the Ph.D., M.S., or M.P.S. degree.

Number of students by degree objectives

At the beginning of Fall ‘15, there were 146 graduate students officially enrolled in EFB, an increase of 15 compared to Fall ‘14. The largest number of graduate students (156) ever enrolled in the department occurred in Fall ’11 and Fall ’12; the lowest number of graduate students in EFB since 2005 was 128, at the beginning of fall 2008. The average number of EFB graduate students each fall since 2006 is 143.

EFB graduate students were about 32% of the total number of all full- and part-time graduate students at ESF during the fall ‘15. Of this EFB total, about 48% (50% previous year) were in our M.S., 8% (10%) M.P.S., and 44% (38%) Ph.D. programs. The approximate percentage of students in each of our ten graduate areas of study is as follows (with percentages of previous year in parentheses):

<table>
<thead>
<tr>
<th>Graduate Area</th>
<th>Percentage (Previous Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology</td>
<td>31% (45%)</td>
</tr>
<tr>
<td>Fish and Wildlife Biology and Management</td>
<td>25% (26%)</td>
</tr>
<tr>
<td>Conservation Biology</td>
<td>14% (15%)</td>
</tr>
<tr>
<td>Plant Science and Biotechnology</td>
<td>9% (8%)</td>
</tr>
<tr>
<td>Entomology</td>
<td>8% (7%)</td>
</tr>
</tbody>
</table>
Environmental Interpretation 5% (5%)
Chemical Ecology 3% (1%)
Environmental and Forest Biology 2% (0%)
Forest Pathology and Mycology 2% (2%)
Applied Ecology <1% (<1%)
Environmental Physiology 0% (0%)

**Graduate student awards** (listed in Appendix P)

**Graduate recruitment efforts**

There were 113 graduate applications to EFB for spring ’16 (13) and fall ’16 (100) matriculation, versus 146 in the last reporting period. This total number of applications, specifically the decrease compared to the number of applications four years ago (183, the largest number of applications ever), is misleading as a number of EFB faculty strongly discourage potential applicants to formally apply if a review of submitted materials prior to a formal application indicates that acceptance and funding are unlikely. Some of us individually recommend to two or three dozen potential applicants each, not to formally apply because their academic records will likely be below the upper 25% of the anticipated applicant pool. The individual EFB faculty with the most robust graduate programs are generally those who receive the largest number of grad school inquiries and formal grad applications.

Of these 113 applications, 8 graduate students matriculated in Spring ’16 and 18 plan to matriculate in August ’16. This total number of 26 is the lowest number of newly matriculated graduate students in EFB in the past few years. EFB had 44 new graduate students for 2015-2016 and 36 for 2014-2015. Reasons for this lower number of matriculated graduate students include a decrease in total applications, increase of applicants declining our GA offers, lacking capacity in areas (i.e., biogeochemistry and animal behavior) that consistently attracted graduate applications due to unfilled faculty retirements, fewer MPS graduate applications, and reluctance by some of the most active graduate faculty to increase the size of their graduate research program.

Without minor renovations to existing spaces and replacement of large desks with smaller, more efficient ones, Illick Hall is at capacity for EFB’s graduate programs comprised primarily of M.S. and Ph.D. students, and especially for graduate research programs requiring laboratory and controlled environments. Illick Hall was not designed to accommodate the current number of graduate students in EFB. The only substantial increase in EFB graduate program that current facilities could handle would be in our MPS programs, which instead requires a faculty or staff with some proportion of time dedicated to managing the MPS programs as there is not sufficient interest within the department for this increase to take place by all faculty recruiting MPS students. With 12 lab-intensive EFB faculty moving out of Illick about 2019 into the adjacent Academic Research Building, research lab and graduate space will be released in Illick. It is uncertain at this time, however, whether any of this “freed” space will be available to accommodate a larger EFB graduate program or will instead be used for other College programs.

After many years of debate at EFB faculty meetings the faculty agreed in January 2012 to a greatly revised ranking system of all graduate applicants. The ranking system used for decades was based only on an applicant’s gpa and GRE scores, never including other measures of potential success in our graduate program. Although many of the top-ranked graduate applicants
did complete their graduate programs in a timely manner and produced the products (including peer-reviewed journal papers) expected by the faculty, an unacceptable number did not.

Beginning in January 2012, all EFB graduate applicants were ranked according to this scheme:

- 1st authored peer reviewed pub: 100 pts, or 125 pts if done while an undergrad; (PER PAPER)
- 2nd authored/multi-authored: 50 pts (PER PAPER)
- Master's degree (not MPS): 75 pts
- Discretionary points for each faculty person to dispense: 150 pts

This new scheme has now been applied to nine cohorts of applications, i.e., those who applied for fall ’12, ’13, ’14, ’15 and ‘16 and spring ’13, ’14, ’15 and ‘16 matriculation. This new ranking scheme greatly altered the ranking of applicants, and the faculty generally seemed very pleased by the change. However, it will take a few years to evaluate whether our new scheme helps us accept and support the applicants who are likely to be most successful in our graduate program.

Graduate recruitment remains highly dependent on the efforts of individual faculty members in attracting graduate students into their programs. We stress the importance of updated faculty web pages and the importance of faculty obtaining research grants to provide graduate stipends and tuition-waivers through graduate research assistantships (GRAs). In recent years, EFB has been allocated 39.5 graduate teaching assistantships (GTAs); our graduate enrollment at the beginning of the past two AYs has been at least 150. Although we have about 40% of the full-time graduate students at ESF, we receive about 30% of the 132 state-funded graduate assistantships. GRAs are critical for maintaining and expanding our graduate support. These GRAs can provide a larger stipend than that provided by TAs and include support for the full calendar year. Teaching assistantships only provide academic year support. A robust graduate program can only be sustained by recruiting graduate students who are competitive for GTAs and national fellowships, and having an active research program that provides GRAs.

**Graduate student advising**

Below shows the approximate number of graduate students advised last academic year by each EFB faculty member, as each have reported, including graduate students who finished. Some EFB faculty advise graduate students in other departments, especially in GPES, and even at other institutions. Co-major professors are counted as 0.5 graduate students.

| Castello 1 | Green 0 | Powell 5.5 |
| Cohen 7 | Horton 3 | Ringler 11 |
| Diemont 9.5 | Kimmerer 7.5 | Rundell 6 |
| Dovciak 4.5 | Leopold 12 | Schulz 4.5 |
| Farrell, J. 7 | Limburg 9 | Stewart ? |
| Farrell, S. 2.5 | Lomolino 1 | Teale 6 |
| Fernando 2 | McGee 2.5 | Turner 0.5 |
| Fierke 6.5 | McNulty 2.4 | Weir 3.5 |
| Folta 7.5 | Newman 10 | Whipps 5 |
| Frair 10.5 | Parry 6.5 | |
| Gibbs 11 | Paterson 2 | |
Courses having TA support and enrollment in each

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<tr>
<th>Course #</th>
<th>Course Name</th>
<th># of Students</th>
<th># of GTAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>General Biology Lecture I</td>
<td>305</td>
<td>3</td>
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<tr>
<td>102</td>
<td>General Biology Lab I</td>
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<tr>
<td>103</td>
<td>General Biology Lecture II</td>
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</tr>
<tr>
<td>104</td>
<td>General Biology Lab II</td>
<td>156</td>
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</tr>
<tr>
<td>120</td>
<td>Global Environment (spring)</td>
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<td>3</td>
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<tr>
<td>132</td>
<td>Orientation Seminar</td>
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<td>200</td>
<td>Physics of Life</td>
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<td>Diversity of Life I</td>
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<tr>
<td>211</td>
<td>Diversity of Life II</td>
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<td>5</td>
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<td>217</td>
<td>Peoples, Plagues, &amp; Pests</td>
<td>119</td>
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<td>303</td>
<td>Intro Environ. Microbiology</td>
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<td>Indigenous Issues and the Environment</td>
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<tr>
<td>308</td>
<td>Principles of Genetics Lab</td>
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<td>311</td>
<td>Principles of Evolution</td>
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<td>312/512</td>
<td>Intro. to Environ. Interpretation</td>
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<td>General Ecology</td>
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<tr>
<td>325</td>
<td>Cell Biology</td>
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<td>326</td>
<td>Diversity of Plants</td>
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<td>Dendrology</td>
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<tr>
<td>340</td>
<td>Forest &amp; Shade Tree Pathology</td>
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<td>Invertebrate Zoology</td>
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<td>Comparative Vertebrate Anatomy</td>
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<td>Wildlife Ecology and Management</td>
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<td>Molecular Biology Techniques</td>
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<td>Introduction to Conservation Biology</td>
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<td>424/525</td>
<td>Limnology/Limnology Practicum</td>
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<tr>
<td>435/635</td>
<td>Flowering Plants: Diversity, Evolution...</td>
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<tr>
<td>440/640</td>
<td>Mycology</td>
<td>48</td>
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<tr>
<td>445/645</td>
<td>Plant Ecology</td>
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<tr>
<td>446/646</td>
<td>Ecology of Mosses</td>
<td>23</td>
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</tr>
<tr>
<td>462/662</td>
<td>Animal Physiol.: Environ. &amp; Ecol.</td>
<td>35</td>
<td>0.5</td>
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<tr>
<td>480</td>
<td>Principles of Animal Behavior</td>
<td>52</td>
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<tr>
<td>482</td>
<td>Ornithology</td>
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<tr>
<td>483</td>
<td>Mammal Diversity</td>
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<td>2</td>
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<tr>
<td>485</td>
<td>Herpetology</td>
<td>60</td>
<td>1</td>
</tr>
<tr>
<td>486</td>
<td>Ichthyology</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>487</td>
<td>Fisheries Science and Management</td>
<td>33</td>
<td>0.5</td>
</tr>
<tr>
<td>491</td>
<td>Wildlife Ecol. &amp; Manage. Practicum</td>
<td>33</td>
<td>1.5</td>
</tr>
<tr>
<td>493/693</td>
<td>Wildlife Habitats/Populations</td>
<td>58</td>
<td>1</td>
</tr>
</tbody>
</table>
Graduate Program Accomplishments – Miscellaneous

EFB’s Graduate Program Advisory Committee (GPAC), working with EFB graduate students, finished the EFB Graduate Student Handbook which is available electronically at: [http://www.esf.edu/efb/graduate/documents/2015-16EFBGradHandbook.pdf](http://www.esf.edu/efb/graduate/documents/2015-16EFBGradHandbook.pdf). The purpose of this handbook is to serve as a guide to policies and procedures of EFB’s graduate programs to help EFB graduate students be successful in our program. This handbook complements the department’s online Graduate Student Handbook ([http://efb-grad-handbook.wikidot.com/](http://efb-grad-handbook.wikidot.com/)), a wiki site built by previous EFB grad students to introduce new students to the campus and give insider tips on the area. It is an excellent resource for information regarding life at ESF and in Syracuse.

Governance and Administrative Structure

Components:

Chair (D. Leopold)

Duties:

Manage allocation of state, Research Foundation (research incentives), and College Foundation accounts
Manage allocation of about 40 state graduate teaching assistantships
Convene regular department meetings
Represent department at biweekly Academic Council meetings
Work with Development Office for fundraising
Supervise about 34 faculty, one administrative assistant, two Instructional Support Specialists and other staff
Promote faculty and staff within and outside of the department and facilitate the many good ideas that regularly emanate from faculty
Ensure that all regular and new undergraduate and graduate courses are offered as listed in the College Catalog or webpage; main contact with Registrar for any course changes.
Work with Physical Plant on all planned renovations and emergency repairs
Assist Provost with special projects as needed
Represent department at all college open houses
Prepare annual department report

Associate Chairs (J. Castello and J. Gibbs)

Duties: One (J. Castello) assists with annual EFB preconvocation student awards recognition, supervises the Keyboard 1 and 2 Specialists in the main administrative office, assists in other miscellaneous ways. The other (J. Gibbs) is working on benchmarking.


Duties: review all course and curricula changes in EFB and College; oversee course assessment of seven EFB undergraduate majors
Graduate Program Advisory Committee (G. Paterson and J. Cohen, co-chairs; Melissa Fierke, Karin Limburg, Danny Fernando, Dylan Parry, Martin Dovciak, Kim Schulz, Shannon Farrell, Alison Kocek (Ph.D. student), Giuseppe Tumminello (M.S. student)
Duties: advise chair on graduate matters and facilitate department decisions about policies

Building and Space Committee (currently vacant)
Field Program (including International Programs) Committee: inactive

Awards Committee (chaired by J. Castello)
- Undergraduate and Graduate Academic Awards
- Illustrious Alumni, Emeriti Awards

Supporting Offices, Committees, Directors, and Coordinators

Administrative Office
- Administrative Assistant to the Chair/Secretary 1 (Sandra Polimino)
  Duties: manages all department accounts (state, research foundation, and development) and submits payment for department bills; manages ranking of graduate applicants and currently overseeing administrative aspects of EFB graduate program; assists with annual student recognition the day of convocation; manages EFB’s digital display in foyer; manages requests by faculty for all vehicles for their classes; assists in managing the chair’s calendar and schedule; assists in development activities; assists faculty in various ways; handles reimbursements, etc. for seminar speakers; assists the chair with a multitude of tasks.
- Secretary 1 (AnnMarie Clarke)
  Duties: provides support to Undergraduate Curriculum Director (UCD) for undergraduate program (7 majors); schedules prospective/accepted undergraduate student visits with Admissions; assists UCD with open house and transfer days; oversees summer mailings to incoming students; revises undergraduate handbook; assists with data collection for Undergraduate Program Assessments; provides faculty support for manuscripts, class work, and report preparations; assists with arranging meetings, conferences, travel and hotel accommodations; orders department supplies; processes State and Research purchase requisitions for faculty and staff; modifies, updates and maintains EFB websites for EFB faculty; handles incoming and outgoing mail when KB 1 is out; handles routine maintenance of office equipment including fax and copier; assists with Cranberry Lake Biological Station registration; assists with assigning rooms for graduate students; provides support to Department Chair and Secretary 1
- Keyboard Specialist 1 (Joanne Rappleyea)
  Duties: responsible for meeting and greeting all visitors to EFB; responds to all inquiries made by faculty, staff, and students; handles all incoming mail for EFB faculty, staff, and graduate students; assists Secretary 1, Keyboard Specialist 2, and Department Chair; orders office supplies for EFB administrative office; sets up a chart of each EFB conference room; handles routine maintenance of office equipment; oversees sign-out of digital equipment; types roster of faculty, staff and other key campus numbers and distributes to EFB faculty, staff, and grads; processes all Work Orders to Physical Plant; types Class Schedules (fall & spring) and post outside main office; processes State and Research purchase requisitions.

Undergraduate Curriculum Director (G. McGee)
Duties:
Coordinate student recruitment events with Admissions;
Develop orientation materials and programs for freshmen and transfer students;
Update curriculum plan sheets, directed elective lists and the student handbook;
Facilitate petitions;
Coordinate department undergraduate advising;
Serve as the department’s representative on the Academic Standards Review Committee;
Compile and summarize ENB assessment data.

Undergraduate Curriculum Coordinators (by major)
- Environmental Biology (G. McGee)
- Aquatic and Fisheries Science (D. Stewart)
- Biotechnology (W. Powell)
- Conservation Biology (D. Parry until 12/31/15; J. Gibbs thereafter)
- Forest Health (J. Castello)
- Natural History and Interpretation (E. Folta)
- Wildlife Science (J. Frair)

Graduate Program Director (D. Fernando)

Duties:
- Act on petitions concerning different aspects of graduate program requirements and policies
- Review and sign (paper form and online) forms required for the completion of different majors and degrees (2A, 3B, 4, 5B and 6B)
- Reply to inquiries concerning EFB graduate program (through email, phone, and/or personal visits) on an almost daily basis from potential applicants and current graduate students
- Process each year about 150 graduate applications that involve the review of each application for initial assessment and designation of faculty reviewers, following up on the completion of the reviews on each application, summarizing the reviews for each application, and submitting EFB’s recommendation for each accepted and rejected applications to the Dean of Instructions and Graduate Studies
- Provide orientation seminars to new graduate students about EFB graduate program and the new faculty about the graduate application process
- Serve as the department’s representative to the Graduate Council and raise issues regarding problems/suggestions on how to improve the graduate program, application and review process; shared the ideas and activities of the Graduate School to the department’s graduate committee and faculty
- Review applications and participate in the deliberations in granting Fellows for SUNY Diversity Fellowship and Bristol Myers Squibb Sustainability Fellowship
- Work with the Graduate Secretary on the update and improvement of the various facets of the EFB’s Graduate Webpage and graduate application filing system

Cranberry Lake Biological Station (M Fierke and R. Kimmerer, co-Directors)
Roosevelt Wild Life Station (J. Gibbs, Director; J. Frair, Associate Director)
Thousand Islands Biological Station (J. Farrell, Director)
Animal Use and Care Protocols (college-wide committee; C. Whipps)
Exhibits Coordinator (E. Folta)

Instructional Support Specialist Supervisors
- K. Adams – S. Teale
- R. Giegerich – J. Frair
Budget

EFB’s budget comes from four main sources, i.e., (1) state allocations; (2) funds generated from summer courses, grad tuition incentive program, and course fees; (3) the SUNY Research Foundation (RF) research incentives funds; and, (4) development funds through the College Foundation. A summary of the allocations from each source and expenditures follows.

State Budget Allocations: $49,750 (state budget allocation to EFB in ’07-'08 was $79,500 for fewer faculty, students, and courses); excludes search committee allocations from the Provost, Biotechnology, Tree Pest Info Service, and Academic Equipment Replacement allocations – amounts of these shown below)

Initial Allocation (August 17, 2015): $49,750 ($45,000 OTPS; $4,750 TS)

Planned* Expenditures:
- Offices (administration, faculty, staff, grads): $13,500
- Computers: $0
- Photocopy: $5,000
- Mileage/Travel: $3,000
- Repairs: $2,000
- Building, facilities, exhibits: $3,000
- Seminars and receptions: $8,500
- Chairman Operating (over-expenditures, all categories): $5,000
- Greenhouses: $1,000
- Subtotal: $41,000

Faculty subaccounts and additional requests: $32,712

Total Planned Expenditures: $73,712

Total OTPS: $45,000
Total OTPS + Course Fees ($28,712): $73,712

Temporary services (TS) $4,750

*because $28,712 in course fees was anticipated to be collected during the last reporting period, budgeting was based on an assumed OTPS amount of $73,712, i.e., $45,000 + $28,712)

Course Fee Allocation: $28,712
Biotechnology accounts: $8,450
Tree Pest Info Service account: $1,600
Academic Equipment Replacement: $35,734 (versus $40,720 previous year)
End-of-year allocation: $0 (versus $0 previous year)
The total state budget allocation to EFB for 2015-2016 was $49,750. Course fees of $28,712 were expected to be collected in the fall ’15 and spring ’16 semesters, and these fees were transferred into our OTPS account as needed. Funds in the course fee account can be carried over to the following academic year, a significant advantage over funds in the OTPS account which must be spent by the end of each June. By June 2016, the entire initial state allocation and all of the course fees collected from the Fall ‘15 and Spring ’16 semesters was spent (i.e., $73,712).

Of the extraordinary expenditures that are covered by state funds, the cost of the Department’s pre-Convocation award ceremony and reception for graduating students, their families and friends, and faculty and staff was $5,530 (food and drink for reception, award plaques). State funds were also used to extend the employment of the work-study student assigned to the administrative office, pay for an undergraduate to work for Moon Library to digitize archived materials, cover costs of invited speakers for courses, purchase three GoPros and other equipment for courses, and faculty attendance at teaching workshops. Funds generated from course fees were critical to cover nearly $10,000 in overexpenditures (of faculty teaching account allocations) made by EFB faculty for classroom purposes and ATS (over $5000).

Academic Equipment Funds allocated to EFB ($35,734 this past period) have been instrumental in allowing faculty to replace equipment required for classroom instruction. About half of this allocation was used to purchase microscopes which are used by many hundreds of students every year. With fewer Instructional Support Specialists in the department and at the College to help maintain these scopes, they do not last for decades as they once did. About $7000 was used to cover the cost of a freezer, as part of a new faculty start-up package that the Provost’s Office could not cover. About $6,000 was spent on a microscope and display system for aquatic courses taught in the fisheries lab. Our specialized courses have also relied on these funds to upgrade badly outdated equipment. Unfortunately, these funds cannot be used to help replace the boats and other equipment needed for our aquatic sciences courses so we are still without a dedicated funding source for these required types of equipment.

Funds Generated by Summer Courses
Funds from summer courses have only recently been available and provide much incentive for the department to offer relevant summer courses during Maymester and Summer Session.
Funds from summer ’15 courses of $11,983 were the highest amount yet generated by summer course offerings (versus $11,009 in summer ‘14). Some of these funds have been used to buy AV equipment for some of the Illick Hall classrooms and for other expenses that would otherwise be covered by the basic state allocation to the department. As of early August ’16, we have $7,680 left in this account. Based on enrollment numbers for courses taught during the summer ’16, we expect a decrease in funds from these summer courses, to be available in late fall ’16.

SUNY RF Departmental Research Incentives Funds: $23,621 allocated 11/10/15. An additional $6,376 was allocated that same day, from funds withheld during 2014-2015 but restored because actual sponsored program indirect cost expenditures significantly exceeded projections made at the beginning of the FY14-15 fiscal year. In particular, an additional one percent of the original two percent cut to the program allocation was restored. An additional one percent was restored in June 2015, bringing the total allocation for FY14-15 to five percent of
revenue, equivalent to the historical five percent allocation rate for this program. With the 2015-2016 plus the 2% restoration from withheld 2014-2015, and residual of $13,002 from 2014-2015, EFB had $49,395 in its Research Incentives Account for 2015-2016.

Expenditures (by general categories):

<table>
<thead>
<tr>
<th>Expenditure</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department Seminars (incl. Adaptive Peaks)</td>
<td>$7,736</td>
</tr>
<tr>
<td>Faculty and Staff Development and Recognition</td>
<td>$9,750</td>
</tr>
<tr>
<td>Faculty and Staff Equipment, Supplies, Miscell.</td>
<td>$1,500</td>
</tr>
<tr>
<td>TIBS, CLBS undergraduate student fellowships</td>
<td>$0,000</td>
</tr>
<tr>
<td>Building Equipment and Supplies</td>
<td>$1,000</td>
</tr>
<tr>
<td>Office Copiers</td>
<td>$8,000</td>
</tr>
<tr>
<td>Student Development and Recognition</td>
<td>$2,700</td>
</tr>
<tr>
<td>Searches (Epidemiologist)</td>
<td>$1,500</td>
</tr>
<tr>
<td>Development</td>
<td>$2,500</td>
</tr>
<tr>
<td>Greenhouse</td>
<td>$500</td>
</tr>
<tr>
<td>Dept and Field Station Dues</td>
<td>$750</td>
</tr>
</tbody>
</table>

Total Expenditures                                      $35,936

Balance (August 15, 2016)                                $13,459

The Department could not function without these Research Incentive funds, i.e., the state allocation is insufficient to cover the basic teaching, research, and outreach expenses of a large doctoral-granting biology program. Increasingly, state funds are needed for development-related activities – although these activities should eventually result in financial support for currently unfunded programs and ideas, there are no state funds explicitly allocated for the travel and other costs associated with these efforts.

Because of the significant reduction in Research Incentives funds the past five years (restored for 2014-2015, but not until July and November 2015) and anticipated/unanticipated expenditures, the department suspended the TIBS and CLBS undergraduate student summer fellowship programs. However, with the course fees collected to pay for the expendable supplies in lab courses with state funds, the department should be able to reactivate these programs by not having to cover basic teaching expenditures with Research Incentive funds.

**Development Funds** ($109,566 budgeted for ’15-’16 does not include balance in EFB Fund nor College Foundation accounts for the RWLS, CNPE, Dale L. Travis Lecture)

Undergraduate and graduate student awards come from the following endowments:
- Maurice and Annette Alexander Wetlands Research Fund
- Robert L. Burgess Graduate Scholarship in Ecology
- Betty Moore Chamberlaine Memorial Fund
- Leroy C. Stegeman Endowment in Invertebrate Ecology
- Robert A. Zabel Endowed Scholarship
- John and Etta Simeone Graduate Fellowship
- Josiah L. Lowe-Hugh E. Wilcox Scholarship Fund
- Phyllis Roskin, Joseph and Ruth Hasenstab
- Edwin H. Ketchledge Scholarship
- Lanier Memorial, Silverborg Memorial, and Patricia D. and Jeff J. Morrell Scholarship
- Dr. Samuel Grober ’38 Graduate Fellowship

During the academic year but especially at the annual EFB Spring Celebration and Awards Ceremony prior to the ESF Convocation, most of this total allocated amount was given out to EFB undergraduate and graduate students to assist them in their
A new undergraduate award was established, without an endowment, during the spring of 2012 in honor of Dr. Chun-Juan K. Wang. Since then, this award has been given annually to the outstanding graduating woman who best exemplifies Dr. Wang’s love of learning, teaching and research, in hopes that it will inspire her to achieve her highest goals. The Chun Wang Honor Award recognizes the many contributions that Dr. Wang has made to the College since 1959 when she began here as the first woman professor at ESF. Dr. Wang is a Professor Emerita in Botany and Mycology and is a world renowned mycologist, known especially for her ground breaking work with the Fungi Imperfecti. In addition to her exemplary research, Dr. Wang is highly respected for her years of service as a beloved teacher, introducing generations of students to the wonders of plants through her courses in Botany, Diversity of Plants and many aspects of Mycology. She has inspired hundreds of students with her knowledge, her enthusiasm and her passion for learning and has served as a wise mentor and role model for students and faculty alike. And she still regularly comes into Illick to work! This award was established by the women faculty in EFB, now representing 30% of the current EFB faculty.

Over the next few years and beyond we hope to attract sufficient development funds for a variety of significant purposes, including: endowed chairs (in biotechnology, conservation biology, wildlife policy and management, waterfowl ecology, etc.), museum display cases for the Roosevelt Discovery Center in Illick, a graduate seminar series, graduate fellowships (to attract the top applicants) and scholarships (to fully fund attendance at professional meetings), and undergraduate scholarships (for recruiting top students and support for attending professional meetings and field trips offered in our program, e.g., to Russia, Ireland, Australia, and Africa).

In May ’12 the ESF College Foundation received a donation of $25K from an ESF alumnus to establish a lecture series and other activities to publicly promote significant activities of ESF faculty. In March 2013 Dr. James Gibbs delivered the first Dale L. Travis Lecture. Donations of the same amount were made in spring ’13, spring ’14, and spring ‘15 to continue this series. Dr. Robin Kimmerer gave the Dale L. Travis Lecture in September 2014 and Distinguished Teaching Professor Emeritus George Curry (Department of Landscape Architecture) gave the lecture in March 2015. For the fall ’15, Dr. Karin Limburg convened a group of filmmakers, artists, and writers to discuss The Future of Fisheries: Choices, Decisions, and the Role of the Arts. Participants were Karin Limburg, John Waldman, James Prosek, David Doubilet and Jennifer Hayes. In spring ’16, Dr. Neil Ringler gave a lecture on his 25+ years of research and collaboration on Onondaga Lake. Details on these lectures and videos of the presentations are posted at: http://www.esf.edu/efb/travislecture/. We will continue to use this series for lectures on the Syracuse campus as well as support lectures in other strategic locations.

**Student Learning Outcomes Assessment**

In November the department finalized its 2015 Middle States Accreditation Undergraduate Program Assessment Report (available online at: http://www.esf.edu/efb/documents/2015-EBF-Middle-States-Assessment-Report_final.pdf). This report is the product of several years of effort by the curriculum directors and allied faculty in each of our majors, and the EFB Curriculum Coordination and Assessment Committee (CCAC). It represents the first department-wide curriculum assessment effort for most EFB
The most immediate challenge for the department in managing ongoing assessment efforts is developing the means to acquire and archive necessary assessment data for each of the seven majors. To this end, the EFB Undergraduate Curriculum Director and CCAC developed an omnibus Excel workbook to be used by all EFB faculty to deposit assessment data from each of their courses. EFB graduate student Allison Devlin then developed the database functions needed to automatically search the archived omnibus workbook and populate major-specific spreadsheets with the raw data to conduct the necessary data analyses for the seven majors.

**Objectives 2015-2016**

**Objectives, status, and relations to strategic plan**

To coincide with the College’s strategic planning process that began in April 2001 and resulted in the Vision 20:20 strategic plan (http://www.esf.edu/vision2020/vision2020.pdf), the EFB faculty adopted the following vision statement in November 2001: “Environmental and Forest Biology will be a world leader in furthering our understanding of the structure and function of the world’s ecosystems and their biota, and in applying scientific principles to solving the pressing environmental problems of the biosphere. EFB will pursue this goal through excellence in basic and applied research, in service to the public, and in educating the next generation of environmental scientists, thinkers, and problem solvers”. The month before this vision statement was adopted, faculty discussions culminated in identifying the following tasks that if accomplished would help us realize this vision:

1. attraction and retention of top-flight scientists;
2. evolution of a stronger learning and mentoring environment for students, faculty, and staff;
3. development of a more fully integrated field program;
4. development of greater prominence and national/international recognition of our graduate program;
5. enhancement and formal recognition of our public service, informational outreach, and service learning program;
6. development of new undergraduate programs;
7. development of international perspectives and opportunities; and,
8. collaboration as College partners on data development and utilization.

Numerous examples and data throughout this annual report indicate that EFB continues to make substantial progress towards accomplishing these tasks.

Beginning in summer 2014 the College began a strategic planning process that was supposed to result in an initial plan at the end of the 2015 calendar year. In the fall 2015, that process was deemed inadequate by ESF Academic Governance, and a new plan was adopted and carried out during the spring 2016 semester. Departments are expected to develop their own strategic plans, after this initial College strategic plan is adopted. The new strategic plan is more of a bridging document to the Vision 20:20 strategic plan, recognizing that there was much good in this plan that had not yet been realized, rather than a completely new plan that rejected this earlier strategic plan.

This past year EFB successfully initiated and filled a search to replace EFB faculty member Dr. Sadie Ryan because of her role in the College’s emerging Environmental Health
program, specifically her Epidemiology course. Although not a departmental program, the Environmental Health major in Environmental Sciences, was approved by SUNY and the first group of students matriculated in this program last fall ’14 semester. EFB has a significant role in offering this major, and administering it, with Dr. Lee Newman as the Director of this interdepartmental program. Dr. Brian Leydet starts this position August 15, 2016.

We also hoped to initiate searches for two faculty who retired this past reporting period but neither search was authorized given the dire financial situation at the College. In September 2014 Dr. Myron Mitchell retired, followed by Dr. Bill Shields in January 2015. We had to hire a substitute instructor for Dr. Shields’ very popular Principles of Animal Behavior class.

Objectives 2016-2017

Objectives and relations to strategic plan

Recently we learned that although we implemented a mentoring program for new faculty, there sometimes has been a disconnect between guidance of a faculty member’s mentoring committee and evaluations made at various levels in the department and College-wide promotion and tenure process. Metrics to objectively indicate which area(s) need strengthening have been developed by the EFB Promotion and Tenure Committee but have met with strong resistance from some of the faculty in the department. These metrics have been revised based on faculty input and ideally would be included in the department’s Promotion and Tenure Guidelines, if not as requirements, then as benchmarks for which faculty can ascertain whether they are on a satisfactory track for promotion and tenure.

The seven EFB undergraduate majors need a formal assessment, planned for this coming academic year. The EFB Curriculum and Course Assessment Committee, working with the Chair and Coordinators of each major, are working on the plan for this assessment, likely to be done during the spring ’17 semester, which will include a site visit by evaluators. The composition of that evaluation team is currently being reviewed.

With substantial time invested in development activities, we hope that there will be some significant results soon. Although it appears that most of these efforts are concentrated on the Roosevelt Wild Life Station because of the endowed professorships being pursued and bioblitzes done, any successes with these efforts will have a significant direct and indirect impact on the department as well. We are currently working on seeking funds to establish endowed professorships in Wildlife Management, Conservation Biology, and Waterfowl Ecology and laying the groundwork for endowed professorships in Plant Physiology, Tree Genetics for Species Restoration, and Environmental Health. Given the strengths of the department and institution, and developing relationships, we believe that getting funds to establish endowed positions in these areas is realistic. Without funds from external sources, we will never fully reach the potential and aspirations of the faculty and students.

Following the development and implementation of the College’s new strategic plan, likely sometime during the fall 2016 semester, the Department should undergo a similar process to facilitate that plan and take advantage of opportunities that result. Department-level strategic planning will likely be a primary objective of spring 2017, likely spilling over into the fall if not beyond. By that time, the most important current unknowns should be more certain, e.g., the status of the Academic Research Building and status of key development efforts, especially related to endowed professorships.
Undergraduate Recruitment Efforts

Most of EFB’s undergraduate recruitment efforts are made through existing college programs, especially open houses, Transfer Days, and receptions for accepted students. For open houses, an overview of all our programs is presented in Illick; this overview is followed immediately by a dynamic, fair-like gathering in the foyer. There, tables are organized by major and attended by at least one faculty representative - and when possible, a current undergraduate student - to provide information and handle inquiries. Hands-on displays complement the information in the glass display cases about our undergraduate program. Additionally, EFB meets all requests by prospective and accepted students for personal visits with faculty during both the academic year and summer; one of EFB’s Secretary 1’s is responsible for organizing these meetings.

Most of EFB’s undergraduate recruitment efforts are made through existing programs sponsored by the Admissions office, including two Open Houses & Transfer Days, one Transfer Day, and four Accepted Student Receptions. For Open Houses, an overview of all EFB’s programs is presented in the Gateway Center by the department chair. This overview is followed immediately by a dynamic, fair-like gathering in the foyer where faculty, and frequently undergraduate representatives of each EFB major meet with prospective students and their families to provide more detailed program information, share experiences, and handle inquiries. Hands-on displays complement the information in the glass display cases about our undergraduate program. During each of the four Accepted Student Receptions, we divide the visitors into two groups based on majors, and two EFB faculty members meet with the groups to outline the department’s programs and answer guests’ questions. Additionally, the department meets all requests by prospective and accepted students for personal visits with faculty during both the academic year and summer; one of EFB’s Secretary 1’s is responsible for organizing these meetings.

Over the last two to three years the EFB General Biology instructors (Fierke, McGee, Whipps) have regularly met on campus and in the field with local high school students enrolled EFB101/102/103/104 through the ESF in the High School program. High school field trips to campus include participation in a general biology lecture, participation in a full 3-hour laboratory, and discussion sessions with the faculty about career opportunities in biology and the environmental sciences. We do not yet know if these recent efforts have yielded any applicants into our program.

EFB’s undergraduate curriculum director sends a letter to all Fall-accepted undergraduate and Spring-accepted transfer students, to welcome each cohort into our program and provide guidance on advising, registration and transfer credits in advance of matriculation.

As of June 16, 2016 we had received 946 total applications for fall 2015 (freshman + transfer students; vs. 902 last June and 886 in June 2014). We have accepted 444 (vs. 410 and 388 the previous two years) applicants and have received 201 deposits (vs. 197 and 203). Of the total number of applications that we received, 69% were for freshman; about 63% of our deposits are from this group; about 47% (45% last year) of all applicants were accepted. The total number of deposits by EFB major and percent of total for the class entering fall 2016 (in parentheses) are: Aquatic and Fisheries Science, 16 (8% vs. 8% for class entering fall 2015); Biotechnology, 15 (7% vs. 11%); Conservation Biology, 45 (22% vs. 29%); Environmental Biology, 65 (32% vs. 27%); Environmental Education and Interpretation, 6 (3% vs. 3%); Forest Health, 4 (2% vs. about 1%); and, Wildlife Science, 50 (25% vs. 22%).
**Longer Term Visioning and Planning**  
(based on recent discussions and emails among EFB faculty)

As many of the previously cited metrics indicate, there is enormous interest on the part of students, the public and agencies in our programs but the lack of resources and facilities have hampered our ability to do more.

ESF and EFB have not had a plant physiologist since Dr. Larry Smart left for Cornell in July 2009. EFB has not offered a plant physiology course since then, until this spring 2016 semester, for which we have over 30 students enrolled. A doctoral-granting program in biology on a campus with a forest health mandate, and one that should adequately serve pre-med and pre-vet students, needs to have this key position. The College has substantial opportunities to grow in the field of phytoremediation, which is of great interest to our students. With faculty in various departments, including Dr. Lee Newman in EFB, ESF would not need to make many additional hires to be a really significant player in this field. But a strong program in this field needs a Plant Physiologist.

While EFB has generally replaced most faculty who have retired or passed, we have not been able to move into new areas that a modern biology department covers, e.g., bioinformatics. And we no longer have expertise in animal behavior and biogeochemistry with the recent retirements of Drs. Bill Shields and Myron Mitchell, respectively.

The EFB Chair and a few colleagues (notably Drs. Frair and Gibbs) continue to spend a substantial amount of time on development activities. Of the various purposes for which development funds are sought, the highest priority is still to fund at least four endowed chair positions, some associated with the Roosevelt Wild Life Station. But to be successful at development efforts, we need a larger and more effective Development Office at ESF. Ideally, given the size of the department, similar to the size of many College-level programs elsewhere, the department should have a full time position, 50% allocated to alumni relationships and 50% allocated to development activities. The Chair is not aware of similar size departments without at least one staff person dedicated for these purposes.

Over the next few years we hope to attract sufficient development funds for many significant purposes, e.g., endowed chairs (in biotechnology, conservation biology, wildlife management, waterfowl ecology), a residential building for scientists and graduate students at the Cranberry Lake Biological Station, museum display cases and public interaction space for the Roosevelt Discovery Center, a funded graduate seminar series, graduate fellowships (to attract the top applicants) and scholarships (to fully fund attendance at professional meetings), and undergraduate scholarships (for recruiting top students and support for attending professional meetings and field trips offered in our program, e.g., to Russia, Ireland, Australia, and Africa). The Cranberry Lake Biological Station could become an important facility linking ESF with the public via natural history education and perhaps outdoors experiential learning opportunities. We also hope to find a means to highlight and mobilize our significant biological collections that serve a critical function in our teaching programs but likely have a much greater value to the public and researchers. We remain convinced that the opportunities for biology education that we provide with our strong emphasis on field experience, problem-solving and integration across taxa and the biological hierarchy from genes to ecosystems is much sought after and will remain even more so in the age of changing ways of learning.

The department is poised to have greater national and international recognition in conservation biology. Combined, our conservation biology and wildlife programs are among the
largest in the U.S., and some of the faculty are among the best anywhere. The Roosevelt Wild Life Station has recently been revitalized at the College and there is state funding in hand to build a modest museum in the basement of Gateway to better feature its collections and provide more effective instructional space for many of our “-ology” courses. Although established at the College in 1919 with the blessing of Theodore Roosevelt, few people inside or external to ESF understand the purpose of this Station and continually ask to see the Station (there is no physical space on campus currently assigned to the Station). Elevating the Roosevelt Wild Life Station to an interdepartmental program, e.g., the Roosevelt Center for Conservation Science, would significantly increase national and international attention to the conservation-related work being done at ESF.

ESF has the foundation to become globally recognized as leaders in the restoration of rare/threatened plants (not only trees). Others here have suggested that we should focus on becoming a national center for tree restoration of threatened tree species, building on the College’s work on American chestnut. Either focus would involve not just plant biotechnologist, but would include the array of specialties from conservation, ecology, silviculture, entomology, mycology, plant physiology, social science, and more. ESF/EFB has demonstrated capability to do this through our work on restoration of American chestnut and the federally-listed American hart’s tongue fern, through the use of in vitro or semi-in vitro produced planting materials. We will need at least a state-of-the-art laboratory facility for propagation so we can expand on the number of species to work on. The focus on the biology and propagation of rare/threatened plants in the Northeast U.S., and especially the use of biotechnology tools, differentiate us from institutions in the country focused on plant conservation.

More broadly, this center could include the prevention and management of threats to trees and other plant species. ESF already has three forest entomologists working on invasive species issues in forests and many other faculty here addressing these issues within their areas of expertise. ESF should be able to carve out a niche in the area of invasive species research by focusing on trees.

EFB’s fisheries programs at ESF are pushing boundaries both spatially and in techniques/methods development, combining the traditional (e.g., systematics) with new (e.g., hard part (otoliths, scales, bones) microchemistry). One option to further strengthen this area is to fill the open biogeochemist position with someone also trained in aquatic ecosystems.

Ecosystem restoration is another direction that the department could develop more strongly including not only "wild" systems, but even urban systems. For example, the term "biophilic city" has been used to describe how to reconfigure cities to be more eco-friendly and better places to live. While one individual department has tried to own this area at ESF, the most exciting opportunities involve many departments together here. Another potential area for excellence is for ESF to become a center for Ecological Economics, but we would need a couple of new faculty hires, at a minimum, for that.

For faculty to become fellows of National Academies, or become Nobel laureates ESF we would need far more investment in better labs, and more resources to fill those labs with grad students and post-docs, not to mention more time for faculty to devote to research.

At a time that most University field stations have been abandoned, ESF’s Cranberry Lake Biological Station’s importance has risen from regional to national. But to meet the instructional and research needs at CLBS, renovations, especially to living quarters and instructional spaces are badly needed to accommodate the large number of students and faculty during the summer.
ESF and EFB have been relatively successful because: (1) we have a strong mission that is more relevant than ever; (2) we have a lot of expertise on the campus in support of that mission; and (3) we are still pretty nimble, although the administrative hoops are getting harder to jump through, and some supporting facilities are seriously degraded (e.g., the physical plant's capabilities, college fleet, etc.). And it is great that we still have our extensive properties; our history tied to the fate of New York's forests is both interesting and an excellent platform for expanding research and education in sustainability. ESF/EFB can offer interesting, non-traditional courses that engage students in exciting ways; that we incorporate students into our research programs; and that we can encourage folks to think outside the box.

Our biology program is different because of its applied focus. Faculty and students study subjects that need urgent attention. Similarly, ESF can offer Environmental Health programs that are unlike any others. Some focal areas that have been discussed include: (1) understanding how “nature-deficit disorder” affects the health of people, especially children; (2) examining environmental health after natural disasters like Superstorm Sandy and other events like catastrophic tornadoes.

Program visioning and strategic planning have not been undertaken formally at the department level in EFB since the department’s strategic plan was developed in 2001-2002. Very limited space, resources, and the amount of time it takes to get information and tasks done, greatly limit the extent to which many significant ideas can be pursued. With the recent hiring of Nora Heaphy in the Development Office we were very optimistic that we would soon be successful in getting one or more requests for external gifts. Unfortunately, Nora left ESF this past January. Additionally, much effort has been focused on unique opportunities that arise with little or no planning, e.g., the recent $2 million grant from SUNY to create a natural history museum in the 5000 square feet shell of the lower level of the Gateway Center. While such surprises are very welcome, the time needed to develop and fund those plans and eventual implementation has begun to greatly consume the limited time needed to meet goals laid out years ago, with careful planning.

Regardless, with very healthy undergraduate and graduate enrollments, the addition of thirteen faculty the past ten years (Drs. Frair, Whipps, Dovciak, Fierke, Folta, McGee, Newman, Cohen, Rundell, S. Farrell, Paterson, Diemont, and Green) tremendous effort by some of the senior faculty, greater use efficiency and enhancements of existing space, and improvements at our field stations, the department is closer towards realizing its basic goal of being one of the premier environmental biology programs. The EFB Chair hopes that with the department’s strong foundation and energy from many new faculty that the department is poised to discuss and move towards EFB’s aspirations beyond what has already been articulated and attained.
## Appendix A. EFB Faculty: Rank (at end of reporting period), Education, and Interests

<table>
<thead>
<tr>
<th>Name and Title</th>
<th>Degrees</th>
<th>Interest Areas</th>
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<tbody>
<tr>
<td><strong>Castello, John D.</strong></td>
<td>PhD, Univ. of Wisconsin</td>
<td>Assessment of forest health, beech bark disease</td>
</tr>
<tr>
<td></td>
<td>MS, Washington State Univ.</td>
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<td></td>
<td>BA, Montclair State College</td>
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<tr>
<td><strong>Cohen, Jonathan B.</strong></td>
<td>PhD, Virginia Tech</td>
<td>Wildlife ecology and management, population and habitat ecology, threatened and endangered species.</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>MS, U. Connecticut</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BS, Cornell University</td>
<td></td>
</tr>
<tr>
<td><strong>Diemont, Stewart A.W.</strong></td>
<td>PhD, Ohio State</td>
<td>Systems ecology, ecological engineering, traditional ecological knowledge, ecosystem restoration, sustainability analysis, natural wastewater treatment systems and re-use, lesser-developed countries, agroecology</td>
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<tr>
<td>Assistant Professor</td>
<td>MS, Univ. of North Carolina</td>
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<tr>
<td></td>
<td>BA, Univ. of Texas</td>
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<tr>
<td><strong>Dovciak, Martin</strong></td>
<td>PhD, Univ. of Minnesota</td>
<td>Plant ecology; forest ecology; biodiversity; plant population &amp; community dynamics; spatial ecology; ecosystem management &amp; restoration</td>
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<tr>
<td>Associate Professor</td>
<td>Dipl. Engin., Zvolen Technical University</td>
<td></td>
</tr>
<tr>
<td><strong>Farrell, John M.</strong></td>
<td>PhD, SUNY ESF</td>
<td>Fisheries management, aquatic ecology, wetlands restoration, St. Lawrence River studies, muskellunge and northern pike ecology &amp; mgt., invasive species</td>
</tr>
<tr>
<td>Professor</td>
<td>MS, SUNY ESF</td>
<td></td>
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<tr>
<td></td>
<td>BS, Cornell University</td>
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<tr>
<td><strong>Farrell, Shannon L.</strong></td>
<td>PhD, Texas A&amp;M</td>
<td>Wildlife ecology, E&amp;T species and habitat, anthropogenic impacts, quantification approaches for wildlife habitat services, policy innovations for implementing the ESA</td>
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<tr>
<td>Assistant Professor</td>
<td>MS, Texas A&amp;M</td>
<td></td>
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<tr>
<td></td>
<td>BA, Brown University</td>
<td></td>
</tr>
<tr>
<td><strong>Fernando, Danilo D.</strong></td>
<td>PhD, Univ of Alberta, Canada</td>
<td>Plant reproductive biology, plant structure and development, in vitro fertilization in conifers, pollen transformation &amp; gene expression during pollen tube development</td>
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<tr>
<td>Associate Professor</td>
<td>MS, Univ of Philippines</td>
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<td></td>
<td>BS, Mountain State Agr. Coll.</td>
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<tr>
<td><strong>Fierke, Melissa K.</strong></td>
<td>PhD, University of Arkansas</td>
<td>Forest entomology and forest ecology; impacts of invasives in forested settings with a focus on wood-boring insects.</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>MS, Oregon State University</td>
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<td></td>
<td>BS, Arkansas Tech University</td>
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<td></td>
<td>AA, North Arkansas CC</td>
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<tr>
<td><strong>Folta, Elizabeth</strong></td>
<td>PhD, North Carolina State</td>
<td>Natural history &amp; interpretation, informal biology education, environmental education.</td>
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<tr>
<td>Assistant Professor</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>BA, University North Carolina</td>
<td></td>
</tr>
<tr>
<td><strong>Frair, Jacqueline L.</strong></td>
<td>PhD, Univ of Alberta, Canada</td>
<td>Wilderness and landscape ecology, animal movements and habitat use, predator-prey interactions</td>
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<tr>
<td>Associate Professor</td>
<td>MS, University of Wisconsin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BS, Cornell University</td>
<td></td>
</tr>
<tr>
<td><strong>Gibbs, James P.</strong></td>
<td>PhD, Yale University</td>
<td>Conservation biology, ecological monitoring, wildlife management, population biology and conservation genetics</td>
</tr>
<tr>
<td>Professor and Associate</td>
<td>MA, University of Missouri</td>
<td></td>
</tr>
<tr>
<td>Chair</td>
<td>BS, University of Maine</td>
<td></td>
</tr>
</tbody>
</table>
Green, Hyatt C.  
Assistant Professor  
PhD, Oregon State Univ.  
BS, Univ. Georgia  
Molecular microbial ecology, co-evolution of microbes with their animal hosts, microbial source tracking and water quality, microbial biogeography

Horton, Thomas R.  
Associate Professor  
PhD, Univ of Cal.-Berkeley  
MA, San Francisco State Univ.  
BA, Humboldt State University  
Mycorrhizal ecology and systematics, mycology, restoration ecology

Kimmerer, Robin W.  
Distinguished Teaching Professor  
PhD, Univ. of Wisconsin  
MS, Univ. of Wisconsin  
BA, SUNY ESF  
Ethnobotany, conservation biology, and bryophyte ecology

Leopold, Donald J.  
Distinguished Teaching Professor and Chair  
PhD, Purdue University  
MSF, University of Kentucky  
BS, University of Kentucky  
Forest and wetland ecology; understanding drivers of species abundance and diversity at micro to macro scales; application of unique communities to sustainable landscapes; dendrology

Limburg, Karin E.  
Professor  
PhD, Cornell University  
MS, University of Florida  
AB, Vassar College  
Fisheries ecology, ecosystem ecology, fish migration, biogeochemical tracers, ecological modeling, ecological economics

Lomolino, Mark V.  
Professor  
PhD, SUNY Binghamton  
MS, University of Florida  
BS, SUNY-Cortland  
Biogeography; conservation biology, diversity in isolated ecosystems and habitat islands.

McGee, Gregory G.  
Assistant Professor  
PhD, SUNY ESF  
MS, SUNY ESF  
BS, Allegheny College  
Forest ecology, management, and restoration; effects of atmospheric nitrogen deposition on northern hardwood forests.

McNulty, Stacy A.  
Research Associate  
MS, SUNY ESF  
BA, SUNY Geneseo  
Forest and landscape ecology, applied GIS; ecology, conservation, and forest management in the Adirondacks

Newman, Lee A.  
Associate Professor  
PhD, Rutgers & RWJ Med. Sch.  
MS, Rutgers & RWJ Med Sch.  
BS, Stockton State College  
AA, Atlantic Com. Coll.  
Phytoremediation, molecular and cellular biology, plant nanoparticle interactions, plant endophyte interactions, horticultural therapy, hyperspectral imaging for plant contaminant exposure and plant stress, plant metal interactions and mine site restoration, environ. health.

Parry, Dylan  
Associate Professor  
PhD, Michigan State Univ.  
MS, University of Alberta  
BS, University of Alberta  
Forest insect ecology, population dynamics of defoliating Lepidoptera, ecology of predators, parasites, and pathogens of forest caterpillars, invasive species in forested environments, top-down (natural enemies) and bottom-up (host plant) regulation of insect populations, evolution of life-history strategies in solitary and gregarious caterpillars.

Paterson, Gordon  
Assistant Professor  
PhD, University of Windsor  
MS, Trent University  
BS, University of Waterloo  
Environmental and aquatic toxicology, ecotoxicology, emerging pollutants, food web bioaccumulation and biomagnification, persistent organic pollutants as indicators of species bioenergetics and individual, food web and ecological efficiencies.
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Education</th>
<th>Research Interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powell, William A.</td>
<td>Professor</td>
<td>PhD, Utah State University, BS, Salisbury State University</td>
<td>Forest biotechnology, molecular plant-microbe interactions, plant genetic engineering, plant gene analysis</td>
</tr>
<tr>
<td>Ringler, Neil H.</td>
<td>Distinguished Teaching</td>
<td>PhD, Univ. Michigan, MS, Oregon State Univ., BA, California State at Long Beach</td>
<td>Aquatic ecology, fish behavior, fisheries science</td>
</tr>
<tr>
<td>Rundell, Rebecca J.</td>
<td>Assistant Professor</td>
<td>PhD, Univ. Chicago, MS, Univ. Chicago; Cornell, BS, Cornell</td>
<td>Invertebrate conservation biology, evolutionary biology, tropical biodiversity, adaptive and non-Adaptive radiations, organismal biology (Pacific island land snails, microscopic marine invertebrates)</td>
</tr>
<tr>
<td>Schulz, Kimberly L.</td>
<td>Associate Professor</td>
<td>PhD, University of Michigan, BA, Cornell University</td>
<td>Nutrient and exotic species effects on aquatic ecosystems; ecological stoichiometry, aquatic community and ecosystem ecology; bioenergetics; nutrient cycling; lower food web studies; Great Lakes; Finger Lakes</td>
</tr>
<tr>
<td>Stewart, Donald J.</td>
<td>Professor</td>
<td>PhD, University of Wisconsin, MS, University of Michigan, BS, University of Michigan</td>
<td>Fish ecology and fisheries management; ecological energetics; modeling predation and production processes; Great Lakes ecosystems; Amazonian ecosystems; ecology and systematics of Neotropical freshwater fishes</td>
</tr>
<tr>
<td>Teale, Stephen A.</td>
<td>Professor</td>
<td>PhD, SUNY ESF, MS, University of Kansas, BA, College of St. Rose</td>
<td>Forest entomology; chemical ecology; pheromones of forest insects; evolution of pheromone communication</td>
</tr>
<tr>
<td>Turner, J. Scott</td>
<td>Professor</td>
<td>PhD, Colorado State Univ., MS &amp; BA University of California-Santa-Cruz</td>
<td>Animal physiology; physiological ecology, thermal energetics; biology of body size; physiology of gas exchange</td>
</tr>
<tr>
<td>Weir, Alexander</td>
<td>Associate Professor</td>
<td>PhD, University of Newcastle upon Tyne, BS, University of Bradford, UK</td>
<td>Systematics and evolutionary biology of fungi using classical and modern molecular approaches; fungal biodiversity and conservation; fungal arthropod interactions; biology of parasites and symbionts</td>
</tr>
<tr>
<td>Whipps, Christopher M.</td>
<td>Associate Professor</td>
<td>PhD, Oregon State University, BS, University of Victoria at Malaspina University-College</td>
<td>Fish and wildlife diseases, parasitology, microbiology, taxonomy, molecular systematics, diagnostics, parasites as biological tags and ecological indicators</td>
</tr>
</tbody>
</table>
Appendix B. Summary of Individual Faculty’s Most Significant Accomplishments

(As written by each faculty member in response to the following request for each individual’s annual report: [Provide a “SUMMARY OF SIGNIFICANT ACTIVITIES AND ACCOMPLISHMENTS DURING THIS REPORTING PERIOD, ESPECIALLY THOSE MOST NOTEWORTHY AND RELATIVE TO THE COLLEGE’S AND DEPARTMENT’S MISSION. One paragraph on each of the following would be most helpful: this past year, what have you done for our students, department/college, and self professionally?”

John D. Castello
I have continued to teach Forest and Shade Tree Pathology; Peoples, Plagues, and Pests with Steve Teale; Forest Health at CLB with Steve Teale; and senior synthesis in Forest Health. I continue as coordinator of the Forest Health major.

Jonathan B. Cohen
I faced a new teaching challenge this Fall as enrollment in my Wildlife Habitat and Populations class grew by nearly 50% from prior years, from around 40 to 58. Time will tell if this was a single-year bump as it looks lower for next year. I tried to accommodate the increased class size with more groups for the group project but that did mean finding an extra class day for presentations. In lab it was more difficult than usual to assist each student. It seems I succeeded in still providing a good experience for undergraduates based on the very positive course survey results. However a couple of grad students were unhappy with the class so I will need to think about how to engage them better if enrollment is ever that high again. Along with Brian Underwood, I also taught my graduate level Bayesian statistics class, WinBUGS for Ecologists, to generally favorable reviews. It was rewarding to be able to teach grad students from different disciplines, as my other quantitative offering is fairly wildlife and fisheries specific. As part of a class “field trip”, some of us attended a workshop on wildlife abundance and survival estimation at Patuxent Wildlife Research Center with the scientist who wrote our class textbook. Responding to a perceived need for more classes on ecological theory, I co-led a seminar on classic readings in population biology with Shannon Farrell. In the future I am thinking of developing the seminar into a population ecology course, which EFB once had. In the spring I co-taught the Core seminar with Melissa Fierke, focused on proposal writing. There I always have the chance to interact with the most diverse group of graduate students, and this year we had a very engaged and enthusiastic group. I am happy to say that everyone in our course who applied for a Sussman Internship received one. I also worked with two Honors students this past year, both focusing on avian biology.

    I have been very busy on the research front, with several new graduate students starting this year. I am now advising or co-advising 5 Ph.D. students and 3 M.S. students and managing $2.6 million in grants and am coauthor on another $2.9 million. My former M.S. student published a manuscript in the Journal of Field Ornithology and began working on her Ph.D. with me under several grants from the U.S. Fish and Wildlife Service and National Fish and Wildlife Foundation. Another Ph.D. and I received a new competitive grant from NFWF to support fieldwork on snowy plover demographics and wildlife road mortality in Florida. A new M.S. student started working with Dr. Whipps and me on another New England cottontail project, and Dr. Michael Schummer and me commenced work on DEC-funded American black duck research with two new M.S. students. My post-doc has been very successful and she received an award for our project at a recent meeting of coastal wildlife biologists and managers, recognizing our contribution to the conservation of piping plovers. The award was very meaningful to me, as it was in honor of a late friend and colleague. My lab traveled to many meetings this past year to present our research. We had three invited talks at symposia, one at the Waterbird Society annual meeting in Bar Harbor, Maine and two at the International Wildlife Congress in Sapporo, Japan. My Ph.D. student received a competitive travel grant from the World Lagomorph Society to present at the Wildlife Congress, so it was exciting to have her receive such a distinction. I have also been busy working on my own research, mainly involving modeling. I should soon have a first-authored paper in Ecosphere on...
structured decision making for management of piping plovers, and I have another analytical paper under review. Overall, in addition to five papers from this past year either in print or in press, I have another 10 under review. I have been proudest of mentoring some of my own students through the manuscript preparation and submission process. This past spring also saw my first Ph.D. student pass her candidacy exam, followed by my second and third in successive months. So my lab was focused heavily on the candidacy process. It was great that they could support each other with studying, and celebrate their success together.

This year I continued my service on the Committee on Curriculum where we reviewed many course and curriculum proposals as some departments have re-organized or added new majors. I was also part of the search committee for a new clerical specialist in the Purchasing office. I served for another term on the Sussman Review Committee, and at the informational session I spoke about ingredients for a successful proposal. I continued to work on the CCAC and as co-chair of GPAC with Dr. Patterson. Our biggest accomplishment this year, with leadership by Melissa Fierke, was production and dissemination of the EFB Grad Student handbook after the passage of new policies by the faculty. We also are working hard on an assessment of graduate student success, as it relates to criteria for GA awards and major professors. I served my second year on the IACUC committee where I have reviewed animal care protocols and toured animal holding facilities. I served another year as advisor to The Wildlife Society Student Chapter, and I am happy to say they recaptured their regional quiz bowl title. This spring, I organized a group of professors in EFB and FNRM with a common interest in early successional ecology and management into the “Young Forest Working Group.” We met twice and are planning to develop proposals for collaborative work related to the rapidly emerging issue of early successional forest and wildlife conservation.

Outside of ESF, I finished my third and final term as a Waterbird Society Councilor and am continuing as chair of their Conservation Committee. My Ph.D. student and I served as advisors and co-authors on the Florida Beach-Nesting Bird Business Plan, which is a 15 year plan for management and monitoring of 5 species of bird in the state. I have also become involved in the Gulf of Mexico Shorebird Monitoring Network, providing expertise on piping plovers. I completed a mentoring program with a high school student from Armonk, NY in conjunction with my New England cottontail project, and he won the “Mianus River Gorge Ecology Award” for his work.

Stewart A.W. Diemont

Students: I enjoy working closely with students on their research and exploring new ways to teach. This year I advised nine graduate students and served on the committee or examiner of seven other students. I continued to modify my courses, seeking to make them more enriching for students. My advisees are investigating traditional ecological knowledge (TEK) and environmental restoration in the northeastern US, southern Mexico, and western India. They are researching the ecological and society needs, mechanisms, and implications of TEK. Other advisees are looking at urban restoration. Once again, their work is at the critical intersection of nature and culture. They consider ecosystem services, paying special attention to the provisioning of food. Three of my advisees graduated this year, two with MS degrees and one with a PhD. All three have continued in academia with PhD fellowships and post-doctoral work. Writing with me, four advisees submitted their graduate work to peer-reviewed international journals this year, two are already published, two in the final review. Turning to my courses, I made major modifications to the project work in EFB 120 Global Environment this year, making service learning central to the project. I wanted to assist students in understanding their tangible role in addressing some of the environmental problems they learn about it EFB 120. I did this to address what students and faculty had described to me as a course need. Students needed to feel a sense of hope with their future and the future of the planet in order to, as the ESF motto encourages, "improve their world." In this same vein I formalized into a permanent course EFB 434/634 Ecosystem Restoration Design, a course that I teach in Mexico and the US. This course has service learning at the core of the group project. Students this year designed a wetland and stream restoration for a neighborhood community in San Cristobal de Las Casas, Mexico.
Department/College: I served the college and department in a number of ways this year. Among the most critical of these was the work that I did on the Academic Governance (AG) Executive Committee. Entering the 2015-16 academic year, I was the sole member of the AG Library Committee, which made me the de facto Chair, and put me on the Executive Committee. Little did I know that this year would be a critical (and quite time consuming) year for the Executive Committee, as we considered new directions and shared governance for ESF. On the Library Committee, once it was further populated, we advised the library on several issues, including faculty, staff, and student access to materials that are being removed from the collection. I also served Academic Governance as a member of the Honors Committee; we advised on honorary degree recipients and Chancellor's Awards for service, teaching, and research. I continued as the Area Leader of the Ecosystem Restoration area of the Graduate Program in Environmental Sciences (GPES), an area that I developed four years ago. The area continues to be strong and has one of the highest applicant pools in GPES. I also continued in my advisory role for the Center for Native Peoples and the Environment (CNPE) and the ESF student chapter of the Society for Ecological Restoration (ESF SER). The CNPE is entering an exciting new phase, as we develop our teaching and research partnerships with Salish Kootenai College and Hopa Mountain through our USDA Higher Education Challenge grant. ESF SER worked on a number of local restoration projects, and members attended the Mid-Atlantic regional conference of SER.

Self Professionally: I continue to explore the links between ecological resilience and traditional, local, or indigenous knowledge and design. During the past decade much of my work has been focused in Mesoamerica, in particular a few villages in Mexico. This year I expanded my focus and have begun looking at other communities in southern US, northern Mexico, Guatemala, Belize, and the Iberian Peninsula in Europe. I planned a series of preliminary interviews that I will conduct this summer, from which I would like to begin to understand climate change recognition and adaptation in traditional food ecosystems. I have researched traditional food systems that are new to me in Europe as I consider research that I would like to conduct during a sabbatical. I have worked with Emanuel Carter, Department Landscape Architecture, and scientists and designers from Vitoria Gasteiz in Spain in planning a new field course. I am excited by these new directions, but I remain committed to my work in New York and southern Mexico. This year I completed my NSF-funded project looking at TEK and ecosystem restoration in Mexico. This project has already yielded several papers and conference presentations (two papers this year). We are better understanding succession in these systems and how Lacandon Maya farmers contribute to ecosystem services that they use (e.g., food and raw materials) while accelerating soil nutrient regeneration. We have also determined how bird communities respond to TEK design. For this project I created a long-term study site that I evaluate with students (both graduate advisees and students in EFB 434/634) how TEK restoration compares to more conventional forms of forest restoration. This year I worked both with my graduate advisee and students in my course in this evaluation. In New York I expanded my work with food systems by advising four MS students in this area: two working in Syracuse with edible wilds and two working in rural New York with old field restoration. I am presenting this work at the American Ecological Engineering Society Annual Meeting. What I am proposing is that food can be part of ecological engineering design; it is currently largely absent.

Martin Dovciak

Students: Once again, I taught Flowering Plants: Diversity, Evolution, and Systematics (EFB 435/635) to the highest enrollment in this class since I started to teach it at ESF (28 students this year)—the number of students in this class progressively grows from year to year which I take to mean that this non-required class is progressively building a positive reputation among students. I also taught Plant Ecology and Global Change (EFB 445/645) to an average enrolment for that class (36 students) and flowering plants’ lectures in our large departmental course Diversity of Life I (EFB 210) and Diversity of Plants (EFB 326). I continued implementing elements of Team-Based Learning™ (TBL) in EFB 435/635 given the positive response from students to it in the past and I started to incorporate TBL elements also in my larger class, EFB 445/645, and liked the positive effects of that approach on the class dynamics in
that class too. I graduated my 12th graduate student (2nd Ph.D. student), Jay Wason, and I am happy to report that he is continuing his academic career as a post-doctoral associate at the Yale University School of Forestry and Environmental Studies. I also worked over this past year with my three new PhD students (Whalen, Roberts, Arias) to help them develop their thesis proposals and with my advanced PhD student (Berdugo-Moreno) who is writing her dissertation and planning to defend this coming year. In addition, I provided a significant lab internship to an undergraduate student (James Molloy) interested in building his flowering plants identification skills focusing on grasses and sedges. Most of my previously completed graduate students and several undergraduate researchers continue to be successful, with professional positions at universities or in environmental consulting firms such as Yale University, Jones Ecological Research Center, UC Berkley, Texas Tech University, University of Miami, or O’Brien & Gere. I helped several current or former graduate students to publish or submit papers as first authors or co-authors (6 refereed, 2 non-refereed) this year.

Department/College: I continued to represent College/Department in my broader professional service including (1) serving as an editorial board member in two flagship journals of the International Association for Vegetation Science (Journal of Vegetation Science, Applied Vegetation Science), and (2) serving as a PI, co-PI, or collaborator in larger collaborative research teams including several institutions and projects (i) NYS DEC and Cornell Cooperative Extension project “Evaluating deer impacts on forests of New York State” (supporting Dr. Mark Lesser, partial support for two doctoral students), (ii) New York Power Authority project “Cost effectiveness of cleaning techniques for controlling human-based transport of invasive exotic plants on electric transmission line rights-of-way across New York” (supporting one of my recent graduates, J. Quant, as a full-time Research Analyst), (iii) US Geological Survey, US Forest Service, and Carry Institute project “Appalachian Trail Mega-Transect Atmospheric Deposition Study”, and (iv) NYSERDA project on acid deposition effects on plant diversity in the Adirondacks (supporting M. Whalen, M. Glaub, T. Callahan). In addition, I completed NSRC project on tree responses to changing environment in Northern Forest (supporting J. Wason) and continued to serve as the Chair for the Selection Committee for the Burgess Graduate Scholarship in Ecology, and as a member of the Graduate Program Advisory Committee. At the college level, I served as a faculty mentor in the CSTEP program, a member in two of the GPES Areas (Ecosystem Restoration, Environmental Monitoring and Modeling), a faculty member in the Center for Urban Environment, ESF Beech working group, and I became involved with the new departmental initiative on Young Forests and Wildlife.

Self/Professional Development: A significant accomplishment this past year for me was to be invited as a speaker to the Mountain Research Initiative (MRI) mixer held in conjunction with the American Geosciences Union Fall Meeting in San Francisco to present research in my group on “Monitoring Changing Forests in Mountain Regions”. This was an excellent opportunity to highlight our research to a group of researchers working in mountain regions across the U.S. and globally. To complement my talk I produced a short informational leaflet with ESF Communications Office which since proved useful as a nice outreach document in general. Another significant accomplishment was that I developed the program for my first sabbatical (approved by the college) which will include an integrated mix of work on research papers, funding proposals, and travel to conferences and collaborating institutions focused on the use of bioinformatics in plant/biodiversity conservation under global change. My research output continued to be productive with three new refereed and two non-refereed publications and four additional manuscript submissions. Importantly, I worked on a relatively large number of additional manuscripts (10) now in advanced stages of preparation and planned for submissions within the next few weeks to months, including some for high profile journals (Global Change Biology). My summer travel to Europe and communication with colleagues there continued to enhance my research on forest and forest-grassland ecotone dynamics (a paper published in PLOS One, and new manuscript for submission this summer).

John M. Farrell

Students: I have hired and supervised ~20 staff and students during this reporting period. Many of these people are undergraduates getting their first on-the-job experiences in their chosen field. I have two
new MS graduate students funded on RA’s and finished one MS and two MPS students this year. Two primary staff of TIBS left this past year for other jobs and I hired two new professionals (one Post-doc and a Senior Research Support Specialist) following a search process. There are 14 students and staff working at TIBS during spring and summer 2016. As a group we are making strong use of the new TIBS Cean Aquatic Researcher facility and it’s filled to capacity. The aquatics lab at TIBS is teeming with research activity and students are getting priceless hands on experiences. For example, students helped culture and release nearly 50,000 advanced fry muskellunge for release into the wild as part of a DÉC and USFWS sponsored research project.

For the department/college: I secured a new 5-year contract with DEC for $1.4M and continue to pursue novel population of and habitat restoration initiatives to support St. Lawrence River and Great Lakes fisheries. I assisted the ESF College Foundation and Alumnae office with the ribbon-cutting ceremony for the new Cean Aquatic Researcher Building at TIBS and served as a MC for the event. I continue to serve on the P&T committee and stay active in contributing in many EFB and Aquatic and Fisheries Science activities. I recently hosted a potluck and discussion for AFS May graduates and participating faculty to discuss their experiences at ESF and how we might improve our program.

For self professionally: A highlight was being a co-author (with my former student Dr. Derek Crane as lead author and other colleagues) on the cover issue for Fisheries magazine in a feature article on muskellunge ecology and management published last June. Several of us are now co-editing (editor is former student Dr. Kevin Kapuscinski) a peer-reviewed book of the proceeding for the 50th anniversary conference for Muskies Inc. I also worked closely with an exciting new collaboration with Project Baseline, a group dedicated to understanding and monitoring ecological change in the world’s oceans and freshwater aquatic environments using diver-assisted data collection and targeted projects. The Northeast Underwater Explorers and the St. Lawrence River Institute have visited TIBS several times and we established a citizen science program where they collect data for TIBS to help monitor the river. We worked together to complete promotional materials including an informational video. The first data collections are being logged and interesting observations from deepwater environments are now available.

Last fall I worked closely with a colleague at Carleton University to set up an acoustic telemetry array at three coastal wetlands in the upper St. Lawrence River. A post-doc and a group of ESF and Carleton University students and one student from Laval University worked together to tag fish and establish the array, the first of its kind for juvenile muskellunge research. We also continue the St. Lawrence River Fish Habitat Conservation Strategy that is leading to an impressive list of aquatic restoration and enhancement projects with agency partners including USFWS, DEC, and Ducks Unlimited.

Shannon L. Farrell

Students: Helping students get exposure to wildlife professionals and access opportunities to find and prepare for internships, seasonal jobs, and grad school opportunities has been a major focus this year. EFB 390 this fall included a well-received class project that required students to interview 2 wildlife professionals in different spheres (govt agencies, NGOs, etc) and several students made connections that opened the door to summer work and other. In both courses each year, I provide a forum on blackboard for openings and tips for finding summer technician jobs & internships; this year I added several mini-workshops for finding summer wildlife jobs, working on resumes and cover letters, and prepping for interviews. I continue working to develop a website/blog-type forum for students to share their field and internship experiences to help other students find paths that fit their interests. With tools and basic skills to record class lectures and produce video, I’m currently working to edit and create new video tools for course websites. Gordon Paterson and I continued to work on lining up a wide variety of high impact speakers, and to improve awareness and attendance for the Adaptive Peaks seminar. We have made adjustments to the course format to better serve graduate students, including more opportunities for student presentations and peer feedback. This Fall, we ran our first live-streamed and archived seminars on ESF’s Google and You Tube pages and now have equipment in-house to expand this practice.

Teaching the Philosophy of Science portion of the Fall grad Core Course, I got enthusiastic feedback from students who would like a stand-alone Philosophy of Science course; I was glad to hear this topic
was well-received and the feedback has reinforced my long-time interest in creating a graduate seminar on this topic. Though I have found it to be challenging to integrate undergrads meaningfully into the type of wildlife work done in my lab, particularly during the academic year when there is little or no field work being done, we added several undergrads to our lab team in both Fall and spring of this year. We provided several with access and funding to technical training on several bat acoustic research techniques that will be valuable skills on their CVs. Several students assisted with data management for bat acoustic data and vegetation data. Several worked on data analysis with 2 students setting the achievable goal of preparing a publishable manuscript as a result of their analysis.

Department/College: This year I’ve continued to have the opportunity to do more than just serve on committees but participate in committees that were working on projects to make meaningful contributions the college. I’ve been working to bring new tools and technology for class video production and ran a mini-workshop to familiarize colleagues with the newly available tools and software; working with the others who have been using these tools to develop additional College-wide workshop opportunities. This work has been synergistic with tasks I’m working on as a member of IQAS, in particular designing the framework, budget, and proposal for establishing a Center for Teaching and Learning, which would provide support for use of such teaching tools and technologies, among other services. As a member of the IQAS committee, I’ve been able to assist with major efforts to develop college wide general education assessment plans, and to conduct the preliminary Gen Ed assessment. This has resulted in the formation of a new General Education committee, given the scope of this endeavor and I’ve been asked to serve on this committee. We completed planning, executing, and reporting out on a College-wide Gen-Ed Assessment this Fall building on the framework created by IQAS last year. I have been serving on the Pink Fellowship committee since Fall 2013, but this year updated and overhauled the application, criteria, and priorities for what kinds of applications the committee is focused on funding, to make the application process more clear and straightforward, and allow students to discern whether their proposal fits with the newly-clarified priorities of this particular award.

Self: I have now completed almost 3 years in this position, working on building the lab, research program, and my niche here. My first graduate student, who began in January 2015 completed our first season of field sampling on Cape Cod and Fire Island National Seashores and we added a second MS student this Fall to work on the coastal bat project as well. Getting this NPS-funded project launched and headed in the right direction enabled me to build additional funding for additional years; we secured an additional grant to support a PhD student to investigate Fall bat habitat use and movement and potentially locate hibernacula. This year, a focus for me has been learning the ropes of advising graduate students. Our lab has been joining with Jonathan Cohen’s lab for joint lab meetings which has helped my graduate student learn from others and have a network to share and develop ideas. I have continued to focus on developing relationships with prospective collaborators and funders, attending a number of meetings with other bat researchers in the Northeast. This year, we really began to get our lab website up and running and this has resulted in a large uptick in the number of inquiries I receive from prospective graduate students. My continued work on lesser prairie chicken conservation planning has allowed me to continue to develop connections with partners including Environmental Defense Fund, Farm Bureau, USFWS, several major energy companies, and state, regional, and leaders for USFWS Southeast region. Our final draft - a Habitat Conservation Plan, along with implementation documents for the science & operations for a brand new habitat crediting system approach- is in the final stages of an EIS process and on its way to the federal register for public comment. The fruits of this work have resulted in inquiries from the Department of Interior for assistance addressing other similar conservation planning challenges including the greater sage grouse. As a result, I’ve had 2 meetings in Washington DC with deputy assistant secretaries at DOI, to provide expertise and technical guidance for addressing the challenge of greater sage grouse planning. I have continued to work with colleagues at Texas A&M University and now Bird Ecology and Conservation Ontario on finishing up analysis and publication of previously collected data and development of new research ideas. Currently, we are working to develop a pilot project investigating both the ecology and population dynamics of American robins, as well as investigating their prospective role as a reservoir for Lyme disease and potential agent of geographic dispersal of both Lyme disease and
infected ticks. I have gotten a great deal of interest and enthusiasm for this understudied topic and am seeking seed funds to begin preliminary data collection this summer.

**Danilo D. Fernando**

Students: This past academic year, I taught EFB 427/627 (Anatomy and Development of Plants), EFB 326 (Diversity of Plants), BTC 420 (Research Apprenticeship), BTC 497 (Research Design and Professional Development), EFB 495 (Undergraduate Experience in College Teaching) and BTC/EFB 498 (Independent Research in Biotechnology/Environmental Biology). I also gave a few lectures in other classes (EFB 210 and EFB 535), and served as curriculum adviser to several undergraduate students. Overall, at least 100 undergraduate students have been served through this capacity. I did not have a graduate Teaching Assistant for EFB 427/627 which had two lab sections and a total of 11 students, which meant that I did most of the pre-lab preparations, actual lab instructions of at least 6 hours per week, and marked all of the lab reports (5 per student) for this course. In addition to the formal interactions with the students in all the courses I taught this past academic year, I also interacted with many of them out of the lecture and lab periods through involvement in their respective lab projects and/or writing assignments. Many of the students also came in during my office hours for clarifications, questions and/or conversations on various topics including practical applications of concepts covered in the lectures and labs. I updated the laboratory manuals in both of my major courses (EFB 427 and EFB 326) and the revisions included suggestions from the graduate and undergrad TAs, as well as from the students who went through them. I have trained several undergraduate students in my lab through independent research, internship and apprenticeship. As for graduate students, I have advised many graduate students from the department regarding their program requirements, filing up of the required forms and shifting from one major or degree program to another. I have worked with my graduate students on various aspects of the laboratory and/or field components of their research projects, draft manuscripts, grant/fellowship applications, and poster/oral presentations.

Department/college: I served as EFB’s Graduate Director for the 9th year and my major responsibilities included the following: 1) acted on various petitions concerning different aspects of EFB graduate program requirements and policies; 2) reviewed and signed on various forms required for the completion of different degrees and majors (e.g., 2A, 3B, 4 and 6A); 3) replied to inquiries concerning EFB graduate program (through email, phone, and/or personal appearances) from several potential applicants and current graduate students; 4) processed a total of 110 applications (10 for spring 2015 and 100 for fall 2016) that involved the review of each application for initial assessment and designation of faculty reviewers, followed up on the completion of the reviews on each application, summarized the reviews for each application, and submitted EFB’s recommendation for each accepted and rejected applications to the Dean of Instructions and Graduate Studies; 5) provided informal orientation to new graduate students regarding EFB graduate program and new faculty about the graduate application and review procedures; 6) I also worked with EFB Secretaries on the update and improvement of the various facets of the EFB’s Graduate Webpage, graduate application filing system, and continued the survey on the most effective means of attracting/recruiting graduate students; and 7) As a member of EFB’s Graduate Program Academic Committee and ESF’s Graduate Council, I provided connections between the department and college on issues pertaining to graduate degree program offerings and requirements, admission/review process, policies, and other related matters.

Professional accomplishments: The following are what I consider as significant: 1) Recruitment of a new Ph.D. student (Masoumeh Khodaverdi) who will start her program this fall 2016; 2) Invited research webinar presentation (Assessing variations of a rare fern the Northern Forest to understand plant responses to climate change) sponsored by NSRC; 3) Invited presentation (Populations at the edge of range: are they worth conserving? Insights from Dryopteris fragrans) for the EvoDay Symposium at Cornell University; 4) Recipient of the 2016 Jewett Prize from The Arnold Arboretum of Harvard University through my project on “Flower and Fruit Development in Actinidia arguta: Digging Deeper into the Developmental Basis of Ovule and Carpel Abortion”; and 5) last but not the least, I have continued writing and revising all the chapters of the textbook (Sexual Reproduction in Forest Trees) that
I am co-authoring with Dr. John Owens through Cambridge University Press. Target date of completion is August 2016.

Melissa K. Fierke

I had over 300 students in freshman GenBio this past fall for which I supervised three graduate and eight undergraduate teaching assistants along with their workshops and grading - all went smoothly with overall class evaluations again strong for the two lecture sections. I co-facilitated the fall EFB Core Course for graduate students where the main goal was get grads off to a good start in the department, forming a supportive cohort of students, and this year, Shannon Farrell co-facilitated and did a wonderful job on the Philosophy of Science section. I also co-facilitated the spring core course with Jonathan Cohen with the primary goal of all grads writing a solid research proposal. I oversaw two summer internships. Three students worked on research projects under me this past summer/fall/spring and all presented at ESF’s Spotlight on Research. I’ve written >20 UG student recommendation letters with many resulting in successful internships or positions. My first PhD student finished and is now working as the WI Gypsy Moth coordinator. He won outstanding PhD student in EFB as well as many other awards during his time at ESF. I am happy with the current state of my research program and the progress of my current graduate students. We’ve had several publications come out and I am still working with several others on their publications. Three of my graduate students will present at the National Entomological Society meeting in Florida and have presented at many other venues as well. I currently have six graduate students working out of my lab as well as seven ESF undergraduates hired on multiple research projects for the summer, a just finished high school student, and two Brazilian student volunteers.

One achievement of note this past year is the development and release of EFB’s first ever Graduate Handbook. This was a team effort led by the Graduate Program Advisory committee, especially Danny Fernando, EFB’s Graduate Coordinator and Jonathan Cohen (co-chair of the committee). I worked closely with Academic Governance and Administration as part of a Core Team on challenges we faced in the past year. I served on several other college committees as well as taking an active part in the ESF First Year Experience Committee, working with other faculty on student retention and success. Within this group, I spearheaded development of an undergraduate advising handbook, which was endorsed by Academic Governance and provided to all faculty this past spring. I have continued my efforts on our ESF Bicycle Safety Committee and have been working with ESF partners, Syracuse University engineers, planners and safety officials as well as the City of Syracuse Transportation Planner, and multiple neighborhood groups to make bicycling a safer commuting option for faculty, staff and students at ESF.

I have continued building relationships and received continued funding on emerald ash borer research – all of which contributes to recognition and employment opportunities for students as they graduate from my lab. Working on the tick/Lyme research has been rewarding and has contributed to informing the actions of local and county efforts on deer management. A new research direction in my lab is on pollinator conservation. I look forward becoming more knowledgable about and contributing to this extremely important topic relevant to entomological/conservation issues.

Elizabeth Folta

Students: This year I taught four interpretive courses and co-taught one additional courses that focused on interpretation and ecotourism, which had a total enrollment of a 92 students. I co-taught the Ecotourism Abroad course for the second time with by Diane Kuehn. This year we took 5 students to Nicaragua. Where we worked with the Comunidad Connect (CC), which is a non-profit based in Nicaragua and was co-founded by an ESF alumni. The students experienced a variety of different ecotourism sites including visiting a remote village, Sontule which is located in the Miraflora Reserve. The women’s cooperative in Sontule hopes to promote ecotourism to their village as a way to support their cooperative and the village. They use the money they generate from their various endeavors to
provide college scholarships for the children of the village and to help the women of the village. The focus of the class was the service learning projects for the women’s cooperative. The students participated in two projects 1) mapping various trails, 2) interpretive/promotional brochures for the homestays and guided services offered through the women’s cooperative. The students really enjoyed the experience of living with some of the local families. Diane and I are polishing the interpretive brochures to send to CC, who will pass them along to the women’s cooperative. We are also working with Dave White to create a video of the experience to help with class promotion. He also created a Going Green segment on Ecotourism using the footage from our class. Diane and I formalized the course, which will be offered as FOR 404 starting next spring. Next year we have decided to try something new with the course. We are working with Education First a travel organization instead of a non-profit to arrange everything. We will be heading to Costa Rica next year. The focus of the course will remain the same and Education First is busy figuring out which local organizations would be best for us to work with on the service learning component. As part of EFB 500 Interpreting Field Biology the students conducted reviews of the Adirondack Interpretive Center (AIC) trails and made suggestions for the AIC’s new digital trail guide that they are in the process of creating. All of these materials were shared with the staff there. The students also had the opportunity of working with one of the local elementary schools that was on a field trip to the AIC. Two of the students in the class led a nature walk for the elementary school students and then the rest of the class participated in a play for them. It was a last minute addition to the course but one that meant a lot to my students. As for graduate students, I started working with one new PhD student this year, finished up 4 graduate students (2 MPS and 2 MS), and continued working with two other graduate students (2 MS) who should graduate in the fall. The two continuing MS students are actively collecting their data and should have it done by the end of the summer. Finally, I worked with Katie Mulverhill to pilot test a portfolio review of Environmental Education & Interpretation majors. She created the rubric and evaluated the two student portfolios. We plan to meet and discuss the review over the summer to fine tune it some more. There were several issues with the portfolios. Even though we provided a list of materials (all products from required courses) that at minimum the students should include the portfolios were missing some of the items. Katie, knowing the students from previous classes, knew they had more experience and skills than what the portfolio was providing, so we need to figure out how to better represent the missing information in the portfolio. She based the rubric for the portfolios of the NAAEE required for professional educators, which are the same criteria used in accreditation. In order to move forward with accreditation we need to find a better way to demonstrate that we are meeting the criteria in the portfolios.

Department/College: I served on the CCAC for the fourth year. We reviewed several course proposals and field petitions. As part of the work on the CCAC I finalized the assessment report for the Environmental Education & Interpretation major and pilot tested the proposed portfolio review with two graduating seniors (see previous paragraph for more information). I started serving on the Student Life committee this year. As part of the committee I helped address various issues that Dean Lombard or someone else brought to the committee’s attention. Finally, I continued to serve as the advisor for INTERP, which really came to life this year under the strong guidance of the officers. They started off the year by helping a local Webelo Scout troop with one of their badges. The members of the club designed and delivered the program for the scouts. INTERP also helped plan a festival this spring for a local community garden. The president and vice president of the club helped train the Excelsior Conservation Corps – Environmental Education team in how to deliver tableside/festival activities. The club is providing great opportunities for the members to get involved with the local community and practice their interpretation skills.

Self: I was part of two teams that were awarded grants this year. The first was an EPA Environmental Education grant focused on stewardship education using the Haudenosaunee’s Thanksgiving Address as a lens to look at the natural world. As part of the team I have been helping review the curriculum materials as they are developed by two graduate students working on the project. I will also be helping with the teacher workshop (open to middle school teachers, high school teachers, and college faculty) that will be offered in early August and the evaluation of the curriculum that will start this
coming fall. The National Institute of Food and Agriculture grant will help the grant team design a new graduate program at ESF that will focus on integrating indigenous and scientific knowledge. In addition to the grants received, I was a part of ~$1.4 million in research proposals this year. One of the proposals was rejected and the others are still under review. I have continued my partnership with NY State Parks this year, which has opened up several opportunities for my students with their research and professional interests. I also had the opportunity to serve on the hiring committee for Beaver Lake Nature Center’s new exhibits. We interviewed 5 design firms in early May. The design process will start this summer and the final exhibits will be finished by August 2017. This is a new experience for me which will help me better teach EFB 404. The Project Learning Tree (PLT) International Coordinators’ Conference in Saratoga Springs, NY went off without any major issues. I learned a lot from helping to plan and coordinate the conference. We had participants from 4 countries and all over the United States. We got positive reviews from the conference participants. Finally, I attended NAI’s Social Interpretation workshop that focused on social media and interpretive design. It is a workshop I have been wanting to attend for years and finally had the opportunity. The workshop will help me update the materials for EFB 417/617. It also introduced me to new tools that can be used in the course. While, I did not get as much out of the workshop as I had hoped it reinforced my confidence that what I was teaching the students is the best information currently available.

Jacqueline L. Frair

Students: This year I focused a bit more on student mentoring – both at the graduate and undergraduate level. With grad students, this year we hosted a monthly lab meeting (combined with the Cohen and Farrell labs) at my house – a potluck dinner followed by a student presenting some aspect of their thesis or dissertation. This has proven quite successful in keeping many of the wildlife graduate students in contact, cross-fertilizing ideas, and leading to new research collaborations. I also co-taught Landscape Ecology with Colin Beier and Guillaume Bastille-Rousseau, and tried to help graduate students from several different programs across campus work spatial ecology into their thesis/dissertation work effectively. With undergraduates, I engaged more students than ever (13 this year) in assisting to deliver my core wildlife science class and in my research program – from helping guide field sampling for student term projects to tracking moose productivity in the Adirondack Park. I think it is very important to help foster leadership among undergraduate students, cultivate their communication and teamwork skills, and help them gain important resume-building experience. These students prove to be the greatest mentors to their peers, and enrich the student learning experience enormously.

Department/college level: This year I focused on securing the endowment needed to add a new wildlife faculty line to the department. Working closely with the College Foundation and Camp Fire Club of America, we have secured $685,000 towards our initial $1 million goal (which we will hopefully reach this year!). I’ve also been in negotiations with the NYS DEC regarding the continuation of our 5-year research MOU, laying the ground work this year for the next several years of research partnership. And I continue to work on several Roosevelt Wild Life Station initiatives.

Self: I was also honored this past year with a research collaboration award from the USFS for my part in a large collaborative project assessing potential resistance to white-nose syndrome in bats in the central US.

James P. Gibbs

Students: In January 2016 I re-assumed responsibility for coordinating the Conservation Biology major and worked to streamline the process for petitions and other operations of the major. I continue to teach two of the three core courses in the Major. Notably one of those courses – Introduction to Conservation Biology – serves all members of the major and an equal number of students from around the College plus Syracuse University. I renewed about 1/3 of the material in the Problem-solving in Conservation Biology course to good effect but unfortunately the class now has outgrown capacity for the only room apparently available in which to teach the class (62 students in a room for 60) which made teaching the class a challenge. During the spring semester I orchestrated the ESF-NYSDEC/FWMR
internship that placed many EFB students in well-paying internships doing fish and wildlife species protection and habitat management work for NYSDEC. I advise 10 graduate students of which I expect half will graduate next year.

Department and College: I serve on the EFB P&T committee, coordinate the department’s largest undergraduate major, serve as Director of the Roosevelt Wild Life Station, which has seen significant activity this year. A publication in *PLoS* describing a new species of giant tortoise and also a field expedition in Nov. to harvest hybrid tortoises of purportedly extinct species from Volcan Wolf garnered significant media attention for the College this year.

Self: I was delighted to receive the SUNY Chancellor’s Award for Scholarship and Creative Activities for 2016. I continue to push ahead a complicated and ambitious Galapagos Tortoise Restoration Initiative (serving as co-Director of this $1.2M effort between the Galapagos Conservancy and the Galapagos National Park Service Directorate) that is the culmination of two decades of work. Service as board member to The Wetland Trust has occurred at a time of progress on significant land protections by this group this year.

**Hyatt C. Green**

Students: Fall 2015 was my first offering of EFB 303: Introduction to Environmental Microbiology, an essential component of the Environmental Health major previously taught by professors Nakas and Castello. As usual, ESF students were amazing to work with and I hear they enjoyed the lecture and labs very much. Overall, I spent 8.5 hours of face time with students per week. We are very luck in Upstate NY to have many rich examples of diverse microbial lifestyles and applications. Students observed some of the rare extremophile bacterial taxa or “microbial dark matter” we have submersed in local meromictic lakes by making Winogradsky columns. I hooked students up with Onondaga County’s Dept. of Water Environment Protection to analyze official local ambient water samples from Onondaga Creek during our segment on water quality. Although the methods varied slightly, student data agreed with County data collected from the same samples with an R² of 0.86—nice work guys! We also toured Saranac brewery’s (Utica, NY) analytical lab and anaerobic digesters. I look forward to continue growing the course and bringing real research to the students. Spring 2016 was my first offering of EFB 505: Microbial Ecology, a undergrad/grad course for those interested in going deeper into the broad field environmental microbiology. We discussed important/recent primary research in an effort to get students thinking like microbial ecologists. I’m excited about the dynamic between these two microbiology courses and how they may play off of each other in the future. Spring 2016 was also my second offering of EFB 796: R and Reproducible Research, a grad class that maxed out capacity even though I nearly tripled capacity from the previous year. Although I will continue to make minor adjustments to the course and try to keep up with R’s rapidly increasing capabilities students seem to love the content and format in general. I also gave one guest lecture in Diversity of Life II on the Human Microbiome.

Departmental and University: Currently, I advise 17 EFB undergraduates, but hope to take on more next year as advising week is probably my favorite part of the term because I get to see students outside my role as instructor. I hope that my serving on the Disease Ecologist/Epidemiologist search committee with the first of many search committees. I also represented the Biotechnology major during Spring 2016 Open House.

Self: I published two papers this period, one as a second author and one as first and corresponding, both in *Applied and Environmental Microbiology*. Our chapter in the fourth edition of the Manual for Environmental Microbiology was finally published. The bog turtle eDNA work funded by US FWS is going well. It is taking place within a large consortium of groups in NY, NJ, PA, MD, RI, and CT in an effort to protect bog turtle habitat. We are currently in the method development stage testing candidate assays against a DNA library in collaboration with researchers at SUNY Oswego and USGS. We are working Sarah Hall (SU) to develop novel DNA extraction control methods. I am working with SUNY IP attorneys on the possibility of patenting the final validated methods. Onondaga Lake shoreline assessments funded by ESF’s Center for Applied Microbiology are just beginning and should provide a better picture of the ‘swimmability’ of Onondaga Lake at a proposed beach site. Just upstream so to
speak, we are working with Onondaga Environmental Institute in identifying the sources of harmful bacterial contaminants. OEI will submit samples for cultivation of indicators while my lab will do the molecular source identification. I am working with the researchers at Univ. of Buffalo and NY DOH to better identify funding opportunities and possible collaborations on NY water quality issues. Recently, my lab was selected to receive ESF Seed Grant funds to study the ‘microbial dark matter’ in Green Lake, NY. Interestingly, these elusive bacteria are hypothesized to play a role in the methylation of mercury. We will begin sampling and metagenomics prep work Summer 2016 in collaboration with Mark Teece (ESF) and Charley Driscoll (SU). This work is intended to further develop Green Lake as a test bed for a diversity of biogeochemical and microbiological research. I also anticipate doing some microbial source tracking in collaboration with Salt Lake County on the theologically important Emigration Creek outside of Salt Lake, Utah. While the current lab is not completely ideal for molecular work, I am positive we can keep generating good data until new facilities are completed.

Thomas R. Horton

Students: Each year the students in EFB 320, General Ecology, energize me and this year was no different. As usual, the students in the front rows, middle of the hall have the greatest impact. I really enjoy those times when an open discussion develops on a topic. I know I learn a great deal from you guys during these discussions and I hope everyone benefits. This year I received an anonymous letter from one of my EFB 320 students thanking me for being able to admit when I do not know and taking the time out of lectures to discuss the options openly – this is in my opinion the essence of an effective learning environment. That letter made my day, week, and year…thank you anonymous letter writer! To be sure, General Ecology is a foundation for most majors in EFB. I hope it is also a foundation for my student’s careers and interests in natural history after finishing their studies at EFB. This year I also taught my advance course, Advanced Mycology: Basidiomycetes. The number of students that took the course was small, at only 6 undergraduates. These students were very appreciative that I taught the course despite the low enrollment and they were wonderful! They thrived with this more intimate learning environment, digging into the subject with my guidance rather than my direct instruction. I also taught a number of special courses in which students worked in my lab on individual projects. These students gain a wonderful view into the research endeavor as it may occur in a laboratory program such as my own that involves both field sampling and molecular techniques. Some are just dipping their toes in (EFB 298) while others are jumping in feet first (EFB 498, ESF 499). One of my EFB 498 students from the previous year had his paper published this year (Meyer et al. 2015). Another former student (our only undergraduate Fulbright Scholar) is now headed for a Ph.D. with a colleague at Stanford University. Again, I could not be happier for him!

Department/College: Teaching EFB 320, General Ecology always pops into my mind first when I think about service to the department and college. In addition to the students in the EFB majors, I taught many students from other departments (71 out of 230 total enrolled). I also served on the EFB Promotion and Tenure committee. We had several faculty up for their 3-year review and in addition to reviewing their current dossier, this also involved observations in the classroom. I am also one of the Departmental ARB committee members. After many year of work, the ARB is finally in the final stages of planning and I am very much looking forward to the facility. I was also on the Strategic Planning committee. Finally, there was lots of under the radar work on generating and supporting a more positive campus environment, an effort that has resulted in positive steps forward.

Self: My biggest personal success this year was the publishing of a book I edited with Springer’s Ecological Studies series, Horton TR. 2015. Mycorrhizal Networks. Dordrecht. Netherlands: Springer. This is the 244th volume of a prestigious series with authors and editors that I consider leaders in their fields. I have found one review that ended with the following: “… the editor, authors and publishing staff did an excellent job on the content, style, and format of this book. Overall, I can recommend this book as a reference source for scientists already involved in mycorrhizal research, and as a scoping source for scientists from other disciplines looking for a manageable and well-studied example of a symbiotic system.” My other big personal success was landing a McIntire-Stennis grant to conduct a research
project at the Albany Pine Bush Preserve. The project combines my interests in the role of mycorrhizal fungi in plant succession and fire ecology. I always get great satisfaction advising high quality undergraduate students in my lab on small research projects and see those efforts contribute to their Honors Awards and landing jobs and graduate school positions. This year I taught an undergraduate seminar in Fire Ecology on the request of several General Ecology students. It filled up on the second day of registration with a great group and it is clear I will revisit the topic in a future course. During the semester I sent job announcements in fire ecology to the class and was recently told by a graduating seniors that she landed one of the jobs, which obviously made my day. The course also played role in my being interviewed with WSYR Channel 9 news about a fire that burned in Kirkville in May. In addition to editing the Mycorrhizal Ecology book I authored the preface and co-authoring one chapter, I had three new articles published this year, including one in the New Phytologist (IF=7.6). Overall my papers continue to be frequently cited (h-index = 19), averaging about 60 citations/publication and 175 citations/year since 2005 (Web of Science 6/1/2016).

Robin W. Kimmerer

Students: In addition to teaching four innovative classes which receive strong positive feedback, I have served our students in informal settings as well, as a CSTEP mentor, as advisor to the Primitive Pursuits Club, an internship sponsor and informal mentor to many students. Student feedback indicates that they appreciate the diverse, creative approaches and perspectives offered in my courses. I design and coordinate the new college-wide minor in “Native Peoples and the Environment” which has a growing enrollment. I have played a leadership role (with my co-PIs) in receiving two significant new grants to the College which are specifically targeted at enhancing educational offerings. Our new grant from USDA Higher Education Challenge Grant will enable us to create and deliver a new graduate program which integrates Traditional Ecological Knowledge and Scientific knowledge in the field of biocultural restoration. Our grant from the EPA Environmental Education program supports a similar mission. I’m excited that ESF is growing in these new directions to support graduate education specifically designed to foster innovative approaches to intellectual and cultural diversity in the curriculum for our students.

Department and the College: In addition to my usual activities and listed service, I came forward to serve as Co-Director (with Dr. Fierke) of the Cranberry Lake Biological Station this year, in order to fill the gap left by the departure of the previous staff. Together, we have planned and coordinated an expansion of the CLBS calendar and offerings to accommodate an ever-growing demand. I also serve as founder and Director of The Center for Native Peoples and the Environment which has brought significant positive attention to the College’s leadership role in incorporating traditional ecological knowledge in environmental education and research. I’m particularly proud of the contributions of the Center as an emerging change agent in broadening the scientific dialogue to include traditional ecological knowledge. Our major accomplishments this year include the success of 2 large grant proposals and expansion of our numerous programs. One of this year’s highlights was the recognition by SUNY ESF of the Onondaga Nation in the “Where We Stand” event in November. The impact of the Center can be seen in the number of invited presentations and collaborations on traditional ecological knowledge requested from around the country. The validity of using TEK as a partner to ecological science in education and research is gaining traction through our efforts. The momentum behind this endeavor is reflected numerous invitations for keynotes, lectures and presentations This year, I have given at least 32 public presentations to academic, professional, governmental and community organizations all over the country, as well as numerous interviews, videos etc., which I trust brings attention and respect to the work of SUNY ESF.

Professional Development: Outside of a full teaching load and the leadership of the Center for Native Peoples and the Environment, my scholarly energies are largely devoted to disseminating the body of work related to integration of traditional indigenous and western scientific knowledge, primarily through a large number of public presentations in diverse arenas. Given the urgent environmental issues we face, and the power of literary non-fiction as a cultural change agent, I am committed to investment of my scholarly efforts in that arena. Drawing upon the impact of widely distributed interviews with
programs such as “On Being” and “To the Best of Our Knowledge”, this spring I worked to create an audiobook version of “Braiding Sweetgrass” to reach a widening audience. I am continuing to learn and appreciate the power of engaged scholarship of writing and speaking to a non-academic audience as a pathway to influence public dialog on sustainability. Working in this interdisciplinary arena of public dialogue and engaging teaching tools outside of my academic expectations has been both challenging and rewarding, contributing to professional growth in new directions which can benefit my creative capacity as an educator and writer. I will also admit that it is exhausting and leaves little time for in-depth writing and scholarship. I benefitted from a Writer-in-Residence program at the Blue Mountain Center this year and I will be developing a sabbatical proposal designed to create space and time for completion of a new book.

**Donald J. Leopold**

Students: I finished two M.P.S. and two M.S. students this past year for a total of 69 graduate students finished since I started at ESF in August 1985. I thought that one of the M.S. studies, i.e., Grete Bader’s on the huge populations of native orchids on abandoned iron mine tailings in the Adirondacks, would have broad appeal so I drafted a press release that when released by our Communications Office generated more social media attention than any other plant-related story at ESF in my career except for the American chestnut research. National Geographic’s featuring of this work on their website was especially effective in generating national and international interest. The interest continues as the editor for Adirondack Life is meeting the graduate student on the site in July and plans on running a feature story. I taught EFB 336 Dendrology for the 30th year and it was more fun as ever as student interest and engagement were very high.

Department/College: I will have served as chair of EFB for 11 years this July. Among the administrative highlights were hiring a new Epidemiologist for the department (Dr. Brian Leydet), being responsible for and hosting two very successful Dale L. Travis lecture events, and attending on behalf of the College and department the NY City launch of E.O. Wilson’s Half Earth book and project.

Self: Of the 16 invited presentations I made last year, participating in the New York Botanical Garden’s Native Plants Summit in September was especially enjoyable as this event was the first one ever at the NYBG that sold out its large auditorium. I was very pleased to be among the collaborating scientists and engineers that Honeywell invited to attend the lunch at the NY City Metropolitan Club last November at which they received the Thomas W. Keesee Jr. Conservation Award. A highlight of this event for me was making an invited presentation “The botanicals, water, and barrel effect” on the private bus during the return trip to Syracuse.

**Karin E. Limburg**

Students: This past academic year, I let students enter my world a bit, by teaching two seminars and an experimental class, in addition to my usual offerings. A seminar I ran last fall, titled “Melting in the Anthropocene,” surveyed the current situation in the Arctic (rapid climate change, sea ice melting opening new commerce routes, military security issues, oil/gas/mineral/fisheries exploitation, biodiversity losses, societal disruptions…). The spring seminar, “Migration Ecology of Marine Fishes” involved reading a difficult yet highly insightful book that casts a new paradigm for marine ecosystems and how we should view fish populations there. The students seem to appreciate the cutting edge nature of these seminars, and in particular, it’s been interesting to see how undergrads deal with this difficult material as well as being in amongst grad students. But the most fascinating project was to teach an experimental class with two landscape architecture colleagues (Jamie Vanucchi, now back at Cornell, and Doug Johnston) to “think the unthinkable” and consider how to take down a mile-long, 100-foot high dam near the mouth of the Susquehanna River: the Conowingo Dam, which all the local scientists and stakeholders say is “off the table” for removal. John Waldman and I have published a couple of op-eds about this, saying that it’s not impossible, but takes some creative thinking. Thus, getting a group ESF and Cornell students to put their minds on this “wicked problem” was an ideal way to excite them and to generate some novel ideas. Indeed, the ESF students were so into this course, that they created a website about it
This website has had a fair number of visitors, and we have received some nice compliments about it.

Although I am not really allowed a second paragraph, I would like to mention that it seems that my efforts to get grad students to publish as they go, or shortly after they finish, is starting to bear fruit. Of the 10 publications I listed above, 6 are first-authored by students. I hope we can continue to get students to publish, as this has become such a hurdle as regards getting ahead in the job market.

Department and college: I continued to serve on the department’s Graduate Program Advisory Committee, and began a term on the College’s P&T oversight review committee. I was also involved in the strategic planning exercise. One of the most fun activities was to help organize a Dale Travis lecture in the fall. I was allowed/encouraged to bring on colleagues versed in the arts of literature, painting, and photography, all focused on fisheries and conservation. It was an amazing experience.

Self: It seems that my expertise in otolith chemistry is now very much in demand. Thanks to this admittedly obscure expertise, I became a Visiting Professor at two different universities in Sweden, obtained my own research grant there, and am part of a multi-million dollar project involving 5 different countries. In addition, I am increasingly engaged in international research coordination efforts; some involve the “collision course” of human activities on continental margins, and others involve the worsening problem of loss of oxygen in the world’s oceans. Both of these are extremely complex topics that require a multitude of expertises; I consider myself very lucky to have become engaged at this level of international science.

Mark V. Lomolino

Students: I have continued to teach courses that emphasize fundamental biological, geological and geographic factors that influence biodiversity, and challenge students to develop an integrative understanding of relevant patterns and to articulate this in writing (essay form exams that I grade myself). The mammal diversity course has now grown to approximately 80 students (Fall 2016 enrollment). This course continues to receive excellent reviews from students. I also continue to offer a series of graduate seminars and courses on various topics in conservation biology and biogeography, including a new seminar in Biogeography of Humanity, which I hope to develop into an upper division and graduate course in the near future. This spring semester, I offered a seminar/semi-lecture course in Classic Readings in Biogeography, Ecology and Evolution which included an enrollment of 18 graduate students (including one audit) from ESF and SU. The course emphasized group learning and how each of the classic papers contributed to the development of these three disciplines. The biogeography course I teach (EFB 444/644) is now offered every year, in the fall, along with my course in mammal diversity (EFB 483).

Department/College: My service to the department and college should continue to develop following my return from sabbatical leave and should as deemed appropriate include increasing service on departmental and other committees.

Professional Development: I have developed my international network of colleagues and research programs in the areas of biogeography, ecology and macroecology. As a result, I have begun to publish with new collaborators, develop new proposal and received invitations to give guest lectures, keynote addresses and serve as external evaluator of faculty and research programs. I have begun new lines of research on Soundscape Ecology and on Palaeo-biogeography, which are emerging disciplines focusing on -- the spatial and temporal variation in the sounds of nature, and patterns in geographic variation of life before the impacts of human activities. We have published our first papers on these new lines of research.

Gregory G. McGee

Students: I served again this year as EFB’s Undergraduate Curriculum Director and Curriculum Coordinator for the Environmental Biology major. My ongoing responsibilities as UCD included coordination of undergraduate advising for the department; providing departmental orientation to freshmen and August/January transfer cohorts; pre-registration of all transfer students; representation EFB at two end-of-semester Academic Standards meetings; organization of two departmental open
houses and five accepted student receptions, and personal participation in five of these seven events; and maintenance of EFB program catalog descriptions, plan sheets and directed elective offerings for all seven majors. Apart from my own 28 undergrad advisees, I advised numerous other EFB undergraduate students on a variety of curricular matters, provided initial advising for several internal transfer students, and facilitated numerous student petitions. In addition to regular duties associated with this appointment, this year I was also involved in resolving numerous course schedule conflicts that emerged during the campus-wide schedule reset process, and worked with the Admissions office and several EFB colleagues to formalize articulation guidelines for Ranger School students transferring into the ENB, Conservation Biology, Wildlife Science and Forest Health majors. Also this year, I followed-up on the completion of the department’s 2015 Middle States Accreditation Undergraduate Program Assessment Report by preparing a database for departmental faculty to submit assessment data for EFB’s seven majors. I then worked with Allison Devlin to develop the database functions that automatically search the archived data and populate different spreadsheets with the data necessary to conduct assessment analyses for our seven majors. In the coming year I will assist in the preparation of the EFB Self Study in advance of the SUNY Program Evaluation. This past year I attempted to improve upon the orientation experience of our transfer students by offering two service-based weekend retreats to Huntington Forest. These retreats were organized with the logistical assistance of Laura Crandall (Student Affairs) and programming assistance of Stacy McNulty and Paul Hai at the AEC. We developed a program to build community through common living arrangements, service and recreation activities, and that also introduced students to college resources, and to research and work opportunities at the AEC. Further, Laura and I were able to enlist the participation of ESF’s student chapter of the Society of Conservation Biology, which organized a third retreat without our direct involvement. I believe these retreats were successful in providing new students the opportunity to meet one another and make friends, introducing early to opportunities at the AEC, and offering me opportunity to provide early academic guidance. It is my intent to continue developing these service retreats with Laura and more ESF student organizations. This past year I made a concerted effort to incorporate best practices in scientific teaching and active learning in my General Biology laboratory modules and to make more explicit linkages to these techniques with my graduate and undergraduate teaching assistants. I believe I made good progress in modifying my instructional approach in several laboratories, and in promoting understanding among the graduate teaching assistants in the value and benefit of these teaching methods.

Department/College: Two years ago (’13-14) Kelley Donaghy and I attempted to initiate a two-year course sequence in Environmental Leadership and Civic Engagement. Our intention was to begin developing a purposeful, structured academic track in leadership studies that integrates aspects of community service. In this first attempt we initiated a Sophomore-Junior year experience consisting of an introductory seminar on leadership theory and skills, followed by a practicum in which students designed high-impact, service-based professional or research projects that promoted community service by their fellow students. We carried about a dozen students through two semesters of the leadership training and project development during their sophomore year, but none of these students opted to implement their proposed service projects, due in large part to lack of resources. Using the approach we piloted in ’13-14, Kelley and I submitted an NSF S-STEM proposal to further develop this leadership track and populate the program with two four-year scholarship cohorts. We received very good reviews on our last submission and were encouraged to resubmit the proposal this past spring. In addition to the S-STEM funding, Kelley and I are moving forward with a proposal to establish a Community Engagement and Environmental Leadership Institute at ESF that will eventually sponsor an academic program (certificate or minor) in Environmental Leadership. In our background research, we have learned that leadership training at the university level is typically sponsored by business, education and political science/international studies programs - STEM programs rarely offer formal leadership training. Furthermore, there are only two leadership training programs in the environmental sciences in the US – one is offered only to mid-career professionals and the other is limited to graduate students. Therefore, Kelley and I recognize an opportunity for ESF to help fill the nationwide void in undergraduate leadership
training in STEM disciplines, and to occupy a very unique niche in leadership training in the environmental sciences.

Self: This year I continued to advance my research programs in undergraduate STEM education and forest ecosystem management. Neal Abrams, Betsy Hogan and I began to extend research findings from our NSF-TUES research initiative that integrated our introductory chemistry, biology and communications courses (Project SYNAPSE). During the year, we presented our findings through four presentations and workshops at the American Chemical Society Northeast Regional Meeting, Association of Biology Laboratory Educators Annual Conference, and the SUNY STEM Conference. Neal and I will soon be submitting for peer review several teaching modules for integrated laboratory activities, and along with Betsy we will submit a manuscript describing the outcomes of our overall integrated teaching experience. In collaboration with Stacy McNulty, Ralph Nyland, Bob Davis and Bruce Breitmeyer, I initiated a study at the AEC to investigate the effectiveness of using mechanical means to control beech sprouting during commercial harvests in even- and uneven-aged stands, and have recruited an MS student (Colin Mettey) to conduct the initial post-harvest assessments. I worked with Central/Western NY Chapter of The Nature Conservancy to submit a successful pre-proposal to the Wildlife Conservation Society Climate Adaptation Fund to conduct restoration forestry on TNC’s Tug Hill properties (full proposal due in July). Geoff Griffiths continues his dissertation research on interactions between pollinator and forest herbaceous communities in post-agricultural secondary forests, and Geoff and I have been successful in integrating three undergraduate students into this research project. During the year I continued to work with past graduate students to submit four manuscripts for peer review (two are in revision), with three more to be submitted soon. I have also engaged two other undergraduate students in publication-quality research projects related to long-term effectiveness of herbicide treatment for beech control and bryophyte–bark chemistry relationships, and will move these efforts forward to publication this summer and fall.

Stacy A. McNulty

Students: This year I modified a major lab/field portion of Mammalian Winter Ecology to accommodate the lack of snow and challenging weather. I developed a new module involving observational skills/hypothesis testing focused on mammal energetics, behavior, and activity budgets. The students worked through the entire development process together, from crafting initial research questions to designing the study methods, determining site selection and logistics and carrying out data collection and evaluation (including potential improvements for future labs). Students again rated the course very highly, with an average response of 9 on a 10-point scale.

Department/College: Over the past year I solicited and edited manuscripts for and assisted with managing publication of a special volume of Adirondack Journal of Environmental Studies. AJES Vol. 20 (2016) contains over a dozen peer-reviewed articles about ornithological topics; the issue collates current research on loons, songbirds and mercury, conservation status of rare montane and lowland boreal species, and related subjects, including Teddy Roosevelt’s 1877 checklist of birds compiled when he roamed the Adirondack region as a young conservationist (a connection to the Roosevelt Wild Life Station). The special issue of AJES has brought visibility to ESF and the college has received positive feedback from other academic institutions, non-profit organizations and agencies, and bird enthusiasts.

Self: I’ve been taking classes as part of the Graduate Program in Environmental Science and developing a doctoral dissertation proposal. Over the last twelve months, many diverse conversations with peers and colleagues have been rewarding and I am finding ways to integrate new material and ideas into my academic and outreach programs. The opportunity to spend more time physically on main campus connecting with students and faculty on research, teaching and institutional planning initiatives has been highly productive as well.
Lee A. Newman

Students: I have continued to teach the three required courses, Cell Biology, Senior Synthesis and Molecular Techniques. I taught the Phytoremediation course (EFB496/796) as a three credit course this year, and it was well received by the students who liked the expanded format. I will discuss this more in the service to the Department and College. I taught the EFB496/796 Cell Biology Recitation again this year. The students again said that they greatly enjoyed the course and they learned valuable skills in both reading and understanding research articles, as well as presentation skills. I also taught the EFB496/796 Plant Physiology Recitation this year. I plan to continue to teach this course, but have it focus on different areas of plant physiology every year so that students can take the course more than once and continue to learn new material with each time the course runs. Last year, the course focused on plant stress responses. I also continue to co-teach Biodiversity II, with the topic area of Prokaryotes. It is a fun lecture series, and the students seem to enjoy it and ask a lot of good questions. This year I have had 36 undergraduate students in the lab, 7 PhD, 4 MS students, two post-docs and one visiting scientist. The two post-docs were from Iran and Thailand, the visiting scientist from China. In addition, there are/were other international students in the lab, one from China and one from Nigeria. The lab also hosts students from a variety of ethnic backgrounds, including Trinidad, Philippines, and China. The lab hosts not only a diversity of nationalities, but also religious and political backgrounds. Several students are or were in the Honors program, and several others are in CSTEP. The best thing about this is how proud the students themselves are of being in this diverse group. The students are extremely hard working, and this is reflected in the number of awards they have won locally and at internationally attended conferences. I continue to work with the students to develop their sense of community by hosting laboratory trips to places that are both fun and educational (Corning Museum of Glass and the Rosamond Gifford Zoo). I also work with the students to develop the importance of community service by participating in a food drive – last year the lab purchased and delivered over $1800 of food to a local food pantry and over $400 to support a local pet food pantry.

Department/College/SUNY: I am continuing my work on the departmental Course and Curriculum Assessment Committee and the Tenure and Promotion Committee, and the college Committee on Research. I also continue to participate in three Hill Collaboration groups, Neuroscience, Cancer, and Wounded Warrior. As part of this last group, we are working for the third year with a former ESF graduate, Dr. Stephen Lebduska, who currently serves as the head of the Spinal Cord Injury Unit at the Syracuse Veterans Hospital on a Horticultural Therapy program for inpatients in the unit. We are working not only with the hospital, but also with other community groups to obtain the plants and supplies for the program, and we currently have a PhD student who is doing this work for his dissertation project, two graduate students and eleven undergraduate students working at the VA on this program. The program involves growing plants on a rooftop garden, in room plants for patients, maintaining plants in common areas, and devising enrichment programs involving gardens and plants for the patients during the winter months. We are also working with Clear Path for Vets to develop a kitchen garden for their Culinary Command program. I have had 5 students from Landscape Architecture and Environmental Science working with me to design the kitchen garden, and also a natural playground. I was a member of the departmental search committee for the new faculty hire in Environmental Health/Epidemiology, and a Chemistry department search committee for the new faculty hire in Environmental Health/Environmental Chemistry. For the fifth year, I was chair of the organizing committee for the Biotechnology Research Symposium, which continues to attract both academic and industry representatives. During the past year in the EFB496/796 Phytoremediation course, I had two speakers give seminars that were open to the college and the public, Dr. Marinus Otte, Professor in Biological Sciences, and former Chair, at North Dakota State University and Dr. Gary Banuelos, a world renowned research with the USDA in Fresno, CA. I am still working with the administration at Brookhaven National Laboratory and the Research Foundation to forward the major goals of the MOU, which was to increase research collaborations between SUNY and BNL. I have also been working with faculty and staff at ESF to develop a series of course, to be taught at BNL, which would benefit high school teachers and allow them to earn ESF credits. I have been working with Dr. Shannon to develop a joint diploma program with Mahidol
University in Bangkok, Thailand for the Environmental Biology, Biotechnology, Bioprocess Engineering and Environmental Health majors. This program would allow students from Mahidol University to do their last two academic years here at ESF, and then receive diplomas from both ESF and MU. As the program develops, ESF students would also be able to go to MU for a semester or academic year to participate in an international learning program. In this vein, I am still working with the SUNY COIL program to develop a jointly-taught course with the University of Parma, where students at both universities would take a phytoremediation course, and run joint literature review projects between the two universities. I continue my involvement in the ESF health related programs. I have continued working with both ESF and UMU administration to develop and implement a joint MD/PhD program, and this is moving forward. I am the Pre Health Advisor for students in the Environmental Biology Major. I am also the ESF advisor for students wishing to participate in the UMU 3+3 program to earn a Doctor of Physical Therapy degree. I am also the Coordinator for the Health and the Environment option in Environmental Science, and the Coordinator for Environmental Health, where I am not only doing curriculum coordination, but also updating the web site and promotional materials for students, administrators and fund raising, and worked with Dr. Luzadis on developing descriptions for new faculty hires for the program as well as recruiting new ESF faculty to participate in the program. I am the advisor for two new minors, Environmental Health and Food Studies. This past year I was a member of two search committees for a new hires in Environmental Biology and Chemistry, to teach in the Environmental Health program (Epidemiology and Environmental Chemistry). I also reorganized the plan sheet for the major, and course descriptions for four undergraduate courses. I also oversaw the set up of $650,000 of equipment for the Environmental Health/Environmental Medicine Biotechnology center, and currently supervise the management of the laboratory for use by ESF, Upstate Medical University and the Biotechnology Accelerator personnel.

Self: I continue as Co-Editor in Chief for the International Phytoremediation Journal, which has continued to increase the number of submissions received every year. The publishers continue to increase the number of issues, and from a quarterly journal we are now publish 12 issues a year, in the 8.5 x 11 page format. For the fourth year in a row, our annual and 5-year impact factor continues increase and be strong for a highly specialized journal, being in the upper 50% for all Environmental journals. I continued to serve as the Founding President of the International Phytotechnology Society after serving 6 years as President. The Society continues to grow and the conferences remain strong every year. I was on the organizing committee for last year’s conference, which was held in Manhattan, Kansas, in October 2015. I continue to chair both the Awards Committee and the Education Committees for the Society. I also continued my role on the Scientific Advisory Board member for the Association for Environmental Health Sciences. I am also working to developing more collaborative ties within the SUNY system, and I am starting to work with colleagues from SUNY Upstate and SUNY University of Albany to develop joint research programs. Last year, I submitted a grant as PI with collaborators from SUNY Upstate. We are still waiting results. While my publications remain excellent in quality and are published in top journals in my field, I look forward to increasing the number as more graduate students move through the lab. And finally, I continue to work with an international team of editors to work on the books Phytoremediation: Management of Environmental Contaminants; we are working on Volumes III and IV. And finally, in the past year I received the President’s Award for Community Service, for the work we are doing in the lab both with the veteran community and for getting students involved in assisting the local food banks and animal care.

**Dylan Parry**

Students: Undergraduate. I continued as the coordinator of the undergraduate major in Conservation Biology (~ 165 students) until January 2016 when my three year term was up. I teach demanding rigorous classes and refuse to use multiple-choice despite the significant time spent grading written answers. In spring 2016, I again taught EFB-502, continuing to add new components to this course to keep it fresh and current in this rapidly developing field and I turned over more than 20% of the lecture material this year. Although the FTE’s are low, these are the kinds of courses that set ESF apart
from competing institutions and give students value for their dollar and are one of our best marketing tools for getting students to come here. As I have done for 11 yrs, I taught the Entomology component of EFB-202 at Cranberry Lake. I am one of only a handful of EFB faculty that consistently instruct in our flagship undergraduate experience.

Graduate. I taught one graduate seminar in 2015-2016 (10 students). I also served on GPAC and oversaw the Stegeman Award, again providing a well-deserving student with an award and some supplemental funds for research. My MS student Wendy Leuenberger received a Sussmann Foundation Award and got the additional $2000 top up for exceptional merit.

Department and College: As Coordinator, In addition to the myriads of petitions and assessment requirements, I promoted the College and the Conservation Biology Major at accepted student recognition events and open houses, fielded questions from prospective students and parents, and wrote letters to top potential recruits. I represent the College’s interests and perspective as a member on the NY State Invasive Species Advisory Committee, an assemblage of governmental, non-profit, private sector, and academic organizations who function to advise NY State on invasive species issues and help to craft legislation that effectively combats targeted species or pathways. We were able to play a large role in developing and changing the forth-coming ‘clean-boat’ bill that the governor signed into law, the inaugural state wide Invasive Species Awareness Week, and the forthcoming ‘Three-Tier List’ of prohibited and restricted species. In January 2016 I assumed the role of Director of the Graduate Program in Environmental Science, a significant leadership responsibility.

Self: I am collaborating with multiple investigators (particularly Derek Johnson and Kristine Grayson at VCU and Patrick Tobin with the University of Washington) looking at the effects of climatic shifts on invasive insects. I have recently partnered with Kimberly Wallin (UVM) and initiated research at Hubbard Brook Experimental Forest. We are cooperators on a large NSF funded project with Lindsey Rustad and John Campbell (US Forest Service) to emulate ice storms in northern hardwood forests. By mechanically applying water to the forest canopy in winter, we have been able to realistically mimic the accretion of ice and subsequent damage. Our role is to examine the trophic response of insects and their natural enemies. My graduate program has grown with 2 new PhD’s joining the lab in fall 2015. Organized a major symposia for the world’s largest international entomological meeting (see above).

Gordon Paterson

During the fall of 2015 I again taught Toxic Health Hazards and received strong positive feedback from multiple students regarding the course content. I have made a concerted effort to keep this course material up to date with relevant topics and environmental issues and feel that it has now matured into a relatively smooth running course but will continue to actively update the course content, readings materials and evaluation. I also offered the Environmental Risk Assessment course requirement for the Environmental Health program during the fall 2015 semester. This year there was sufficient enrollment to proceed with the course and it received also generally positive feedback. I anticipate continuing to grow this course and its content as I offer in the coming semester. I again co-taught the Adaptive Peaks graduate seminar course with Dr. Shannon Farrell during the fall 2015 and spring 2016 semesters. Dr. Farrell and I have reworked to course syllabus to include graduate student seminar participation during the interim weeks between guest speakers. The graduate students have seemed to value the opportunity to gain public speaking experience in a more informal setting and in preparation for thesis committee meetings and capstone seminars. I am again co-teaching Tropical Ecology with Dr. Donald Stewart during the spring 2016 semester and this year the field component was able to proceed during the Spring Break period as scheduled. I also am currently contributing to the Hydrology and Biogeochemistry seminar course offered through EFB/ERE and FCH and am coordinating with Dr. Greg Boyer. I was I was also able to supervise a range of undergraduate students through research internships and independent research projects. One of these students completed an evaluation of a dataset on pollutants in the lower trophic levels of the Lake Erie foodweb which was of exemplary quality and insight and was suitable to amend into a short publication note and has been submitted for peer review. These projects were very enjoyable and valuable for helping teach students the lab and data analysis skills associated with pollutant
extraction and analysis in biological samples and also for evaluating the status of laboratory facilities for this research.

Laboratory maintenance continues to be a challenging issue with respect to completing trace chemical analysis in Illick Hall lab space and the continued cleaning and regular maintenance required in order to maintain a suitable facility for trace chemical research. This is in addition to difficult working conditions with respect to laboratory temperatures, volatile solvents and completing bench chemistry work in the lab during the summer and fall months. I now have two MS students working on thesis projects focused on the Finger Lakes and Lake Ontario. However, recruiting graduate students to EFB for a toxicology based research program proves challenging in competition with other institutions and have lost potential students to other larger academic programs. I am currently PI or Co-PI on approximately $365,000 in research funding proposals this year and am awaiting response on these applications.

I continue to serve on the Cranberry Lake Biological Station (CLBS) Advisory Committee and also began to serve on the Graduate Program Advisory Council (GPAC) in the fall 2015 semester. For CLBS, the committee came to a consensus to offer an additional session in the summer 2016 semester in order to remedy the student backlog for EFB202. My primary participation in GPAC has included the initiation of an evaluation of the EFB graduate program with respect to graduate student success through the program. The first priority has been discussion of the appropriate metrics with which to evaluate student and program success. Participation on this committee also included application review and candidate selection for the Grober Research Fellowship. I also continue to interact with numerous undergraduate students interested in environmental toxicology and issues related to water contamination, industrial pollutants and their potential effects on human and environmental health.

For my own professional development, I was invited to present a research funding proposal to the Great Lakes Fishery Commission’s Board of Technical Experts and learned greatly from the experience. This past year proved to be highly challenging towards time management and being able to consistently fit in quality grant proposal writing time and need to reduce the number of teaching commitments in order to focus on my research program and graduate student training. I now contribute in a reduced capacity as an associate editor for the Bulletin of Environmental Contamination and Toxicology, in this revised role, I have been responsible for the editorial processing of approximately half of the number of bulletin publication style manuscripts (15) that I had handled in previous years. I have also acted as a professional reference for multiple undergraduate and graduate students applying for REU internships and full time professional positions, respectively.

William A. Powell

Students: In addition to my Genetics class, which I received very good reviews, I provide many opportunities for our students to have a “real life” research experience. This could only be done with the success of the American chestnut project that provides funding and research opportunities at many skill levels. We have had high school, undergraduate, graduate students, post-doc, and visiting scientists work on the project this year, giving them valuable experience for their future careers in addition to their satisfaction that they played an important part of the return of the American chestnut. I also started my first attempt at a course to teach our students how to present research to the general public. This is a skill that is lacking in most researchers today and I believe it contributes to the public’s distrust of science. The course didn’t get off the ground this semester because I didn’t take into account that the graduate students needed a course that would fulfill their seminar requirement. I will correct this next year and hopefully pass on some of my 26 years of experience talking with the public about difficult science topics.

Department/College: Again, the biggest contribution to our department and college is the success of the American chestnut project. This brings positive publicity to our college through my 19 public and professional presentations with about an equal number given by my students. This has led to 38 “news” articles, up from 31 last year. Some are in very widely read publications such as The New Yorker, National Geographic, New York Times, Wall Street Journal, and Smithsonian. I was one of the first three ESF faculty to write an article for The Conversation which have gone over 20 thousand reads. My hope is
that this outreach will help ESF to establish itself as a tree restoration center, and support spin-off projects such as the rescue of the Ozark Chinquapin and developing a blight resistant European chestnut in the near future, and working with other trees as the time goes on. Once we have regulatory approval, I hope ESF can establish the first demonstration of a Chestnut/Oak restoration forest planted on marginal lands and containing all the species associated with the American chestnut. Our students can follow this forest over the next century, continuously providing research opportunities as it matures.

Professionally: Nobody on our campus understands the regulatory process for genetically engineered plants, so I have had to take on the task to self-educate myself. I am doing this with my Ph.D. student by meeting with the three regulatory agencies in person and by phone conferences. We are also visiting companies with experience with the review process to gain insights that the regulators might not offer. Lastly, we have sought out “pro-bono” regulatory consultants to help. Interestingly, there are many views about the best way to approach this process. We hope to start the review soon as we have collected all the needed data. This is not only an administrative process, but also involves public relations, which you can see from our outreach efforts have taken much of my time. I believe we will be successful and will probably help change the public’s opinion about genetic engineering and how it can be used to benefit the environment. But it will not be easy and there will likely be challenges to overcome as we go forward. But we are ready.

Neil H. Ringler

EFB: The EFB curriculum provided the launch pad for four of our students in the Comparative Vertebrate Anatomy course to enter Veterinary programs in Massachusetts, Arizona, London, and Iowa in Fall 2016. The aquatic/fisheries graduate program is going well, with four M.S. students graduating this year, including solid employment with USGS, Vermont Fish and Wildlife, Parsons, Inc. and U.S. EPA. These students were supported on research assistantships funded by NY Sea Grant and Honeywell. The new CIRTAS lab proved essential in the success of Atlantic Salmon studies; continued work with Atlantic Salmon is anticipated with renewed connections with the Carpenter’s Brook Fish Hatchery, where our young fish from Vermont are currently being held prior to stocking in Onondaga Lake tributaries. Our team published three papers and made five presentations this year. Two new graduate students have been recruited for the upcoming field season for a graduate team of seven.

ESF: In addition to activities in the Office of Research Programs, work on behalf of ESF has included development of the Hill Collaboration in Environmental Medicine, which now has provided $240,000 in seed grant opportunity since 2012. We elected Dr. Don Simpson, Dean of College of Health Science Professions at UMU, as Director of the Institute for Environmental Health and Environmental Medicine (IEHEM). A session at the Biotechnology Symposium May 19th provided a forum to present results from the Hill Collaboration and seek (via panel discussion) new collaborations from our Hill Partners (SU, UMU, VA, ESF) coupled with a stronger interface with IEHEM. The Bio-refinery in the Center of Excellence is now virtually completed, including a 1000 l fermenter and 40’ high distillation column. This provides excellent prospects for faculty from Chemistry, PBE and other departments in research and instruction.

SUNY/RF: The SUNY/RF $1.9 M Networks of Excellence Program is being reduced for the coming years, but several ESF faculty continue to complete projects initiated in the 4E component of that program. Service on the SUNY Senate Research and Graduation Committee was initiated this year, with some headway toward a graduate guide book and new graduate scholarships. Service on the RF Graduate Research Council continued as part of the Vice Presidents/Provosts meetings in NYC. A goal for the coming year is to restructure the Research Council to better serve the research enterprise. Our new RF President, Dr. Jeffrey Cheek (replacing Dr. Tim Killeen, now President of U. Illinois), will begin in early June 2016.

Rebecca J. Rundell

Students: My Invertebrate Zoology (EFB 355) course has grown stronger and more popular with students, and we added to our slimy roster of fresh dissections this year with blue crabs from the Asia
Food Market. I emphasize hands-on activities with live animals (e.g. feeding and observing behaviors of sea urchins, sea stars and anemones), dead specimens from our heavily used Invertebrates Teaching Collection (also used in Adams’ Diversity of Life and Schulz’s Marine Ecology), and small group “inverted classroom” demonstration projects. This year our class was also treated to an exclusive behind the scenes tour at the Paleontological Research Institution and its Museum of the Earth in Ithaca, NY followed by a competitive invertebrate-themed scavenger hunt throughout the exhibits. The winner received a stuffed sea scorpion, New York State’s fossil. The Museum also donated several sea scorpion fossils to our Invertebrate Teaching Collections. We have begun to reorganize and modernize these teaching collections by incrementally adding sorely-needed cabinets through academic replacement funds and a team effort involving invertebrate graduate TAs, undergraduate TAs and myself. We are also beginning to evaluate slides and specimens needing repair and replacement. Some of these specimens are rare or difficult to acquire because of their conservation status, and their heavy use in our teaching programs makes their care and growth all the more important. David Bullis and four undergraduate TAs did an outstanding job with managing our very dynamic lab this year and it has been deeply gratifying to see Bullis’s extraordinary growth as a teacher and invertebrate expert, from a few years ago when he served as an undergraduate TA in this course. We were also fortunate to have guest lectures in inverts this year from world renowned annelid evolution specialist Dr. Damhnait McHugh (Colgate University) and our own EFB ant specialist, Ph.D. student Jesse Czekanski-Moir.

Principles of Evolution (EFB 311) was a big effort that brought our students in close contact with recent evolutionary biology research (e.g. student-generated Darwin-Wallace Day Poster event at Moon Library, the only International Darwin Day event of its kind in Syracuse) and real fossils (field trips (in the snow!) to two local fossil outcrops and special programs at the Museum of the Earth with paleontologist Dr. Rob Ross). We were also fortunate to be one of the few colleges in the country to host a one-on-one Skype chat with Dr. Jerry Coyne, New York Times best-selling author of Why Evolution is True. Students read his book during the semester and on the last day of class had the opportunity to ask Dr. Coyne questions about topics ranging from racism to species concepts. Our TA for the course, Ph.D. student Jesse Czekanski-Moir, also exhibited his talent and passion as a teacher, giving a guest lecture to 142 students and leading lengthy and well-received review sessions. With Ph.D. student David Bullis we also continued the Evolution Discussion Group, which has been well-attended by graduate students, undergraduates, post docs and faculty from ESF and SU. Our group also hosted an intimate conversation with visiting extinct marine reptile evolution and morphology expert Dr. Ryosuke Motani.

Our lab added a new Ph.D. student and an undergraduate and graduated an M.P.S. student. We now have three Ph.D. students, an M.S. student, and a few dedicated undergraduate researchers. Students are working on topics ranging from endangered land snail phylogenetics, to paleopolyploidy, body size evolution, and captive breeding of rare species. We finally have a critical mass of students that are collaborating with one another and generating fresh ideas centered around invertebrate evolution and conservation. Ph.D. students in the lab have been awarded competitive research grants from the Conchologists of America (Rose Osborne) and the MCZ at Harvard (David Bullis) and have applied to many more. Ph.D. student Jesse Czekanski-Moir also completed the MBL Woods Hole Molecular Evolution Workshop and trained in bioinformatics and genomics as a scientific visitor in the Barker Lab in the Dept. of Ecology and Evolutionary Biology at the University of Arizona in Tucson. Czekanski-Moir also delivered an outstanding seminar at UA on mollusc genome evolution that was attended by many of the top people in our field.

Department/College: My main service to the department and college has been as Head Curator of the Roosevelt Wild Life Collections, where I have had the opportunity to collaborate with RWLS leaders Drs. James Gibbs and Jacqui Frair, collections manager Ron Giegerich and our many scientists in residence, as well as members of the RWLS Honorary Advisory Council. I have also had the opportunity to assist Dr. Alex Weir in the Herbarium as the remounting of specimens damaged in the flood has commenced. RWLS work has been largely focused on planning the new museum space in Gateway, including working with architects and visiting the American Museum of Natural History to help develop exhibit plans. I have spent a large amount of time working on potential collaborations with Destiny USA.
and prospective donors on exhibits that would raise the profile of the College, our department, and RWLS. I have also submitted large grants to NSF and IMLS to fund modern cabinetry and curation work that would help secure and make accessible our invaluable natural history collections. If funded these would be one piece of a much broader effort to ensure the growth and use of both research and teaching collections at ESF for decades to come. I have also been involved in advocacy for university collections like ours through my role as a Representative-at-Large on the Board of Directors of the Natural Science Collections Alliance.

Research in our lab has also contributed positively to EFB (and the College’s) already strong role in endangered species conservation. My GLRI grant on the Chittenango ovate amber snail (COAS) has helped to fund M.S. student Cody Gilbertson, who had a major scientific breakthrough in captive breeding of healthy snails this year, culminating in the first release of captive-reared individuals of this rare species. We were fortunate to receive some nice press for this work from outlets like Scientific American and WNYC’s Hypothesis. The work is an ongoing collaboration involving USFWS officer Robyn Niver, collaborators from the Seneca Park and Rosamond Gifford Zoo, NY State Parks, and many others. Gilbertson led an in-depth workshop on the COAS project earlier this semester, which brought all of these stakeholders to our campus to discuss the conservation outlook for the species.

Self: This year I was an invited panelist and speaker for the “The Tree of Life: State of the Art” discussion at Ithaca’s Darwin Days 2016, sponsored by the Paleontological Research Institution and Cornell University. I also was asked by the lead author to be the proofreader and reviewer for the third edition of Brusca et al.’s Invertebrates (Sinauer Associates). This edition represented a major overhaul of content and required a careful eye on both research and teaching contexts for use of the book. At >1000 pages, this was a major undertaking. But it was gratifying to see how this work impacted the volume and how I could involve my students as test cases for the text and figures, and bring my research knowledge to bear on diverse aspects of the writing. Being asked to review in this capacity was also professional honor, since the first edition was so seminal in my own early education in invertebrate zoology. Some of the other highlights for this year include being asked to serve as Associate Editor for the top malacology journal, Malacologia, as well as presenting an invited symposium talk at the American Malacological Society Annual Meeting at the University of Michigan Biological Station, which I attended with one of my Ph.D. students, David Bullis, who also presented. My main research visit this year involved working at the University of Arizona with the Barker Lab and colleagues, as we ask some exciting new questions about the role of whole genome duplications in animal evolution. My work on the diversification and conservation of the land snails of Belau continues especially through collaborations with members of my lab.

Kimberly L. Schulz

Students: This year was a heavy teaching load year with both Limnology (grad and undergraduate) and the 2 credit Limnology Practicum (very lab and field intensive, including independent student projects), taught in the fall as well as a relatively large Marine Ecology Class (90 students) and marine seminar taught in the spring. I implemented some significant changes in the courses:

- In Limnology Lecture, I began using more online (Blackboard) videos and auto-tutorial exercises to supplement class material or lead in to class discussions, and this was generally well-received. I also offered a short field trip to Onondaga Lake for the Limnology class and used Onondaga Lake as a case study lake throughout the class.
- Limnology Practicum again did service learning independent projects, some with COFOKLA, a local lake association, and the students presented posters to the public and some DEC representatives after the semester ended. Although this is a very labor-intensive class, it is often referred to as one of the main beneficial classes by graduating AFS seniors, and several students presented their posters at professional meetings (e.g., NY AFS)
- In Marine Ecology I totally revamped the recitations, and continued to run a large field trip to Cape Cod. This year the field trip included more presentations and demonstrations by ESF alums and additional professional discussions, which were well-received. Of course the whales are the
hit! Also we launched a film contest from footage we all shot and shared from the EFB GoPros, and were impressed with the winning student film, which might be useful to EFB or ESF in promotional events.

- I had one MPS student graduate in the fall, and have 3 additional graduate students (2 MS and 1 PhD) actively writing their dissertations, who will defend early in the next academic year. I have been working with these students and past students to submit their manuscripts for publication.

Department/College: I served the Department and College in several ways over the past term, which are outlined above. Most important, in my opinion, are:

- I helped shepherd CIRTAS facilities and externally-funded research there through the extremely disruptive long power outage in summer 2015, and worked to investigate and fix connectivity, water, electrical and other remaining issues over the past year.
- I continue to work with Greg McGee on assessment and to serve as the EFB Course and Curriculum Assessment Committee Chair
- I co-ordinate the Marine Science Minor and help to maintain an institutional arrangement with the Sea Educational Association, which has trained an increasing number of ESF students. I am also the EFB representative to the Water Resources Minor.

Self

Self: This year was a successful year for publication and grantsmanship as I began to submit grants again with the re-opening of my lab. We published six manuscripts, had one additional manuscript accepted, and one is in review. In addition I was part of teams that submitted three research grants, all of which were funded, and we successfully completed work on the research grant that was awarded last year, with a manuscript in preparation for fall submission. In addition, I decided to begin evaluation for promotion to full professor. I greatly enjoyed the opportunity to attend and present at the International Conference on Biological Stoichiometry as well as at the Finger Lakes conference. These meetings have resulted in some collaborations and ideas for future manuscripts and proposals that I am currently pursuing.

Donald J. Stewart

(no annual report submitted)

Stephen A. Teale

Members of my lab have been very productive this year. Laura Hansen and Tian Xu led a paper in PLoS One on the identification of a pheromone of the citrus longhorned beetle, a potential invasive from China that is significantly more threatening than the Asian longhorned beetle. The pheromone can be used as the cornerstone of an early detection system in the U.S. Dong Cha and Alejandro Mieles have developed a synthetic lure for *Philornis downsi*, a parasite of Darwin’s finches in the Galapagos. In collaboration with Austrian and Ecuadorian colleagues, Dong, Alejandro and Liz Semler have co-authored a paper on self-medication with the endemic plant, *Psidium galapageum*, by Darwin’s finches that repels parasites. Hajar Faal was the recipient of both the Silverborg Memorial Scholarship and an OIGS travel Grant. Dong, who has been a post doc with us since April, 2015 was offered a permanent position as Research Scientist with the USDA-ARS and will be moving to that position in the near future.

J. Scott Turner

1 EFB 200 Physics of Life was offered for the seventh time. Its enrollment continues to be strong. Last July, I offered an online version of the course during Summer Session 2. Enrollment was modest.
2 EFB 462 Animal Physiology continued to be offered as a fully online course, in Fall and in Summer Session 1. Enrollment continues to be strong, but participation in the supplemental recitation again did not draw enough students to make it viable. Production for Animal Physiology Online continues. I am also offering the course on udemy.com
Work continued on my research project funded by the Human Frontiers Science Program (HFSP), for which I am the Principal Investigator. We conducted a major research expedition to Namibia in March 2016. We are currently in Year 4 of the project, under a no-cost extension from HFSP.

I am a subcontracting scientist on a grant from the National Institutes of Health awarded to Drs Justin Werfel and Radhika Nagpal of Harvard University. This proposal will bring in more than $450k over the next five years. The project explores the behavioral interactions between termites and soils, with the goal of being able to program semi-autonomous robot swarms to do construction.

I am a subcontracting scientist on a grant from the National Science Foundation awarded to Dr Andrea Surovek of the South Dakota School of Mines. The project is concerned with mechanical engineering of termite inspired structures. My role is to serve as a scientific advisor and to aid in the development of international research experiences for undergraduates. We undertook our first field expedition in March 2016.

I undertook a new joint course with Dr Margaret Bryant (LSA) titled Design With/In Nature. The purpose of the class was to explore the phenomenon of design from the perspectives of a biologist and an architect. Enrollment was 22, mostly drawn from LSA students.

I launched a new hybrid online/field course, Biophysical Field Methods, in collaboration with Prof Berry Pinshow (Ben-Gurion University of the Negev), Dr Eugene Marais (National Museum of Namibia) and Dr Gillian Maggs-Kölling (Gobabeb Desert Research and Training Centre, Namibia). The course has an online component, which culminates in a capstone field research experience at the Gobabeb Desert Research and Training Centre in Namibia. The course consisted of students from ESF, Ben-Gurion University, the National University of Science and Technology (Namibia), University of the Northwest (South Africa), and the Ministry of Environment and Tourism (Namibia).

I was an invited participant in the VilleFranche conference on The Singularity, in Nice, sponsored by Peter Thiel (PayPal) and David Berlinski. This was an exclusive group of thought leaders.

I continued to serve as chair of the standing Committee on Technology. This last year, we offered six Brown-Bag Workshops for ESF faculty and staff.

As part of my chairmanship of the Technology Committee, I serve as a member of the Executive Committee of Faculty Governance.

I was chair of the Presidential Advisory Group on Building a Culture of Media at ESF. Our report was delivered to the President in April 2016.

Alexander Weir

Students: This past year I taught Fungal Diversity and Ecology (16 students) at the Cranberry Lake Biological Station and also contributed to one of two sessions of EFB-202 at the Station. In the fall semester I taught my regular Mycology class (48 students) and also contributed significantly to EFB-210 Diversity of Life I with 6 lectures. During the spring semester I offered an additional two classes, EFB-496 Biology of Lichens (23 students), and EFB-500 International Field Trip – Natural History and Nature Conservation in Ireland (8 students). The Biology of Lichens class built on a similar offering (Topics in Lichen Biology) offered a few years ago and this time included both weekly lecture and lab. The class attracted a significant enrollment (as pointed out by visiting instructors in lichenology from Cornell University) and was very well received by students.

Department COLLEGE: I have continued to assist with the current transition at the Cranberry Lake Biological Station serving on the Cranberry Lake Advisory Committee and attending programming meetings with physical plant. I have also, this year, taken a lead role in overseeing digitization of our important mycological collections. This work has been funded by NSF and has involved 6 undergraduate, and one graduate student. We have digitized almost 11,000 items and these are available for viewing in the MycoPortal. I have also continued in my role as curator of the Plant and Fungal Herbaria at ESF and have facilitated both loans, and scientific visits to the collections. I also worked with Rebecca Rundell and
two graduate students to oversee the remounting of damaged vascular plant specimens following the recent Illick Hall flood.

Self: This past year has been a milestone event as I submitted materials documenting my activities here at ESF since my original hire in 1999, and was successfully promoted to Professor (effective 9/16). During the year, Lauren Goldmann successfully defended her PhD thesis (6/15), Tiffany Deater (PhD) won the prestigious Grober Award, and I accepted a new PhD student, Patricia Kaishian, who was also the recipient of a major award from the Lowe-Wilcox fund. I also submitted a grant proposal to the Great Lakes Research Initiative with grad student Matt DaRin (and Russ Briggs) to develop a mycofiltration project around Otisco Lake. Unfortunately, this proposal did not receive funding this time around. I also attended an NSF-funded training workshop on digitization of biological collections and have coordinated a huge effort involving 6 undergraduates and one graduate student to digitize our microfungal collections in the ESF Mycological Herbarium.

Christopher M. Whipps

Students: In my EFB103 General Biology class (of 172 students), I introduced two new teaching methods to increase engagement; 1) case studies, and 2) classroom response system. Cases are set up as narratives, where we learn about the story while delving more deeply into certain topics. They may be a mystery to solve or have a twist at the end. Students worked in groups and there was discussion around certain questions. Based on teaching reviews, these were well received. In conjunction with cases, I used a classroom response system (clickers) daily, and this was also well received. It allowed me to gauge student understanding on the spot, which can otherwise be difficult in a large class. For EFB453/653 Parasitology, I have always used brief case studies, requiring diagnoses of parasitic infections from the CDC, but I’ve also started using and developing my own narrative cases for this class. I taught a Fall seminar class EFB797 Population Genetics, and diverged from the journal club style format I often use for seminars. Instead, I incorporated lectures and assignments in the first part of the course, interspersed with discussions on papers. Then, I asked the students to present on a topic and develop their own in-depth assignments that would walk a student through an analysis in detail. Having to work through a paper in this detail added depth to the student’s engagement and learning.

For 5 months this past year, I welcomed a graduate student from Brazil, Leticia Vidal, to work in my laboratory. This was a mutually good experience. She was trained on molecular biology work which will contribute to her thesis, and from this will stem several manuscripts. In November, my Master’s student Katrina Alger successfully defended her thesis and is currently applying her newly developed skills in a very fitting position at the National Wildlife Health Center. Katrina already published a paper from her thesis, and has 2 more in the works. Another student, Kelly Huffman, completed her MPS. My PhD student Carolyn Chang published 3 papers, and was the recipient of the best student presentation award at the 2015 AFS Fish Health Meeting. In addition to graduate student mentoring, I had several undergraduate researchers (Ashley Adler, Kristen Doerr, Ilana Weinstein) and an honors student (Julia Williamson) working on projects. I advise >20 undergraduate students, many of which are pre-health, and from several majors (Biotech, Environmental Biology, Conservation Biology, Wildlife Biology). I help organize internships, research courses, and apprenticeships.

Department/College: For EFB I serve on the departmental curriculum committee, where we contributed heavily to the departmental assessment of majors. I chaired the Disease Ecology/Epidemiology search this Spring. Chairing the search was and extremely demanding but rewarding experience, leading to the successful hire of Brian Leydet. At the college level, I chair the Institutional Animal Care and Use Committee (IACUC) which is currently overseeing 34 protocols on various vertebrate species (snakes, frogs, salamanders, birds, fish, moose, etc.). The work requires a great amount of attention, with regular monitoring of existing work in addition to processing new protocols as they come in. This year, ESF is also seeking Animal Assurance overseen by the Office of Laboratory Animal Welfare. This was necessary due to a new policy that requires NSF and NIH work involving vertebrate animals to have this Assurance, as well as existing work at ESF requiring it. I have written detailed protocols for ESF’s animal program, and the Assurance is currently being reviewed. At the
SUNY level, I direct the Center for Applied Microbiology, which supports research on microbes (sensu lato), student travel, and equipment purchase.

Self: I was very pleased to be invited to serve as an Associate Editor for the Journal of Parasitology (JP). This is one of the most respected journals in the field with a rich history. Former ESF faculty Justus Mueller, well known for his books on Parasites of Oneida Lake Fishes in the Roosevelt Wildlife Annals (amongst many other accomplishments), was once the Editor of JP. I am glad to be a part of this connection in my own way. I served on the organizing committee for the AFS Annual Fish Health meeting this past summer in Ithaca, and the meeting was a success and I enjoyed being part of it. It was definitely a big job, but I learned a lot from the experience. I had several papers come out this year from ongoing collaborations and from student’s work. I always enjoy seeing a study published, particularly the works that came from undergrad and graduate research. In September, I attended a Conference on teaching with Case Studies in Buffalo. I’d recommend this to anyone thinking about using case-based learning in the classroom. Sessions covered how to integrate cases, how to write cases, tips on how to make them work well, how to use in large classes vs. small, etc. We also worked through a few different kinds of cases in groups to see how these work first hand. I was inspired to use cases more extensively in my classes, and had a great time using them in EFB103 this year.
Appendix C. Faculty Publications (published or in press; papers in review
or accepted and waiting revision not included)

Books

Dordrecht, Netherlands: Springer.

Refereed Publications

John D. Castello
and physiological dimensions of beech bark disease development in aftermath forests. Forest Ecol.

Jonathan B. Cohen
Cohen JB, Hecht A, Robinson KF, Osnas EE, Tyre AJ, Davis C, Kocek A, Maslo B, Melvin S. To
excise nests or not: structured decision making for the conservation of a threatened species.
Ecosphere. In press.
of eastern Massasaua rattlesnakes (Sistrurus catenatus) threatened by vegetative succession. Journal
of Herpetology. In press.
measures for the threatened New England cottontail (Sylvilagus transitionalis) and comparison with
In press.
survival, and nest predators of Rusty Blackbirds in northern New England, USA. Condor 117:609-
623.

Stewart A.W. Diemont
ecological knowledge and rainforest restoration: Soil fertility beneath six agroforestry system trees.
watershed influences on river water quality: Implications for ecosystem services near megacities.
Environmental Processes 3(2): 277-305.

Martin Dovciak
Alvarez-Yepiz JC, Dovciak M. 2015. Enhancing ecosystem function through conservation: threatened
plants increase local carbon storage in tropical dry forests. Tropical Conservation Science 8, 999-
1008.
Wiezik M, Svitok M, Wiezikova A, Dovciak M. 2015. Identifying shifts in leaf-litter ant assemblages
(Hymenoptera: Formicidae) across ecosystem boundaries using multiple sampling methods. PLoS
ONE 10(7): e0134502. DOI:10.1371/journal.pone.0134502

John M. Farrell

Shannon L. Farrell

Danilo D. Fernando

Melissa K. Fierke

Elizabeth Folta
Jacqueline L. Frair


James P. Gibbs


Hyatt C. Green


Thomas R. Horton


Robin W. Kimmerer

Donald J. Leopold

Karin E. Limburg

Mark V. Lomolino

Stacy A. McNulty
Lee A. Newman

Dylan Parry
Foelker, C.J., Standley, C.R., Parry, D. and Fierke, M.K., 2016. Complex ecological relationships among an assemblage of indigenous hymenopteran parasitoids, the exotic European woodwasp (Sirex noctilio; Hymenoptera: Siricidae), and a native congener. The Canadian Entomologist, pp.1-11. Foelker and Standley are recent EFB graduate students)

Gordon Paterson

William A. Powell

Neil H. Ringler
Johnson, J. H. and N. H. Ringler 2016. Comparative diets of sub-yearling Atlantic salmon and sub-

Kimberly L. Schulz
Barlet, N.T., S.A.W. Diemont, M.A. Teece, K.L. Schulz. 2015. Emergent microbial food webs in
ecological treatment systems for wastewater: Insight from stable carbon isotopes. Ecological
Brown, B. L., N. H. Ringler and K.L. Schulz. 2015. Sediment and water quality limit survivorship in an
urban lake undergoing remediation. Lake and Reservoir Management 31(2): 145-156.
population establishment and alters genetic structuring of a newly established Daphnia
stochiometry – Evaluating food quantity and quality for zooplankton in Oneida Lake. Pages 227-244
dynamics of a managed ecosystem and its fisheries, American Fishery Society, Bethesda, Maryland.

Stephen A. Teale
Male-Produced Pheromone Component of the Citrus Longhorned Beetle, Anoplophora chinensis.
PLoS ONE 10(8): e0134358. doi:10.1371/journal.pone.0134358
Skabeikis DD, SA Teale, MK Fierke. 2016. Diel Rhythms in Monochamus (Coleoptera: Cerambycidae):
Production of and Response to a Male-Produced Aggregation Pheromone. Environ. Entomol.
DOI:http://dx.doi.org/10.1093/ee/nvw044
Skabeikis DD, MK Fierke, SA Teale. 2016. Field Response of Monochamus scutellatus scutellatus
and Monochamus notatus (Coleoptera: Cerambycidae) to the Male-Produced Pheromone, 2-
(Undecyloxy)-Ethanol, and Host Volatiles. J. Econ. Entomol. 109:1220-1225.
DOI:10.1093/jee/tow084

J. Scott Turner
Turner, J. S. (2016). Homeostasis and the physiological dimension of niche construction theory in
Turner, J. S. (2016). Swarm cognition and swarm construction. Lessons from a social insect master
Springer: 111-126.
Petersen, Kirsten, Paul Bardunias et al. In press. Arrestant property of recently manipulated soil on
Macrotermes michaelseni as determined through visual tracking and automatic labeling of individual
species implies similar ecological function. The Science of Nature.
Christopher M. Whipps
Appendix D. Papers Submitted, In Review, Accepted and Waiting Revision, and Pending Decision

Jonathan B. Cohen

Stewart A.W. Diemont

Martín Dovciak
Langdon SF, Dovciak M, Leopold DJ. Forest succession lowers vascular plant diversity and conservation value in boreal peatlands near their southern range limits. Botany (submitted).

John M. Farrell

Shannon L. Farrell

Danilo D. Fernando

Melissa Fierke

Elizabeth Folta
Ren, Q. & E. Folta (under review). Evaluating Environmental Interpretation with Mixed Method: A case study at the International Crane Foundation, WI. Journal of Interpretation Research.

Jacqueline L. Frair

Donald J. Leopold
Langdon SF, Dovciak M, Leopold DJ. Forest succession lowers vascular plant diversity and conservation value in boreal peatlands near their southern range limits. Botany (submitted).

Karin E. Limburg

**Gregory G. McGee**

**Lee A. Newman**

**Gordon Paterson**
Pitt J.A*.* Drouillard K.G. and Paterson G. Polychlorinated biphenyl bioaccumulation patterns among Lake Erie lower trophic level consumers reflect species ecologies. Submitted to *Bulletin of Environmental Contamination and Toxicology*

**William A. Powell**

**Kimberly L. Schulz**

**Alex Weir**
Goldmann, L. and Weir, A. (submitted). Molecular analysis of *Chantransiopsis* and *Tetrameronycha* provides further evidence of asexuality, and potential recognition of a new order within the Laboulbeniomycetes. (submitted to *Nova Hedwigia*)

**Christopher M. Whipps**
Appendix E. Papers/Posters Presented at Science Meetings

Jonathan B. Cohen
Darrah A, Cohen JB. Decision support population modeling for predator exclosure use for Piping Plover recovery Atlantic Coast Piping Plover and Least Tern Workshop. Shepherdstown, WV. Jan 2016.
Darrah A, Cohen JB. Decision support population modeling for Piping Plover recovery: project overview and progress. Western Hemisphere Shorebird Group meeting. Chincoteague, VA Sep 2015.

Stewart A.W. Diemont
Falkowski, TB, S.A.W. Diemont, A. Chankin, 2016, Successional changes in ecosystem structure and processes in Lacandon Maya agroforests (poster), April 12, Spotlight on Student Research and Outreach, SUNY ESF, Syracuse, New York.

Martin Dovciak
Quant J, Nowak C‡, Dovciak M. 2016. Human-based spread of invasive plants from powerline corridors in New York State. Workshop and co-joined webinar presented for Environmental Energy Alliance of New York, April 7, 2016, Albany, NY (workshop participants from the electric utility industry, New York State Department of Environmental Conservation, and the New York State Public Service Commission).


John M. Farrell


Danilo D. Fernando


Melissa K. Fierke


**Jacqueline L. Frair**


The conservation broker: bridging the gap between academic research and wildlife management. Biology Seminar Series, University of Maine, Orono, ME (Nov 2015)

Documenting moose population size and distribution across public and private lands in the Adirondacks. Presented by P. Schuette (post-doc in the Frair lab)

—North American moose conference and workshop, Granby, CO (Apr 2015)

—Northeast Fish and Wildlife Conference, Newport, Rhode Island (Apr 2015)


**James P. Gibbs**


**Thomas R. Horton**


**Robin W. Kimmerer**

“The Land as Teacher: revitalizing the process for ongoing generation of TEK” Native American and Indigenous Studies Conference, May 15 2016 Honolulu, Hawaii

**Karin E. Limburg**


**Gregory M. McGee**


Stacy A. McNulty

Lee A. Newman
The Gordon Award. 27-30 Sept 2015. 12th International Phytotechnologies Conference, Manhattan, Kansas.

Student and Post-Doc Presentations (student and post-doc names italicized)
Oral:

Poster:
**Dylan Parry**
Invited Oral

Other Submissions

Graduate Student Posters and Talks
Leuenberger, W., K. Wallin, and D. Parry. 2015. Response of forest insects and their natural enemies to simulated ice storms in a northern hardwood forest. Hubbard Brook Ecosystem Study 52nd Annual Cooperators’ Meeting. Woodstock, NH. July 8, 9.
Leuenberger, W., K. Wallin, and D. Parry. 2015. Response of forest insects and their natural enemies to simulated ice storms in a northern hardwood forest. 2015 Long-Term Ecological Research All Scientists Meeting. Estes Park, CO. August 30-September 2.

**Gordon Paterson**
Paterson G., Ecological tracers indicate basin specific ecologies for the Lake Huron food web. 59th Annual Conference of the International Association for Great Lakes Research, University of Guelph, Guelph, Ontario, CANADA. June 6-10 2016.

**William A. Powell**
Update on the American chestnut project progress. 7/20-21/15. Annual Forest Health Initiative (FHI) Board meeting. Washington DC
The American Chestnut Research and Restoration Project. 7/28-29/15. Meeting with the Monsanto regulatory experts to help learn what is needed to go through the federal regulatory process. Gave a presentation to employees and researchers from the Danforth Plant Science Center. St. Louis, MO.
Meeting with the EPA, FDA, and USDA APHIS BRS representatives. Gave presentation on the American chestnut and discussed what is needed for a regulatory review. 10/21/15. Washington DC.
Using the tools of Genetic Engineering to help Save the American Chestnut. 5/19-20/16. Plenary speaker. NYS Biotechnology Symposium. Syracuse, NY.
Neil H. Ringler


Rebecca J. Rundell


Kimberly L. Schulz
Schulz, K.L., C. Bachman, A. Looi, J.M. Farrell. 24 June, 2015. Flood regime effects on stoichiometry and plankton in riverine freshwater marshes – field and laboratory experimental tests suggest modifications to the classic paradigm. COBS: Conference on Biological Stoichiometry 2015, Trent University, Peterborough, Ontario, Canada.


Stephen A. Teale

J. Scott Turner
Christopher M. Whipps


**Student and other co-authored presentations (presenter underlined)**


April 19, 2016. SUNY-ESF Spotlight on Student Research, Syracuse, NY. Investigating tolerance, growth, and fecundity of laboratory zebrafish (*Danio rerio*) treated with clarithromycin and tigecycline antibiotics. Doerr, K.M., Chang, C.T., Whipps, C.M.

April 19, 2016. SUNY-ESF Spotlight on Student Research, Syracuse, NY. Investigating transmission of *Mycobacterium* spp. from experimentally infected zebrafish (*Danio rerio*) to tank biofilms. Adler, A., Chang, C.T., Whipps, C.M.


Appendix F. Faculty Grants
(active during reporting period)

Jonathan B. Cohen

Stewart A.W. Diemont
Diemont, S.A.W. and L. Quackenbush. EAGER: Understanding the potential role of Mayan traditional ecological knowledge for ecological engineering of forest restoration in Mexico. National Science Foundation. $100,000. 5/1/12-12/31/15.
Klossner, R. (PI), S.A.W. Diemont S.A.W. City of Syracuse creekwalk landscaping design. Spanfelner Fund/Central New York Community Foundation, $50,000, 12/1/12-6/1/17.

Martin Dovčiak
NYSERDA. “Effects of acidic deposition and soil acidification on forest understory plant biodiversity in the Adirondack Mountains”. T. Sullivan (PI), M. Dovčiak, G. Lawrence, T. McDonnell; $200,000; 3/2015-10/2016. ($87,001 to M. Dovčiak)
Northeastern States Research Cooperative. “Global change fingerprints in montane boreal forests: Implications for biodiversity and management of the northeastern protected areas”. M. Dovčiak (PI), C. Beier, G. Lawrence, J. Battles. $89,497. 8/2012-8/2015.
SUNY ESF Seed Grant Program. “Effects of mosses on the chemistry of tree seedlings and their impacts on forest regeneration” M. Dovčiak (PI), R. Kimmerer, C. Driscoll. $6,800. 4/2014-12/2015.

John M. Farrell
Farrell, J. M. 4/1/16-3/31/21. Water Level Regulation Adaptive Management Research: Coastal Wetland Health Indicators and Sportfish Production in the Upper St. Lawrence River. NYS Department of Environmental Conservation Coastal Lakes and Oceans Program (funded $1,417,046; at-risk $60.3K)

Shannon L. Farrell
U.S. National Park Service Coastal Plain Bat Monitoring. Comprehensive bat presence-absence surveys and bat habitat use assessment at Cape Cod and Fire Island National Seashore.
U.S. National Park Service Continuing Assessment of populations and white-nosed syndrome at Cape Cod National Seashore.
NSRC Theme Four: Biodiversity and protected area management 2016. Imperiled Bats in Northeastern Forest: balancing bat conservation with forest management. Awarded: $121,029. Dates: 9/1/2017-12/31/2018
**Danilo D. Fernando**

Genetic, Reproductive and Habitat Analysis to Support American Hart’s-Tongue Fern Reintroduction and Restoration in the Great Lakes Region. USF&WS-GLRIP, $99,600. May 1, 2012 to June 30, 2014. PI: DD Fernando, Co-PI: DJ Leopold. This project has been extended to June 30, 2015 to cover the reintroduction aspect of the project.


Ex situ conservation of American hart’s-tongue fern. Sponsor: Landscape Architecture WMBE - $14,569. PI: DD Fernando.


**Melissa K. Fierke**


**Elizabeth Folta**

Environmental Protection Agency (subcontract under Syracuse University); The Haudenosaunee Thanksgiving Address as a pathway to stewardship education in the Onondaga Lake Watershed; $30,938 (ESF subcontract portion); 8/1/2015-7/31/2017; R. Kimmerer and E. Folta.

National Institute of Food and Agriculture; Sowing Synergy: a graduate program that integrates indigenous and scientific knowledge for sustainability; $642,811; 9/1/2015-8/31/2018; R. Kimmerer, S. Diemont, E. Folta, C. Beier, and J. Manno.
Jacqueline L. Frair
Grants as Lead PI


Grants as co-PI

James P. Gibbs

**Hyatt C. Green**  
Source: SUNY-ESF, Center for Applied Microbiology  
Title: Identification of Fecal Contaminants on the Onondaga Lake Shoreline  
Total Award: $4,600  
2015-2016 Award: $4,600  
Award period: Jul 1, 2015 to June 30, 2016

Source: State Wildlife Competitive Grants Program, US Fish and Wildlife Service  
Title: Multistate Recovery Actions For The Bog Turtle And Associated Headwater Wetland Species Of Greatest Conservation Need  
Total Award: $117,000  
2015-2016 Award: $28,393  
Award period: Oct 1, 2015 to June 30, 2018

Source: SUNY-ESF Seed Grant  
Title: Microbial Dark Matter in Green Lake, NY  
Total Award: $6,666  
2015-2016 Award: $6,666  
Award period: June 1, 2016 to May 31, 2017

**Thomas R. Horton**  
Horton TR. USDA McIntire-Stennis Program. Increasing success of pitch pine restoration through soil microbe management. $56,819. 8/15/16 – 9/30/19. Taylor Patterson, MS. Aimee Hudon, MS (starts 8/2016).  

**Robin W. Kimmerer**  
USEPA Environmental Protection Agency, Environmental Education Program. $30,900 “Using the Thanksgiving Address to Advance Environmental Literacy and Environmental Stewardship” with Dr. Phil Arnold and Rachel May and Beth Folta. Syracuse University.  
United States Department of Agriculture, Multicultural Scholarship Program, $200,000, May 2012-May 2016.  
Tribes and Climate Change: engaging northeastern indigenous nations. US Forest Service $60,000 2011-2016  
US Forest Service, Voices of Mother Earth: Native Women’s Climate Change Summit, $60,000 May 2015-May 2018  
National Science Foundation, participating partner with Dr. Jay Johnson at Kansas University, FIRST : Facilitating Indigenous Research, Science and Technology Research Coordination Network grant $800,000. 2015-2018
National Science Foundation: ITEST: Earth Partnership: Indigenous Arts and Sciences—Connecting STEM to Native Science. Advisor to project $1.2 million by PI Cheryl Bauer Armstrong at University of Wisconsin-Madison.

Donald J. Leopold
Honeywell International Inc., Onondaga Lake watershed 1-8: Plant studies; $37,966; August 2014 to August 2015; D.J. Leopold.
Honeywell International Inc., Onondaga Lake and adjacent lands: Habitat assessment and restoration, vegetation issues; $19,956; January 2014 to December 2016; D.J. Leopold.
Environmental Protection Agency, Improving vegetation indicators of wetland condition; $172,070; Oct. 2013 to September 2015; D.J. Evans and D.J. Leopold.
NYS-DEC, New York Natural Heritage Program; $3,273,393; July 2012 to June 2017; D.J. Leopold.
NYS-DEC, Invasive plants program coordinator; $500,000; January 2010 to June 2016; D.J. Leopold.
USFWS (GLRI), Production of genetically diverse American hart’s-tongue fern for introduction or reintroduction in the Great Lakes Region, $99,682; July 2011 to September 2015; D.D. Fernando and D.J. Leopold.
USFWS (GLRI), Control of Japanese knotweed (*Fallopia japonica* var. *japonica*) on Leedy’s roseroot (*Rhodiola integrifolia* subsp. *leedyi*), a federally-threatened plant; $69,902; September 2011 to August 2015; D.J. Leopold
USFWS (GLRI), Restoring critical habitat, mitigating multiple threats, and evaluating population statuses for bog turtle, eastern massasauga rattlesnake, and Houghton's goldenrod co-occurring in a single...; $128,064; August 2012 to April 2016; D.J. Leopold and J.P. Gibbs.
USFWS (GLRI), Range wide status assessment of Houghton’s goldenrod, with a special emphasis on niche limit, demographic transitions, and population stability; $149,600; February 2016 to December 2017. D.J. Leopold.
National Park Service, Impacts of hurricane Sandy and white-tailed deer on maritime vegetation recovery at Fire Island National Seashore; $224,619; July 2014 to July 2016; H.B. Underwood and D.J. Leopold.

Karin E. Limburg
Baltic Sea 2020: “Eastern Baltic Cod: Solving the ageing and stock assessment problems with combined state-of-the-art tagging methods.” 27M SEK (approx. $3.2 million), 1/01/2016 – 12/31/2019; will support 4 PhD students in 4 Baltic countries; KL is co-PI and leading the otolith chemistry work package.
Cornell University, NY Water Resources Institute: “Temporal changes in spawning in signature fishes of the Hudson River estuary.” 1/01/2015 – 3/31/2016, $10,000; supports 1 student (Chris Nack, who wrote the proposal).
Hudson River Foundation: “Assessing silver eels in Hudson River tributaries.” 6/1/13 – 12/31/16, $134,838; supports 2 students (Sarah Mount, Kayla Smith)
Hudson River Foundation: Mark Bain Fellowship award to Thomas Evans, “Understanding ammocoete movement and ecology.” 9/01/14 – 3/31/17; $17,000, 1 student supported (Tom Evans)
Hudson River Foundation: Mark Bain Fellowship award to Christopher Nack, “Evaluating the impacts of large storm events on the early life stages of American shad.” $17,000, 7/01/15 – 12/31/16; 1 student supported (Chris Nack)
National Science Foundation: “Collaborative Research: Consequences of sub-lethal hypoxia exposure for fishes: a trans-oceanic comparison.” 9/1/14 – 8/31/17, $283,564; supports 1 student (Melvin Samson)
NYSDEC, Mohawk River Basin Action Agenda (w/Neil Ringler). KL’s part: “Determining the provenance and life histories of blueback herring in the Mohawk River.” 9/1/14-3/31/17, $115, 171; 3 students supported on my part of the award (Chris Nack, Kayla Smith, Cara Ewell Hodkin)
NY Sea Grant: “Reconnecting waters for eels and river herring: a mediated modeling approach to assess receptivity to dam removal in the Hudson-Mohawk watershed.” 2/01/16 – 1/31/18, $132,780; supports 1 student (Kayla Smith)

Swedish Research Council FORMAS: “Losing track of time: dubious age determination of Baltic cod, probable causes and promising solution.” 3M SEK (approx. $353,000), 1/01/16 – 12/31/18; will support 1 PhD student at the Swedish University of Agricultural Sciences (SLU), where KL is a Visiting Professor and lead PI.

USGS: “Natal origins of humpback club aggregations determined by otolith chemistry.” 7/1-13 – 9/30/16, $112,670; supports 1 student (Tom Evans)

Mark V. Lomolino
PI - NSF – Of Mice and Mammoths: Toward a General Theory of Body Size Across Space and Time, requested $420,681, received partial funding $100,000 for initial period of grant; August 2010 to 2016.

Gregory G. McGee
National Science Foundation, “Integrated Knowledge-Based Experiences for First-Year Biology and Chemistry Laboratories,” (with N. Abrams (PI), E. Hogan and V. Luzadis), $193,290 total, $64,430 current year, 6/12-5/15, extended to 5/16.


Mianus River Gorge Preserve Graduate Research Assistant Program. Development of restoration protocols for native herbaceous plant species in post-agricultural second-growth forests. $15,000 total, $5,000 current year, 4/15-4/18.

*Grants obtained by my graduate students:

Stacy A. McNulty
Schlesinger, M., J. P. Gibbs and S. McNulty. Determining the importance of vernal pools across geophysical and urbanization gradients to inform regulation, conservation, and management. EPA Wetland Program Development Grant. $324,515. 1/1/16 - 12/31/18.


Beier, C., S. McNulty, P. Hirsch and A. Parker. New York State Department of Environmental Conservation, Application of GIS to Resource Inventory for Unit Management Planning, $1,300,000, $125,313, 6/1/03 – 8/31/16.


Lee A. Newman
US Department of Agriculture; Nanoparticle Contamination of Agricultural Crop Species; $1,498,080; Mar 2011 to Mar 2016; JC White, X. Ma, L Newman and B. Xing.
National Aeronautics and Space Administration; Development of Hyperspectral Imaging of Plants to Detect Contamination; $355,509; March 2011 to Jan 2017; current year $32,268; L Newman.
Gifford Foundation; Construction Funds for Horticultural Therapy; $1000; June 2013 to Sept 2016; L Newman.
American Legion Ladies Auxillary; Funds for Horticultural Therapy; $2500; May 2013 to open ended; L Newman.
USDA McIntire-Stennis Program through ESF; Understanding the Role of Select Endophytic Bacteria in Enhanced Growth and Disease Resistance; $53,847, current year $22,673; June 2014 to August 2016; L Newman.
ESF Seed Grant; Isolation of Genetic Promoters to Increase Production of Plant-Based Biopharmaceuticals; $7,000; April 2015 to December 2016; L Newman.
US-Russia University Partnership Program (UPP) Eurasia Foundation; Modernizing Graduate Education at the University of Tyumen; $39,515; April 2016 to December 2016; L Newman and G. Lanza

Dylan Parry
2015-2016. D. Parry and N. Schoppmann. Initial Inventory of the Moths of Plum Island. NY NHP $6400
2015-2016. D. Parry and K. Wallin. Quantifying the Response of Forest Insect Communities and Their Natural Enemies to Simulated Ice Storm Damage. ESF Seed Grant $7750.

William A. Powell
The New York Chapter of The American Chestnut Foundation. Getting Events in the Ground and Tested. $210,000 (8/1/12-7/31/15). Ended this year but receiving another $25K this summer for seed production orchards. Co-PI with Dr. Maynard as PI.
USDA-Biotechnology Risk Assessment Grant program (BRAG), Evaluating Environmental Impacts Of Maturing Transgenic American Chestnut Trees Relative To Chestnut Trees Produced By Conventional Breeding. $500,000 (9/1/12-8/31/14 – no cost extension to 8/31/16). PI with co-PIs, Dr. Maynard, Dr. Parry, Dr. Briggs, Dr. Nowak, and Dr Tschaplinski (ORNL). Finishing this summer.
Forest Health Initiative. Phase II: Supplemental - Transgenic American Chestnut leaf assays. $30,000 (1/1/15 – 12/31/15). Terminating this year. PI with Dr. Maynard Co-PI
USDA IR-4 project. Regulatory studies for the transgenic American chestnut. $29,000 (5/1/15-4/30/16). PI. Asking for an additional $15K this year.
Crowd Funding, 10,000 Chestnut Challenge. $113,000 to date with more donations possible. PI with Dr. Maynard as co-PI.
The American Chestnut Foundation, Stanback Grant. The American chestnut research. $50,000 (7/1/14-6/31/15). PI with Dr. Maynard as co-PI. (possible renewals for 5 years, total $250,000).

The American Chestnut Foundation, Stanback Grant. The American chestnut research. $200,000 (10/1/15-9/3/16). PI with Dr. Maynard as co-PI. (possible renewals for 5 years, total $250,000 with above).

New York State legislation line item. American chestnut research and restoration project. $100,000 (7/1/15 – 6/30/16, renewed this year for another $100K). Post-doc. PI with Dr. Maynard as co-PI.

Mississippi Fish & Wildlife, Testing for deregulation of blight resistant American chestnut. $60,000 from 7/1/15-8/30/16, just renewed for 2 more years ($120,000). PI.

Neil H. Ringler
USDA Forest Service
Enhanced Effectiveness of Planning and Managing Urban Forest Ecosystems
8.50 CY; PI
$67,500
09/22/2011 - 09/21/2016
National Science Foundation
Technology Enhancement of Hot Water Extraction
5.0% CY; Co-PI
$599,822
09/01/2012 – 08/31/2016
Honeywell International Incorporated
Onondaga Lake Biological Assessment and Monitoring
4.0% CY; PI
$423,944
07/01/2013 – 12/31/2016
US Geological Survey
Restoration of Lake Ontario Native Fish Species
2.0% CY; PI
$245,839
07/30/2014 – 08/31/2016
NYS Department of Environmental Conservation
Determining the Provenance and Life Histories of Blueback Herring in the Mohawk River
10.0% CY; PI
$261,072
04/01/2014 – 03/31/2017
NYS Department of Environmental Conservation
Low Gradient Stream IBI
5.0% CY; PI
$80,000
05/16/2015 – 01/01/2017
NYS Department of Environmental Conservation
Biological Condition Estimation for New York State Lakes: Application and Evaluation of Lake Assessment Biological Metrics
2.0% CY; PI
$86,000
08/24/2015 – 08/23/2017
**Rebecca J. Rundell**


**Kimberly L. Schulz**

Source: Research Foundation of SUNY ESF, SUNY Passport
Title: Interactive Effects of Climate Change and Invasive Invertebrates on the Great Lakes
PI: Schulz, K.L.
Amount: $4,500
Dates: 5/15/2015-8/31/2015

Source: Great Lakes Research Consortium
Title: Analysis of a Large Multi-Lake Dataset to Advance Understanding and Management of Harmful Algal Blooms in New York State Lakes
Amount: $14,838 ($5,000 to KLS)
Dates: 3/31/2016-3/31/2017

Source: Owasco Lake Enhanced Watershed Restoration Action Plan (DEC, Cayuga Community College)
Title: Development of Monitoring Buoy to Provide Real-Time Surveillance of Harmful Algal Blooms in Owasco Lake (Schulz subcomponent: Food web monitoring program)
coPIs: Schulz, K.L. and Upstate Freshwater Institute
Amount: $22,000 to KLS, $47,320 to UFI
Dates: summer 2016-summer 2018

Source: New York State Aquatic Invasive Species Spread Prevention Program
coPIs: C-OFOKLA (Cortland-Onondaga Federation of Kettle Lake Associations), Cortland County Soil and Water Conservation District (CCSWCD) and SUNY-ESF (subcontractor)
Amount: $99,039.40 to CCSWC, with subcontracts to COFOKLA and SUNY ESF
Dates: May 2016-April 2019

**Stephen A. Teale**


Alphawood Foundation, PI: Teale, S. “Asian Longhorn Beetle Research at SUNY-ESF” $92,137; FEB-2014 To FEB-2016

Alphawood Foundation, PI: Teale, S. “Asian Longhorn Beetle Research at SUNY-ESF” $95,078; MAY-2015 To MAY-2017

Alphawood Foundation, PI: Teale, S. “Asian Longhorn Beetle Research at SUNY-ESF” $95,895; 1-FEB-2016 To 31-JUL-2017

Helmsley Trust/International Community Foundation, PI: C. Causton. “Protect Galapagos Landbirds from Invasive Species” ~$800,000/3 yr. $81,693 to ESF (SEPT-2014 To NOV-2015).
Helmsley Trust/International Community Foundation, PI: C. Causton. “Protect Galapagos Landbirds from Invasive Species” ~$800,000/3 yr. $98,350 to ESF (31-NOV-2015 To 31-OCT-2016).

### J. Scott Turner

<table>
<thead>
<tr>
<th>Source</th>
<th>Title</th>
<th>Amount</th>
<th>Current year</th>
<th>Award period</th>
<th>Graduate Assistants supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Frontiers Science Program</td>
<td>From swarm intelligence to living buildings. Novel concepts of managing internal climates</td>
<td>$1,350,000</td>
<td>3</td>
<td>December 2012 to November 2016</td>
<td>1</td>
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<tr>
<td>National Institutes of Health</td>
<td>Modeling termite construction behavior</td>
<td>$594,343</td>
<td>1</td>
<td>September 2014 to August 2019</td>
<td>1</td>
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<tr>
<td>National Science Foundation</td>
<td>Biomimicry in Structural Topology: Manifesting Adaptable and Integrated Structural Form through Agent Based Modeling of Macrotermes Mounds</td>
<td>$449,384</td>
<td>August 2015 to August 2018</td>
<td>0</td>
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<td>Centre for Nature Inspired Engineering</td>
<td>Self-organizing urban design Calibrating analogues against scales.</td>
<td></td>
<td>June 2016-December 2016</td>
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**Alexander Weir**

National Science Foundation, Macrofungi Collections Consortium, Grants to Advance Digitization of Biological Collections

Total amount – unknown
ESF Portion - $34,000

National Science Foundation, Microfungi Collections Consortium, Grants to Advance Digitization of Biological Collections

Total amount – unknown
ESF Portion - $49,748

**Christopher M. Whipps**

Whipps CM, Fierke MK, Parry D. USDA-CREES/McIntire-Stennis Program (05/01/13-09/30/15) - $52,000. Development of Molecular Techniques to Inform Management of *Sirex noctilio*, an Introduced Woodwasp. (10% AY) Role: Lead development of molecular biology techniques in parasitoid insects.


Whipps CM. New York DEC (04/01/14-4/30/17) $132,222. Increasing Capacity for Genetic Analysis at SUNY ESF.

Appendix G. Service to Department, College, and University

John D. Castello
Associate Chair
Helped to organize EFB spring awards ceremony with Sandy Polimino
Member President’s Campus Climate Task Force (April 2016-present)

Jonathan B. Cohen
Faculty advisor for student chapter of The Wildlife Society
CCAC
GPAC, co-chair
IACUC
Committee on Curriculum
Reviewer for Sussman Internship Applications
Search Committee, Clerical Specialist, Purchasing

Stewart A.W. Diemont
Assessment Committee, Environmental Biology Undergraduate Program
Graduate Program in Environmental Science, Ecosystem Restoration, Area Leader
Center for Native People and the Environment, Advisory Board
Academic Governance Awards Committee
Academic Governance Library Committee, Chair
Academic Governance Executive Committee
Society for Ecological Restoration Club, Adviser

Martin Dovciak
Robert Burgess Graduate Scholarship in Ecology, Chair
Graduate Program Advisory Committee, member
Scientist-in-Residence and Roosevelt Forest Ecologist, Roosevelt Wild Life Station
Mentored and supervised post-doctoral and post-M.Sc. research staff (Dr. M. Lesser- co-advised by J. Frair; and J. Quant, co–advised with C. Nowak).
CSTEP program mentor
Graduate Program in Environmental Science–Ecosystem Restoration Program, member
Graduate Program in Environmental Science–Environmental Monitoring and Modeling Program, member
Young Forest-Wildlife working group, member
Beech Working Group, member
Center for Urban Environment, member

John M. Farrell
Served on Promotion and Tenure Committee
Mentored an Assistant Professor in EFB
Reviewed teaching performance of several faculty seeking promotion/tenure
ENS department presentation at CIRTAS
Hosted AFS major potluck meeting with graduating seniors
Served as Director, TIBS; maintained facility, boats, gear, equipment, hired and supervised staff, students and volunteers, managed long-term data collection and research program, conducted community outreach.
I hosted a group from Mahidol University brought by Dr. Lee Newman at TIBS.
ESF Alumni event Clayton NY – Ribbon Cutting for new Cean Building at TIBS gave tour, presentations, coordinated student poster session and served as MC.
Working on agreement between Thousand Islands Land Trust and ESF for building of new mainland and storage facility for TIBS.

Roosevelt Wild Life Station (RWLS) – Scientist in Residence – provided input to RWLS initiatives; gave updates on research and educational activities related to RWLS

PI on numerous grants; assistance with UAV regulations (drones) policy development; policy/agreements between RF and outside organizations

**Shannon L. Farrell**

CLBS committee

GPAC committee


Dept awards:

- Baldassarre Award, coordinator 2014-present
- Chamberlain Award, coordinator 2014-present
- Roy Glahn Award, coordinator 2014-present
- Dence award, coordinator Fall 2015-present

Open House/ Accepted Student Reception: one in Fall 2015 and 1 in Spring 2016

IQAS committee Fall 2013-present

Newly formed College-Wide Gen Ed Assessment committee Fall 2015-present

Fink Fellowship Committee Fall 2013-present.

Birding Club faculty advisor

CSTEP Mentor: providing summer research opportunity for CSTEP fellow

Working with Frank Moses (while he was employed at ESF), development office, to get small grant from Audubon society for construction of Chimney Swift Tower for placement on campus and further fund raising campaign to fund signage and undergraduate research associated with tower. We were awarded funding to build tower (~$1500); fundraising campaign and construction and placement have been temporarily delayed but plans to move forward are in progress.

Coordinated birding for campus Field Days event

Earth Day birding walks on campus for visiting school groups 4/22/2016 (~ 12 attendees per session)

**Danilo D. Fernando**

Director, EFB Graduate Program

Member, Graduate Program Advisory Committee

Chair, Joseph and Ruth Hasenstab Memorial Fellowship Award Committee

EFB New Graduate Student Orientation, August 21, 2015

Member, Graduate Council

**Melissa K. Fierke**

Co-chair Graduate Program Advisory Committee

Scholarship committees: Roskin undergraduate award to outstanding female senior

- Chun Wang to outstanding female senior undergraduate award
- Outstanding PhD student award
- Lanier, Stegeman, and Simeone Endowed Entomology Fellowships

Secretary, Faculty Governance

Faculty Governance Executive Committee

Core team to advise SUNY on ESF issues

Co-Chair, Bicycle Safety Committee – founded in January 2013 to engage stakeholders at ESF, SU and the City of Syracuse to increase cycling safety for ESF commuters

Sustainability Committee
IQAS Committee
Space Renovation Committee
Athletics Committee
First Year Experience Committee
Graduate Assistant Colloquium on Teaching and Learning Blackboard training
ESF in the HS biology course, in collaboration with Outreach and local high school teachers and administrators, now offered in 4 local high schools
December and May Senior Soirees

Elizabeth Folta
Environmental Education & Interpretation Program Coordinator
EFB Course and Curriculum Assessment Committee Member
Help with departmental open house: fall
Finalized assessment report for the Natural History and Interpretation major.
Pilot tested portfolio review of two graduating seniors with the help of Katie Mulverhill, who designed the rubric and conducted the evaluation.
Faculty advisor to the INTERP club (student environmental interpretation club)
Curriculum group participant of Environmental Science area Environmental Communication and Participatory Processes and Human Dimensions of the Environment
EFB representative to the Recreation Resources and Protected Area Management minor.
Student Life Committee Member.

Jacqueline L. Ffair
Associate Director, Roosevelt Wild Life Station
Published RWLS annual report
Worked with the ESF College Foundation to raise funds for Boone and Crockett Club endowment, $685,000 to date, $309,000 this year.
Assisted with other fundraising and outreach efforts.
Roosevelt Wildlife Collection
Supervised curator, Ron Giegerich.
Curriculum Coordinator for Wildlife Science major
Revised and delivered second exit exam
Revised Transfer Articulation Guidelines for Ranger School transfer students
Science Advisor to NY State Fish and Wildlife Management Advisory Board (President’s representative)

James P. Gibbs
Director, Roosevelt Wild Life Station
Associate Chair
Member, Promotion and Tenure Committee
Coordinator, Conservation Biology Major

Hyatt C. Green
Disease Ecologist/Epidemiologist Search Committee, Spring 2016
EFB Open House, Biotech major representative, Spring 2016

Thomas R. Horton
Promotion and Tenure Committee
Faculty mentoring committees: Gordon Paterson
Manage plant growth chambers in Illick Hall 308
Attended search talks for Disease Ecologist/Epidemiologist position (Brian Leydet hire)
Lowe-Wilcox/Zabel/Morrell student awards committee, chair
Academic Research Building committee
Strategic Planning and campus-wide work environment issues

Robin W. Kimmerer
Co-director, Cranberry Lake Biological Station
Chair, Cranberry Lake Advisory Committee
Peer classroom evaluation for Promotion and Tenure Committee
Mentor for junior faculty member
Coordinate Chun June Wang Award
Director, Center for Native Peoples and the Environment
College Diversity Committee
Promotion and Tenure Committee, outside member, Environmental Studies
College-wide Awards Committee
Assist Admissions Office with recruitment strategies for Native American students
ESF Representative to Great Law of Peace Educational Center
Advisor to Primitive Pursuits student organization
CSTEP Mentor
Minor Coordinator, Native Peoples and the Environment
Coordinate with Development Office on initiatives for Center for Native Peoples and the Environment
Speaker for Baobab Society

Donald J. Leopold
Chair, Department of Environmental and Forest Biology

<table>
<thead>
<tr>
<th>General Summary of Regular Duties</th>
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<tbody>
<tr>
<td>Supervisor for about 35 faculty, two Secretary 1 positions (incl. my administrative assistant), two Instructional Support Specialists and other staff</td>
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<tr>
<td>Related: promoting faculty and staff within and outside of the department and facilitating the many good ideas that regularly emanate from faculty and staff</td>
</tr>
<tr>
<td>Manage allocation of state, Research Foundation (research incentives), and College Foundation accounts</td>
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<td>Manage allocation of 40 state graduate teaching assistantships</td>
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<td>Convene regular department meetings</td>
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<td>Represent department at biweekly Academic Council meetings</td>
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<tr>
<td>Work with Development Office for fundraising</td>
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<tr>
<td>Responsible for making sure that all regular and new undergraduate and graduate courses are offered as listed in the College Catalog or webpage; main contact with Registrar for any course changes.</td>
</tr>
<tr>
<td>Work with Physical Plant on all planned renovations and emergency repairs</td>
</tr>
<tr>
<td>Represent department at all college open houses and other department events</td>
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<tr>
<td>Prepare annual department report</td>
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</table>

Member, Core Team for Academic Research Building (since March 2010)
Member, Core Team for Roosevelt Wild Life Education and Research Center in ESF’s Gateway Center (since Fall 2014)
Roosevelt Field Ecologist, Roosevelt Wild Life Station, SUNY-ESF
Participant in the Environmental Health undergraduate level curriculum group.
Organizer and Host, Dale L. Travis lectures, twice each year.
Presenter, Graduate Colloquium August 2015, “A Vision of Excellence in Teaching and Scholarship”
Presenter (twice, on campus trees and shrubs) for annual Alumni, Family, and Friends BBQ, September 2015
ESF Fall Field Days Event, Tree identification on campus and in Oakwood Cemetery, two walks, October 2015
Attended E.O. Wilson Half Earth launch at Harvard Club of NYC to assist with College development activities, May 2016.

Karin E. Limburg
Member, Graduate Program Advisory Committee
Member, College-wide P&T Review Committee
Provost search committee
Participated in SUNY 4E network

Gregory G. McGee
EFB Undergraduate Curriculum Director
ENB Curriculum Coordinator
EFB Curriculum Coordination and Assessment Committee
CLBS Advisory Committee
ESF Academic Standards Sub-Committee
CSTEP Advisory Board
  Led CSTEP pre-orientation forest walk at Green Lakes State Park (8/24)
First-Year Orientation Programming
  College 101 (Academic Success) co-facilitator w/ Scott Blair 8/26
  College 102 (Diversity) co-facilitator w/ Scott Blair 8/27
Transfer Orientation Programming
  Led two service-based trips to AEC (~12 students each, Sept. 25-27, Oct. 9-11) to provide community-building experiences and opportunities for follow-up advising to transfer (primarily) and first-year students.
ESF Writing Center - Technical Writing Workshop for Tutors (11/2)
ESF in the Classroom
  Coordinate and provide instructional support to local high school sections of General Biology I & II Laboratory.
  Led discussion on careers in Biology/Environmental Science for Syracuse Institute of Science & Technology biology class (~26 in attendance) (1/15)

Stacy A. McNulty
Associate Director, Adirondack Ecological Center
Council for Geospatial Modeling and Analysis (CGMA)

Lee A. Newman
Course and Curriculum Assessment Committee member.
Core Team Member for the Academic Research Building.
Fall and Spring Transfer Student Advising
Point person for deionized water treatment system
Member, Environmental Epidemiologist Faculty Search Committee
Spoke at EFB and BTC orientation seminars
Pre-Med Advisor, Environmental Biology students
Chun Wang Award Committee, member
Tenure and Promotion Committee
Member, Environmental Chemistry Faculty Search Committee
Member, Committee on Research
Coordinator, Environmental Health major
Curriculum group participant of Environmental Science
Mentor for Undergraduate Honors and CSTEP programs
Spoke at Environmental Science Orientation seminar
Lead in developing MD/PhD program with Upstate Medical University
Advisor, 3 + 3 Doctor of Physical Therapy Program
Lead in developing NIEHS grant program
Curriculum group participant of Environmental Science Coupled Natural and Human Systems
Coordinator, Environmental Science’s Health and the Environment focus area
Member of Hill Collaboration Nervous System Group
Member of Hill Collaboration Cancer Group
Member of Hill Collaboration Wounded Warrior Group
Chair, Biotechnology Research Symposium organizing committee
Supervisor, Environmental Health/Environmental Medicine Biotechnology Core Facility
Advisor: Food Security minor
Advisor: Environmental Health minor
Lead, in developing 2+2 joint diploma programs with Mahidol University, Bangkok, Thailand, in the majors of Environmental Biology, Biotechnology and Environmental Health
Developing a collaborative program between Environmental Health group and the NYS Department of Health at the Wadsworth Center in Albany
COIL participant
Development of SUNY/Brookhaven National Lab Research and education collaborations
Developing a collaborative program between the Environmental Health group, and the University of Albany Department of Environmental Health

Dylan Parry
Director – Graduate Program in Environmental Science (Beginning January 2016)
Coordinator - Conservation Biology Major (165 students) (until January 2016)
CCAC – committee member (Until January 2016)
GPAC – committee member
Leroy C. Stegeman Award in Invertebrate Ecology – Chair and award presenter
Outstanding PhD Award committee - member
Director – Graduate Program in Environmental Science (Beginning January 2016)

Gordon Paterson
Graduate Program Advisory Committee
Cranberry Lake Biological Station Advisory Committee
Grober Graduate Research Fellowship (Candidate review and selection)
Robert Burgess Graduate Scholarship in Ecology (Candidate review and selection)
Accepted Student Reception (February 15th, 2016)
Cranberry Lake Biological Station Information Session (February 8th, 2016)
Faculty position search, EFB representative, Environmental Chemist, Department of Chemistry (Committee).
Spotlight on Student Research Conference April 2016.

William A. Powell
Coordinator for the undergraduate Biotechnology major
Fall Open House, representing the Biotechnology Major
Awards Ceremony: Presented the Distinguished Scholar Award in Biotechnology.
Director of the Council on Biotechnology in Forestry
Roosevelt Wild Life Station Scientist in Residence
IBC (Institutional Biosafety Committee) member
Served on the Campus DRC evaluating Dr. Ivan Gitsov’s promotion application.
Neil H. Ringler
Ex Officio Committee on Research
SUNY/RF Research Council
SUNY/RF Vice Presidents for Research/Officers
SUNY/RF Network of Excellence Co-leader with SUNY Stony Brook, Albany, Binghamton
SUNY Distinguished Academy; SUNY Senate Committee on Research and Graduate Education
Co-Director Hill Collaboration Environmental Medicine with UMU, SU, ESF, VA
Advisory Council, Biotechnology Accelerator
Planning Team, Center of Excellence Biofuels Laboratory
Planning Team, Institute for Environmental Health and Environmental Medicine (2020 Challenge Grant)
Planning Team Onondaga Water research and Education Center

Rebecca J. Rundell
Head Curator, Roosevelt Wild Life Collections (development, planning and oversight of Collections); worked with Collections Manager Ron Giegerich to ensure preparation and curation of marine mammal specimens and other incoming specimens
Leadership committee of RWLS, contributing to e.g. Visioning and Strategic Planning
EFB Herbarium Remounting Project, co-supervisor (with Alex Weir)
Biotechnology Major Committee
Assisted in evaluating prospective Dence and Wang Awardees
Destiny USA, Traveling and Other Exhibit Explorations (donors, specimen acquisition, design, and implementation)
Roosevelt Wild Life Education and Research Center Planning and Architecture
Roosevelt Wild Life Station Collections Committee (leadership of Honorary Advisory Council members)

Samples of press in service of the College and Dept. this year (GLRI project with M.S. student Cody Gilbertson):
“A Big Effort to Save Tiny Snails,” Hypothesis, WNYC, 3 December 2015
http://www.wnyc.org/story/big-effort-save-tiny-species

“Stowaway Snail Helps Save Species from Extinction,” Scientific American, 6 November 2015
http://blogs.scientificamerican.com/extinction-countdown/stowaway-snail/

“Near-Extinct, Tiny Snail Coaxed into Captive Reproduction in Laboratory,” ScienceDaily, 28 September 2015
https://www.sciencedaily.com/releases/2015/09/150928153037.htm

“Snail Sex in SUNY ESF Lab Could Save endangered, Thumb-Sized Species,” Syracuse.com, 4 August 2015

Kimberly L. Schulz
EFB Course and Curriculum Assessment Committee Chair
Faculty mentor for Greg McGee, Beth Folta
Occasional participant on GPAC
Capital Planning Committee member
Participated in strategic planning meetings in September 2015
Environmental Science advisor and Curriculum Group Participant in Division of Environmental Science area of Watershed Science
EFB representative to the Water Resources Minor
Faculty advisor to the Nautilus Club (student marine science club)
Marine Science Minor coordinator
Member of AEC advisory board
Roosevelt Wild Life Station Scientist-in-Residence: Roosevelt Aquatic Ecologist
Coordinating effort to develop CIRTAS – Center for Integrated Research and Teaching in Aquatic Science, to find funding to develop a collaborative aquatic science experimental facility for teaching and research at ESF, and participating in efforts to further organize aquatics group in EFB

Stephen A. Teale
Promotion and Tenure Committee (member, Chair)

J. Scott Turner
Chair, Technology Committee.
Chair. Presidential Advisory Group: Building a Culture of Media at ESF.
Member. Executive Committee.

Alex Weir
Cranberry Lake Advisory Committee
Curator of EFB Herbaria
Active participant in EFB majors for Forest Health, Conservation Biology, and Environmental Biology
Member, Lowe-Wilcox, Zabel, and Morrell Award Committees

Christopher M. Whipps
EFB Disease Ecology/Epidemiology Search Committee (Oct2015-Apr2016). Chair: Christopher Whipps
ESF Institutional Animal Care and Use Committee (Aug 2011-present). Chair: Christopher Whipps
ESC Health and the Environment Curriculum Group Participant (Mar 2011-present)
ESF Academic Research Building Core Team (Apr 2010-present)
SUNY Center for Applied Microbiology (Feb 2013 – present) Director
Appendix H. Unfunded Service to Governmental Agencies, Public Interest Groups, etc.

Jonathan B. Cohen
Advisory board for the Goldenrod Foundation (private nonprofit)
Advisor to the U.S. Shorebird Conservation Plan (US Fish and Wildlife Service)
Mentor to 1 student, Authentic Science Research Program, Byram Hills High School, Armonk, NY
(project won the “Mianus River Gorge Ecology Award”)

Stewart A.W. Diemont
Municipality of San Cristobal de Las Casas, Chiapas, Mexico. Natural wastewater treatment plant system design and siting, rain water capture, stream and wetland restoration.
Village of Lacanja Chansayab, Chiapas, Mexico. Biocultural restoration project: Creating a Lacandon Maya field guide for educating children about their own traditional ecological knowledge.

Martin Dovciak
U.S. National Park Service. Environmental monitoring and modeling support for science-based conservation of forest vegetation along the Appalachian Trail from Georgia to Maine (Vegetation team PI).
Sierra de Alamos-Rio Cuchujaqui Biosphere Reserve, Mexico. Ecological monitoring and conservation of an endangered forest cycad, Dioon sonorense (informal advisor).
Shingle Shanty Preserve and Research Station, Adirondacks, NY. Vegetation monitoring (informal advisor).
Regular interaction with the public/answering of inquiries on plant ecology, taxonomy, global change, and sustainability.

John M. Farrell
USGS – contributions to their educational program including ESF student visits to the USGS Lake Ontario Biological Station, Oswego NY and the Tunison Laboratory, Cortland NY.
NY Chapter American Fisheries Society – Native Fishes Committee
Save The River, Inc. Clayton NY, Muskellunge Release Program
Thousand Islands Land Trust, events and land stewardship and research partnerships
Northeast Underwater Explorers (NEUE) Citizen science programing
Project Baseline, interview and video production
Muskies Inc., tours, presentations, research and management activities
Ducks Unlimited, proposal development, project management
USGS, employee evaluations, educational activities, research partnerships

Shannon L. Farrell
Working with TNC Tug Hill personnel to assist with development of grant proposal, to develop collaborative forest management plan and wildlife monitoring (working also with Greg McGee and Ralph Nyland).
CNY Ruffed Grouse Society. Habitat management project planning, Jan 2015- present.
Continued consultation following species listing decision after previous assistance listed below.
Summer 2014: Analysis of effects of proposed listing of the northern long-eared bat (NLEB) as federally Endangered on forestry, and drafting of comment letter to USFWS.
March 2015: Analysis of effects of threatened listing of northern long-eared bat (NLEB) and proposed 4-d rule implementation for forestry, and drafting of comment letter to USFWS.
Melissa K. Fierke
Serve on the City of Syracuse Emerald Ash Borer Task Force attending meetings with other collaborators, e.g., the Syracuse City Arborist, Cornell Cooperative Extension, Onondaga Director of the Environment. Answered questions from the public on insects/arthropods throughout the reporting period.

Elizabeth Folta
Rosamond Gifford Zoo, Education Committee 12/2010 – current
Friends of Beaver Lake, Board Member 1/2011 – current
Education Task Force Member 8/2011 – current
Future Planning Committee 4/2011 – current
Project Learning Tree Steering Committee (NY) 7/2011 – current
Leopold Education Project State Co-Coordinator 2011 (unofficial) – current (official)

Jacqueline L. Frair

James P. Gibbs
CUNY faculty promotion external review
On-going consultation with “COmMON” Foundation Holland: External Science Advisor for 5 year project focused on application of Groasis / Waterboxx Technology for ecosystem restoration and enhancing agricultural production in arid areas

Hyatt C. Green
Onondaga Lake Watershed Bacterial Trackdown Working Group

Thomas R. Horton
Scientific advisor – Central New York Mycological Society
Scientific advisory board – Mianus River Gorge Preserve

Robin W. Kimmerer
Neighbors of the Onondaga Nation
Great Law of Peace Education Center Initiative, Steering Committee
Haudenosaunee Environmental Task Force
Spring Creek Project for Nature, Philosophy and the Written Word (Senior Fellow)
Center for Nature and Humans, Senior Fellow
The Wild Center, Tupper Lake NY
Institute for Tribal Environmental Professionals, Flagstaff AZ

Donald J. Leopold
Co-tour leader for ESF team for Onondaga Lake boat tour, as part of “Capital for a Day”, September 2015 “The botanicals, water, and barrel effect” invited lecture on bus trip to NYC to celebrate Honeywell receiving the Thomas W. Keesee Jr. Conservation Award at the Metropolitan Club, November 2015.
Member, Board of Trustees, The Wetland Trust, Inc.
National Technical Committee for Wetland Vegetation, northeastern U.S. representative from academia to this US Army Corp of Engineers advisory committee, January 2007 to present.
Upper Susquehanna Coalition, consulting on various wetland issues
Frequent contributor, upon request, to the Syracuse Post-Standard
Frequently answer questions from city of Syracuse employees regarding city trees, park plantings, and green infrastructure projects
Numerous local and national TV and radio interviews including interviews on fall color, Gateway Building, green roof, drought, invasive species, allergy season, and native plant species

Karin E. Limburg
Member, technical working group on River Herring (for NOAA Fisheries and the Atlantic States Marine Fisheries Commission); includes serving on Habitat and Climate Change sub-committees
NOAA Fisheries, North Atlantic Regional Team (NART): Linking freshwater and ocean dynamics towards integrative ecosystem modeling: opportunities and challenges
Member, Native Fishes Committee, NY American Fisheries Society Chapter (helps the DEC)
Scientific advisor, Mohawk River Basin Program (NYSDEC)
Scientific advisor, Hudson River Estuary Program (habitat restoration)
Member, Conseil Scientifique (Science Advisory Board) for “LabEx COTE – Evolution, Adaptation and Governance of Continental-to-Coastal Ecosystems” – Bordeaux, France
Co-chair, Continental Margins Working Group (IMBER-LOICZ);
Global Ocean Oxygen Network (GO2NE) member (a program of UNESCO’s International Oceanographic Commission)
External reviewer for P&T (Assistant → Associate), University of Maryland
External examiner, doctoral dissertation, SOLEIL Synchrotron, Paris, France

Gregory G. McGee
Experiential Learning Charter School at Orenda Springs, Board of Trustees
NY DEC Statewide Riparian Assessment, Steering Committee
The Nature Conservancy, Central & Northern NY Chapter, Tug Hill Forest Properties Management Advisory Committee.

Lee A. Newman
Judge for International Genius Olympiad, SUNY Oswego, 16 June 2015
Multiple Roles for Clear Path for Veterans, Chittenango, NY
Strategic Planning Committee
Property Committee
Kitchen garden design, installation and maintenance
Natural Play area design
Director of Horticultural Therapy Program, Syracuse Veterans Administration Hospital
Director of Horticultural Therapy Program, Brokdale of Manlius, an Alzheimer care facility
Development of CERES program to bring food and nutritional information to veterans dealing with cancer
Consultant, New York City Parks

Dylan Parry
NY State Invasive Species Advisory Council

William A. Powell
Advisor to the NY chapter of The American Chestnut Foundation
Science advisory board member of the national American Chestnut Foundation. Chair of the 3BUR committee whose charge is to find ways to integrate biotechnology, biocontrol, and breeding programs.

Interviews leading to 38 (possibly more) popular press articles, blogs, radio and TV shows (there were 31 last year):
The Chestnut Project in the News links (5/14/15 – 5/10/16)
1. USDA Blog: Will Chestnuts Roast on an Open Fire Again Someday?
3. Staten Island Live: Is the American chestnut found on Staten Island?
4. Daily Orange: SUNY-ESF researchers look to restore American chestnut tree population
5. New Yorker: Unnatural Selection: What will it take to save the world’s reefs and forests?
6. 27East: Notes On The Long Island Natural History Conference: Restoring The American Chestnut
7. R&D Magazine: Restoring the American Chestnut
8. Headlines & Global News: Genetic Engineering Could Revive American Chestnut Trees
9. Business Insider: Genetic engineering could save an iconic American tree from extinction
10. GardenRant: GMO Trees
11. Phys.org: New genetically engineered American chestnut will help restore the decimated, iconic tree
12. The Conversation: New genetically engineered American chestnut will help restore the decimated, iconic tree
13. Our Little Acre: Roasting, Planting, and Restoring the American Chestnut
14. Concord Monitor: Chestnut trees planting a comeback?
15. TakePart: Here’s How to Crack the Ultimate Holiday Nut
17. Wall Street Journal: Readers Sound Off on Bears, Schools, Trees and More
18. News Channel 10: Near-extinction makes chestnuts a relic of Christmas' past
19. Plant Science Today: Chestnuts featured in #AdventBotany
20. Lohud: Two Westchester groups are helping to save the American chestnut tree
21. News flash: genetic engineering may save the American chestnut tree
22. Bay Journal: Back-cross American chestnut project raising hopes for tree’s restoration
23. Sierra Club Atlantic Chapter: The Mighty American Chestnut: New York conservationists lead epic tree restoration effort
24. Smithsonian: The Race to Save the World's Great Trees By Cloning Them
25. Sydney Morning Herald: A hole in the horizon
26. Genetic Literacy Project: Anti-GMO forces can slow train of technological progress but cannot derail it
27. Leader in American Chestnut Restoration To Receive ESF’s Feinestone Award
28. The Quiet Branches: Bringing back a forest
29. NY Times: Dead Forests and Living Memories
30. BIOTech Now: Could GMOs Save Endangered Plants and Animals?
31. Ensia: In the race to save species, GMOs are coming to nature
32. Oneonta Daily Star: Rebuilding our forests
33. Talking Biotech: Saving the American Chestnut; Lettuce History and Modern Improvement
34. Auburn Citizen: Eco Talk: Bringing back the American chestnut tree
35. NPR: Once And Future Nut: How Genetic Engineering May Bring Back Chestnuts
37. National Geographic: Can We Engineer an American Chestnut Revival?
Genetic Literacy Project: Wheat genes could help revive American chestnut

Rebecca J. Rundell
Representative-at-Large, Board of Directors. Natural Science Collections Alliance (part of the American Institute of Biological Sciences (AIBS)) (Term: 3 years beginning Fall 2014). [The NSC Alliance is a national organization that influences policies and resources for institutions that house collections (e.g. connecting to congress, NSF and other agencies.) Participated in Board of Directors meetings. Contributed to governmental advocacy, visioning, mission statement and strategic planning for the organization and represented university Collections, particularly small university Collections.

Kimberly L. Schulz
Upstate Freshwater Institute Board Member October 2011-current
Onondaga County Water Protection Scientific Advisory Board 2012-current
Mentoring of high school student (Asia Coulliard) in the North Syracuse School District Community Connection Mentor Program (professional development program)
Advised Skaneateles Lake Association subgroup on lake foam
Assisted C-OFOKLA in grant preparation for obtaining boat stewards and public outreach
New York State Climate Change Clearing House Sector Expert (volunteer)

J. Scott Turner
Member, Science Advisory Board, Cheetah Conservation Fund.
Member, Jury Panel Option Studio on Biosynthetic Robotoc Fabrication: Digital Handcraft and Weird Tectonics. Cornell University School of Architecture. 14 May 2016

Alex Weir
Continued Liaison with Central New York Mycological Society
Appendix I. Unfunded Service to Professional Societies and Organizations

Jonathan B. Cohen
The Waterbird Society, Chair of Conservation Committee
The Waterbird Society, Elected Councilor

Martin Dovciak
International Association for Vegetation Science (IAVS)- Editorial Board Member
New York Climate Change Science Clearinghouse (NYCCSC)- Sector Expert: Agriculture and Forestry
Mountain Research Initiative- Expert Database Member
New York Invasive Species Research Institute- Expert Database Member

John M. Farrell
American Fisheries Society (AFS), NY Chapter AFS, International Association of Great Lakes Researchers

Shannon L. Farrell
Member of Special Recognition and Honorary Membership Committee, The Wildlife Society National Chapter
Member of Early Career Professionals working group, The Wildlife Society National Chapter
Planned symposium for early career professionals for Fall 2015 Annual Meeting.
Service on Shale Development Technical Committee, The Wildlife Society National Chapter

James P. Gibbs
Member of the General Assembly, Charles Darwin Foundation (elected, term ended Oct 2015)
Board member, The Wetland Trust
Board member, Altai Assistance Project
Board member, Nine Mile Creek Conservation Council

Thomas R. Horton

Karin E. Limburg
American Fisheries Society, Estuaries Section president (2015-2017)
Co-chaired session at AFS 2015 meeting on “Frontiers in Otolith Chemistry Research”
American Fisheries Society, Governing Board member
Board member, Hudson River Environmental Society
Co-organized/co-chaired session on “Causes and Consequences of Marine Hypoxia” at the Annual Science Conference of the International Council for the Exploration of the Seas (ICES)
Co-organized/co-chaired two linked sessions at the 100th anniversary meeting of the Ecological Society of America; one was on population stabilization and the other was on ecological economics (related to population stabilization)

Stacy A. McNulty
Secretary, Organization of Biological Field Stations
Associate Editor, Adirondack Journal of Environmental Studies, Adirondack Research Consortium
Board Member, Northern New York Audubon

Lee A. Newman
Association of Environmental Health Sciences – Scientific Advisory Board, organizer for Annual Conference held in Amherst, MA, October, 2015 and to be held in October 2016
International Phytotechnology Society – Founding President; Chair of Gordon Award Committee, Chair of Educational Committee, Chair of Outstanding Professional Member Committee, Member of Organizing Committee for Annual Conference in Manhattan Kansas; Organizing Committee for Annual Conference held in Manhattan, Kansas, 2015; Organizing Committee for Annual Conference to be held in Hangzhou, China, 2016.

Chair of Organizing Committee for Biotechnology Research Symposium to be held in May 2016 in Syracuse, NY and to be held in May 2017.

**Dylan Parry**
Member, New York State Invasive Species Advisory Council
Member, New York Forest Health Advisory Group. Share information, collaborate and coordinate activities of academic and government agencies involving major threats to the health of New York’s forests.

**Rebecca J. Rundell**
Member and Specialist, IUCN (International Union for Conservation of Nature) Species Survival Commission, Molluscs

**Christopher M. Whipps**
Appendix J. Funded Service to Governmental Agencies, Industrial and Commercial Groups, Public Interest Groups, etc.

Martin Dovciak
New York State DEC, Cornell Cooperative Extension. Contributing to the development of public outreach and citizen science component of the project on the impacts of deer on forests of New York State (ongoing).

John M. Farrell
DEC – numerous activities related to long-term research partnership
Great Lakes Fisheries Commission – contributed reports to the GLFC Lake Ontario Report and information towards the annual meeting.
USFWS – Research and monitoring activities related to Fish Habitat Conservation Strategy and habitat enhancement projects.

Shannon L. Farrell
Lesser Prairie Chicken conservation planning: Lead on science committee drafting of CCAA/HCP and Habitat Exchange. Multiple stakeholders including USFWS, Environmental Defense Fund, and Oil and Gas Industry partners.
Greater Sage Grouse conservation planning. Requested reviewer for Colorado Conservation Plan by USFWS and EDF.
Greater Sage Grouse conservation planning. Requested to meet with Deputy Secretary of the Interior (Land and Minerals) to provide guidance for Greater Sage Grouse Conservation Planning.

Melissa K. Fierke
Reviewed three chapters and edited/developed questions for Pearson’s Campbell Biology textbook.

James P. Gibbs
General Electric Corporation (on-going consultation regarding wildlife research on Upper Hudson River)
Janice Parker Landscape Architects (on-going consultation regarding property restoration, Southampton, Long Island)
Galapagos Conservancy (on-going consultation as co-leader of Galapagos Conservancy’s Giant Tortoise Restoration Initiative and as Galapagos Conservancy’s Adjunct Scientist)

Thomas R. Horton
Project at the Albany Pine Bush Preserve to help with pine restoration effort.

Robin W. Kimmerer
Consultant/Collaborator: Salish Kootenai Tribal College NASA Grant: Living Landscapes."

Donald J. Leopold
In June 2015, James Gibbs and I led a bioblitz on a private estate in Charlottesville, VA, which generated funds for the RWLS, and gave a group of EFB graduate students and alumni an unique, paid, professional opportunity.
Project (with James Gibbs) on Long Island for Janice Parker Landscape Architects, on restoring a degraded parcel of land after we made a biological assessment.
Stacy A McNulty
Great South Woods public participation meetings, multiple locations
NSF-funded Organization of Biological Field Stations Site Review for University of Vermont Mount Mansfield Science Center

Rebecca J. Rundell
Sotheby’s. Consult on conservation status (CITES, etc.) for art objects and artifacts that include invertebrates

Kimberly L. Schulz
National Science Foundation Division of Environmental Biology Panelist, 4-6 November
Appendix K. Presentations to the Public

Jonathan B. Cohen
Darrah A, Cohen J. Decision support population modeling for Piping Plover recovery. MA coastal waterbird cooperator's meeting. Barnstable, MA. August 2015. ~100 attendees.

Stewart A.W. Diemont

Martin Dovciak
Cornell University, Ithaca. “The spread and impact of invasive plant species in forested landscapes under changing climate”. Cornell Cooperative Extension Inservice event, Climate Change & Invasive Species session (Nov. 3, 2015, ~50 attendees)

John M. Farrell
Northeast Underwater Explorers (NEUE), training for citizen science data collection for TIBS (10 participants)
Project Baseline & Northeast Underwater Explorers (NEUE), interview and assistance with development of program education video http://www.projectbaseline.org/project-baseline-volunteer-shares-project-new-york-dive-show
Thousand Islands Land Trust, Ichthyologist for a Day – led children ages 5-12 and adults through a series of modules on fish and river ecology on the St. Lawrence River (40 participants)
Thousand Islands Biological Station, numerous tours to community members throughout the season (~100 participants),
Thousand Islands Land Trust Zenda Farms Picnic, Provided live fish and poster displays as part of community event (June 2015; ~250 attendees)
Thousand Islands Land Trust, Grindstone Island Informational Session, gave presentation and answered questions. (20 participants)
Farrell, J. M. 2015. Long-term Research and Management at the Thousand Islands Biological Station. Fish Community Objectives, DEC Public Information Meeting, Clayton, NY (30 participants)
Farrell, J. M. 2015. Long-term Research and Management at the Thousand Islands Biological Station. Fish Community Objectives, DEC Public Information Meeting, Ogdensburg, NY (30 participants)
Shannon L. Farrell
Public birding walk [sponsored/organized by Cazenovia Preservation Foundation 5/28/2016 (≈12 attendees)
Presentation to Cicero Girl Scouts about Endangered Species and Habitat Loss 5/2/2016 (≈ 12 attendees)
Television interview for local news on white pelican on Lake Onondaga Fall 2015
Interviewed and quoted for Syracuse.com article on White Pelicans fall 2015
Birding workshops during Fall Field Days on campus, Fall 2015
Public talk on endangered species research and management at Huntington 30 July

Melissa K. Fierke
Southeastern Neighborhood Association: Ticks and Tick-borne Disease in Onondaga County. April 2016. Syracuse NY. ~70 attendees (including Syracuse Mayor Miner).

Jacqueline L. Frair

Oneida County Sportsmans Federation, New York Mills, NY (Apr 2016) – 80 people

James P. Gibbs
“Integrating Science and Management to Advance Giant Tortoise Conservation in Galapagos, Ecuador.”
Redpath Museum, McGill University, Montreal, QC, Canada, Feb 25, 2015 (40 attendees)

Thomas R. Horton
Horton TR. Vince O’Neil Mushroom Festival at Beaver Lake Nature Center with Central New York Mycological Society and Mid-York Mycological Society. 9/20/2015. 100+ (mushroom walk had about 20)
Horton TR. Interviewed by Andrew Donovan at WSYR News Channel 9 at the site of a large fire in Kirkville, NY. The fire started on Friday May 20 and the interview occurred on Tuesday, May 24. The piece opened the 11:00 pm news on Tuesday night and reran at least once later that week. The focus of the piece was on issues around fire ecology, including how the plant and animal community would recover. It was posted on the ESF Facebook cite and had 124 likes and 37 shares. Total audience is unknown, but the number of acquaintances who told me they saw the piece on the news suggests a decent viewership

Robin W. Kimmerer
“Restoration and Reciprocity” Wells College Sustainability Symposium. September 21, 2015 attendance: 80
“Indigenous Knowledge in a time of climate crisis” Basic Call to Consciousness Symposium. Onondaga Nation. September 24, 2015 Attendance: 100
“Braiding Sweetgrass” September 26, 2105 Earth Partnership, University of Wisconsin, Madison
“Learning the Grammar of Animacy” Blue Mountain Center Residency. October 18, 2015 attendance: 30
“The Honorable Harvest: indigenous knowledge and Biodiversity Conservation” University of Vermont. November 3, 2015 attendance: 125
“Reciprocity and Restoration” University of Vermont November 4, 2015 attendance: 100
“Braiding Sweetgrass” Burlington, VT. The Commons. Attendance: 40
“Renewing the web of reciprocity: Indigenous Food Systems and Biodiversity” Keynote. Women’s Food and Agriculture Network Annual Meeting Dubuque Iowa. November 7, 2015 Attendance: 300
“The Honorable Harvest” Keynote Western New York Land Trust, The Albright Knox Gallery Buffalo, New York November 10, 2105 Attendance: 300
“The Honorable Harvest” SUNY Oswego Keynote Annual Lecture. Oswego, NY attendance: 20
“Language and Sustainability: The Grammar of Animacy” Culture, Humanities and Environment Colloquium, University of Wisconsin, Madison 12/1/15 Attendance: 35
“The Honorable Harvest: Indigenous Knowledge for Biodiversity Conservation” 12/2/15 University of Wisconsin, Madison Attendance 80
“Braiding Sweetgrass” Onondaga Historical Association, Skonoh Center, Syracuse New York Attendance: 30
“The Honorable Harvest” The Wild Center, Tupper Lake New York January 9, 2016 attendance: 90
“The Honorable Harvest: Indigenous Knowledge for Biodiversity Conservation’ University of Michigan, Ann Arbor, MI Feb 11, 2016
“Indigenous Wisdom for Restoration” Keynote Wisconsin Wetlands Association Annual Meeting Green Bay Wisconsin Attendance: 400
“Restoration and Reciprocity: finding common ground between indigenous and scientific knowledges” University of Wisconsin Botany Colloquium, Honorary Graduate Speaker. February 25. 2016 attendance: 50
“The Grammar of Animacy” Northwestern University, Chicago Illinois February 26, 2016 attendance: 125
“The Honorable Harvest: Indigenous Knowledge and Biodiversity Conservation” The Natural History Institute, Prescott College, Prescott Arizona attendance: 100
“Plants as Teachers in a Time of Climate Crisis” Keynote “Re-igniting the Sacred Fire” Indigenous Environmental Studies Trent University, Peterborough, Ontario April 22 2016
“Indigenous Land Management” The Christensen Fund, San Francisco, CA April 29, 2016 Attendance: 40
“The Honorable Harvest” The Sierra Club, Atlantic Chapter Syracuse New York attendance: 50

Interviews: I’ve done about 10 print and audio interviews this year which are another type of public service presentation. However, I list here only those which require significant preparation of a presentation for the interview. Audience estimates are from media outlets

“Two Ways of Knowing: Robin Wall Kimmerer on Scientific and Native Ways of Knowing the Natural world” by Leath Tonino in The Sun magazine April 2016 issue, #484. Online version: http://thesunmagazine.org/issues/484/two_ways_of_knowing estimated audience: 20,000
“The Intelligence of All Things: an interview with Robin Wall Kimmerer” On Being with Krista Tippett
estimated audience: >100,000
“Talking to Plants” an interview with Robin Wall Kimmerer on To the Best of Our Knowledge” with
“Indigenous Knowledge for Healing the Earth” an interview with Robin Wall Kimmerer “Unlearn and
Rewild” podcast. http://www.unlearnandrewild.org/listenhd/robin-wall-kimmerer-on-indigenous-
knowledge-for-earth-healing

Donald J. Leopold
Father’s Day nature walk, Clark Reservation State Park, June 2015, about 40 people in attendance
Gateway Center green roof and campus landscape tour, 2015 NYS Releaf Conference, July 2015,
Syracuse, about 40 people in attendance
Oakwood Cemetery tree identification, 2015 NYS Releaf Conference, July 2015, Syracuse, about 40
people in attendance
Native plant alternatives to planting invasive plant species, webinar for New York Invasive Species
Research Institute, July 2015, 67 people logged on.
Native plants for sustainable landscapes, 7th Annual Midwest Native Plant Conference, July 2015,
Dayton, OH (keynote + book signing), about 200 people in attendance
The promise of native plants and their communities for restoring degraded landscapes and creating
sustainable green systems, New York Botanical Garden Native Plants Summit, NYBG, New York
City, September 2015, about 500 people in attendance (auditorium sold out)
Terrestrial orchids of the New York and New Jersey, North American Rock Garden Society, Watnong
Chapter, November 2015, Frelinghuysen Arboretum, Morristown, NJ, about 80 people in attendance
Terrestrial orchids of New York, Syracuse Botanical Club, December 2015, about 20 people in
attendance
Native plants for sustainable landscapes, Cornell Cooperative Extension Erie County Master Gardeners
Education Day, March 2016, Buffalo, about 150 people in attendance
Invasive species of upstate NY, Syracuse Rose Society, March 2016, Syracuse, about 35 people in
attendance
Tree identification, ecology, and natural history (walk), Cornell Cooperative Extension of Onondaga
County, Syracuse, April 2016, about 30 people in attendance (Oakwood Cemetery, Syracuse).
Native plants for sustainable landscapes, Garden Club of America Zone IV annual meeting, May 2016,
Princeton, NY, about 125 people in attendance
The Importance of Growing Native Plants, Chittenango Garden Club, May 2016, Chittenango, about 50
people in attendance
Nature walk, Fiddler’s Green, May 2016, Jamesville
Plants of Oakwood Cemetery (walk), Oakwood Cemetery, May 2016, about 50 people in attendance

Karin E. Limburg
Dale Travis Lecture, “The Future of Fisheries: Choices, Decisions, and the Role of the Arts,” Halloween,
2015 (attendance ca. 150?)
Keynote speaker, Mohawk Watershed Symposium, March 18, 2016 (attendance ca. 100)

Gregory G. McGee
Led Bioblitz group at April 23 event at Skaneateles Conservation Area, as part of Conservation Biology
capstone project, ~10 in plant group.

Stacy A. McNulty
Master Gardener hike – July 10, Huntington Wildlife Forest – 8
Newcomb Youth Program nature field trip – July 23, Huntington Wildlife Forest - 9
Wetland Detective training (EPA project) – April 23, Adk Interpretive Center – 9
Wetland Detective training (EPA project) – May 7, Adk Interpretive Center – 5

Lee A. Newman
Phytoremediation: Using plants to solve environmental problems. New York City Parks8 January 2016. Approximately 75 attending

Gordon Paterson

William A. Powell

Neil H. Ringler
Ringler, N. H. Update on the Biota and Research on Onondaga Lake, NY. Isaak Walton League of CNY. Syracuse NY. May 7, 2016. ca 12 attending

Rebecca J. Rundell
http://darwinday.org/event/suny-esf-evolution-course-poster-viewing-for-darwin-wallace-day/2016-02-17/

Kimberly L. Schulz
The Finger Lakes conference (presentation listed above) was open to the public; 12 November 2015; ~100 people

J. Scott Turner
Appendix L. Miscellaneous Publications and Outreach Activities and Materials

Martin Dovciak

Thomas R. Horton

Robin W. Kimmerer

Karin E. Limburg

Mark V. Lomolino

Gregory G. McGee

Stacy A. McNulty

Gordon Paterson
William A. Powell
Powell, W.A. New genetically engineered American chestnut will help restore the decimated iconic tree.
The Conversation. 1/19/16.
20,152 readers (top ESF Conversation article), Facebook: 1.3K posts, twitter posts: 245, linkin posts: 141

Rebecca J. Rundell
Appendix M. Foreign Travel

Stewart A.W. Diemont
Chiapas, Mexico, various locations, July 5 – August 29, 2015. NSF-supported research on traditional ecological knowledge (TEK) of the Maya, working with doctoral students Tomek Falkowski. Taught ESF course EFB 496/796 Restoring Ecosystems: Principles and Practice August 18 – 28, 2015 with 13 students (11 undergraduate students and 2 graduate students). Chiapas, Mexico. Travelled to Ottawa, Canada with Emanuel Carter (Department of Landscape Architecture) to meet with representatives from Vitoria-Gasteiz, the 2012 European Union Green City, to explore teaching, research, and service collaboration.

Martin Dovciak
Western Carpathians and Technical University in Zvolen, Slovakia (Aug. 5-15, 2015). Collaborative Research: Forest and forest-grassland ecotone dynamics.

Elizabeth Folta
Nicaragua (multiple locations), March 10-18, 2016, Ecotourism Abroad course that worked with Comunidad Connect (non-profit based out of Nicaragua). We toured ecotourism sites and conducted service learning projects for a women’s cooperative in the village of Sontule.

Jacqueline L. Frair
Winnipeg, Manitoba, October 2015, The Wildlife Society Annual Conference Churchill, Manitoba, October 2015, Churchill Northern Studies Centre – polar bear learning trip

James P. Gibbs
Galapagos, Nov 11 Dec 2 (coordinate hybrid tortoise project on Volcan Wolf, participate in horizon scanning workshop) Mexico Feb 1-5 (serve on External Evaluation Committee of INECOL, Xalapa) Canada Feb 25 (lecture)

Karin E. Limburg
Copenhagen, Denmark, September 2015 to attend ICES Annual Science Conference (ICES = International Council for the Exploration of the Seas), where I chaired a session I co-organized Paris, France, September 2015, to serve as external examiner on PhD defense Copenhagen, Denmark, Lund, Sweden, and Lysekil, Sweden May 2016, to work with various colleagues as part of my being a visiting professor at Lund U. and SLU

Stacy A. McNulty

Gordon Paterson
Commonwealth of Dominica, March 10 – 21, 2016, co-teach Tropical Ecology (EFB523) field course with Dr. Donald Stewart. Windsor, Ontario CANADA, October 1-3rd 2016. Travel for invited seminar. Puerto Morelos Mexico; Editorial Board Meeting, Bulletin of Environmental Contamination and Toxicology, August 26-28th 2016

Kimberly L. Schulz
Stephen A. Teale
Charles Darwin Research Station, Puerto Ayora, Galapagos, Ecuador, 4-23 March, 2016 for field work.

J. Scott Turner
Namibia. March 2016. To conduct field research

Alex Weir
Ireland, May 2016 – overseas field trip with 8 EFB students
Appendix N. Theses and Dissertations completed  
(i.e., all requirements met and degree awarded)

M.S. Theses
Afelumo, Oluwafunmilayo. The effects of herbicide safeners on nickel toxicity in corn (Newman)
Alger, Katrina. Lymphoproliferative disease virus (LPDV) in wild turkeys (*Meleagris gallopavo*) in New York State: Diagnostic methods, prevalence, and spatial distribution of a newly discovered pathogen (Whipps)
Bader, G.L. Habitat characteristics and mycorrhizal fungi associated with extraordinary populations of native orchid species and *Pyrola asarifolia* (Ericaceae) on a mine tailings wetland in northern New York (Leopold).
Burnham, Ann. The development and application of a fish-based index of biotic integrity for New York State (Ringler)
DiRado, Justin. An ecological approach to Atlantic salmon restoration in central New York (Ringler)
Miano, A. M. Invasive round goby diet patterns and egg predation on broadcast spawning fishes in upper St. Lawrence River coastal habitats (J. Farrell).
Mount, Sarah. Searching for silver: An examination of the physical and environmental characteristics of maturing American eels (Limburg).
Powers, Christopher. Atlantic salmon restoration in central New York: A bioenergetics analysis of climate change implications and investigation of juvenile foraging patterns (Ringler)
Rosamilia, Brianna. Perceptions of bioblitz organizers and participants on event-related goals, interactions, and motivations: A way to understand how a bioblitz contributes to environmental education (Folta)
Morgan Smith, Morgan. Determining the audience at Beaver Lake Nature Center: Who is attending the center and how are they using it? (Folta)
Saldivar Bellassai, Silvia. Status and threats to persistence of the Chacoan peccary (*Catagonus wagneri*) in the Defensores Del Chaco National Park, Paraguay (Frair)
Smith, Zachary. A temporal and comparative analysis of the benthic macroinvertebrate fauna in a recovering perturbed ecosystem (Onondaga Lake, NY) (Ringler)

Ph.D. Dissertations
Foelker, Christopher. Biotic resistance to *Sirex noctilio* across multiple spatial scales (Fierke)
Gillette, Jacob. Investigating mixotrophy: A multilevel study of phytoplankton which function as both producers and consumers (Stewart, Teece)
Goldmann, Lauren. Investigations of position specificity and the molecular phylogeny of the Laboulbeniomycetes (Weir).
Kang, Phil-Goo. No title. (Mitchell)
Oakes, Allison. An investigation of micropropagation techniques for American Chestnut. (Powell and Maynard)
Wason, III., Jay Ward, Environmental controls on forest tree species growth and distributions along elevation gradients in the northeastern United States (Dovciak)
Appendix O. MPS students who completed degree requirements

Boisvert, Trinity. A recounting of my field assistant internship at the New York Natural Heritage Program. (Kimmerer)

Huffman, Kelly. Environmental determinants of gender ratio in Northern Pike (*Esox lucius* L.) (J. Farrell and Whipps)

Johnson, James K. (Leopold)

Lafaver, Zachary. (Schulz)

Miniscalco, Emma. Please touch: Three projects for sensory-based learning at the U.S. National Arboretum (Folta, Kimmerer)

Nicks, Stephanie. Creation of an interpretive sign emphasizing the importance of acknowledging and understanding the impact of invasive species, specifically emerald ash borer, in the Town of DeWitt (Fierke and Folta).

Osterhoudt, Logan. (Rundell)

Schlueter, Scott. Restoration of Lake Sturgeon in the Oswegatchie River (J. Farrell).

Wason, Samantha. (Leopold)
Appendix P. Faculty and Student Awards

FACULTY – DEPARTMENT, COLLEGE, AND SUNY RECOGNITION

Stewart A. Diemont  ESF College Foundation Award for Exceptional Achievement in Teaching
James P. Gibbs  SUNY Chancellor’s Award for Excellence in Scholarship and Creative Activities
Lee A. Newman  SUNY-ESF President’s Award for Community Service

FACULTY – REGIONAL, NATIONAL AND INTERNATIONAL RECOGNITION

A. Darrah and J. Cohen  Scott Melvin Award for Most Valuable Contribution to Applied Piping Plover Conservation. Atlantic Coast Piping Plover/Least Tern Workshop
Danilo D. Fernando  2016 Jewett Prize, The Arnold Arboretum of Harvard University
Jacqueline L. Frair  USFS Wings Across the America Research Partnership Award
Karim E. Limburg  Visiting Professor, Department of Aquatic Resources, Swedish University of Agricultural Sciences (SLU); 5/2015 – 4/2018.
Karim E. Limburg  Lise Meitner Visiting Professor, Division of Nuclear Physics, Dept. of Physics, Lund University; 11/2015 – 10/2018.
Rebecca Rundell  Research Associate, Paleontological Research Institution, Ithaca, New York (3-yr term beginning January 2015)
Rebecca Rundell  Research Associate, Carnegie Museum of Natural History, Pittsburgh, PA

GRADUATE STUDENTS – DEPARTMENT AND COLLEGE RECOGNITION

Katrina E. Alger  Betty Moore Chamberlaine Memorial Award
Dana M. Brennan  John and Etta Simeone Scholarship
Vernon C. Coffey  Robert A. Zabel Endowed Scholarship
Cortnew M. D’Angelo  Robert A. Zabel Endowed Scholarship
Thomas M. Evans  EFB Outstanding Doctoral Student
Hajar Faal-Mohammad-Ali  Silverborg Memorial Scholarship
Laura E. Hansen  Gerald Lanier Memorial
Patricia J. Kaishian  Josiah L. Lowe-Hugh E. Wilcox Graduate Scholarship
Kristen R. Haynes  Edwin H. Ketchledge Scholarship
Chelsea J. Jahant-Miller  John and Etta Simeone Scholarship
Christopher C. Nack  Wilford Dence Scholarship
Alex Petzke  Maurice and Annette Alexander Wetlands Research Award
Taylor R. Patterson  Josiah L. Lowe-Hugh E. Wilcox Graduate Scholarship
Charles W. Robinson, Jr.  Maurice and Annette Alexander Wetlands Research Award
Michael R. Whalen  Dr. Samuel Grober ’38 Graduate Fellowship
Giuseppe Tumminello  Leroy C. Stegeman Endowment in Invertebrate Ecology
Giuseppe Tumminello  Gerald Lanier Memorial

GRADUATE STUDENTS – REGIONAL AND NATIONAL RECOGNITION

Melissa Althouse  American Ornithologists’ Union Membership Award
Adam Bleau  CNY Wildfowlers Roy Glahn Scholarship
David Bullis  Ernst Mayr Systematics Grant from Museum of Comparative Zoology, Harvard
Carolyn Chang  Best Student Presentation, American Fisheries Society, Fish Health Section Annual Meeting
Carolyn Chang  Postgraduate Scholarship, Natural Sciences and Engineering Research Council of Canada
Tiffany Deater  1st place, Experimental Film Category, SUNY Film Festival
Justin DiRado  Best Student Paper Award, Annual NYS AFS Annual Meeting
Justin Droke  CNY Wildfowlers Roy Glahn Scholarship
Jessica Fletcher  Edna Bailey Sussman Foundation Fellowship
<table>
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<tr>
<th>Name</th>
<th>Award</th>
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<tbody>
<tr>
<td>Kristen Haynes</td>
<td>NY Flora Association Research Award</td>
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<td>Wendy Leuenberger</td>
<td>Edna Bailey Sussman Foundation Fellowship + Exceptional Merit award</td>
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<tr>
<td>Toby Liss</td>
<td>Edna Bailey Sussman Foundation Fellowship + Special Merit award</td>
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<tr>
<td>Christopher C. Nack</td>
<td>Hudson River Foundation Mark Bain Graduate Fellowship</td>
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<td>Leah Nagel</td>
<td>Edna Bailey Sussman Foundation Fellowship</td>
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<tr>
<td>Andrew Newhouse</td>
<td>Best Poster Award, Schatz Tree Genetics Colloquium</td>
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<tr>
<td>Rose Osborne</td>
<td>Conchologists of America Research Grant</td>
</tr>
<tr>
<td>Amanda Pachomski</td>
<td>Graduate Travel Award, Spatial and Telemetry Working Group, TWS</td>
</tr>
<tr>
<td>Taylor Patterson</td>
<td>Edna Bailey Sussman Foundation Fellowship</td>
</tr>
<tr>
<td>Carrianne Pershyn</td>
<td>Edna Bailey Sussman Foundation Fellowship</td>
</tr>
<tr>
<td>Alex Petke</td>
<td>NY Flora Association Research Award</td>
</tr>
<tr>
<td>Paul Picciano</td>
<td>Edna Bailey Sussman Foundation Fellowship</td>
</tr>
<tr>
<td>Margaret Roberts</td>
<td>Edna Bailey Sussman Foundation Fellowship</td>
</tr>
<tr>
<td>Charles Robinson</td>
<td>Edna Bailey Sussman Foundation Fellowship</td>
</tr>
<tr>
<td>Charles Robinson</td>
<td>Theodore Gordon Flyfishers Founders Fund Scholarship</td>
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<tr>
<td>Nicole Saavedra</td>
<td>Edna Bailey Sussman Foundation Fellowship</td>
</tr>
<tr>
<td>Michelle Stantial</td>
<td>Edna Bailey Sussman Foundation Fellowship</td>
</tr>
<tr>
<td>Michael Whalen</td>
<td>Edna Bailey Sussman Foundation Fellowship</td>
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</tbody>
</table>

**UNDERGRADUATE STUDENTS – DEPARTMENT, COLLEGE, AND SUNY RECOGNITION**

<table>
<thead>
<tr>
<th>Name</th>
<th>Award</th>
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</thead>
<tbody>
<tr>
<td>Sarah J. Hindle</td>
<td>Chun-Juan K. Wang Honor Award</td>
</tr>
<tr>
<td>Margaret R. Foley</td>
<td>Phyllis Roskin Memorial Award</td>
</tr>
<tr>
<td>Margaret R. Foley</td>
<td>SUNY Chancellor’s Award for Student Excellence</td>
</tr>
<tr>
<td>Peter Daniel Han</td>
<td>Distinguished Biology Scholar Award – Conservation Biology</td>
</tr>
<tr>
<td>Julia Hammel Hart</td>
<td>Distinguished Biology Scholar Award – Forest Health</td>
</tr>
<tr>
<td>Nicole E. Madden</td>
<td>Joseph &amp; Ruth Hasenstab Memorial Scholarship</td>
</tr>
<tr>
<td>Seamus Colin McKenney</td>
<td>Distinguished Biology Scholar Award – Biotechnology</td>
</tr>
<tr>
<td>Jay Richard Palumbo</td>
<td>Distinguished Biology Scholar Award – Aquatic &amp; Fisheries Science</td>
</tr>
<tr>
<td>Jalina Christiana Pannafino</td>
<td>Distinguished Biology Scholar Award – Environmental Biology</td>
</tr>
<tr>
<td>Charlotte A. Rozanski</td>
<td>Ralph T. King Memorial Award</td>
</tr>
<tr>
<td>Kimberly Susana Savides</td>
<td>Distinguished Biology Scholar Award – Wildlife Science</td>
</tr>
<tr>
<td>Juliann Marie Schneider</td>
<td>Distinguished Biology Scholar Award – Environmental Education and Interpretation</td>
</tr>
<tr>
<td>Allison M. Smith</td>
<td>Guy Baldassarre Memorial Scholarship</td>
</tr>
<tr>
<td>Seamus Colin McKenney</td>
<td>Distinguished Biology Scholar Award – All Majors</td>
</tr>
<tr>
<td>Benjamin Zink</td>
<td>Patricia ’78 and Jeff ’77 Morrell Scholarship</td>
</tr>
<tr>
<td>Fareya S. Zubair</td>
<td>Student Speaker at ESF Graduation, mAY</td>
</tr>
<tr>
<td>Fareya S. Zubair</td>
<td>SUNY Chancellor’s Award for Student Excellence</td>
</tr>
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**UNDERGRADUATE STUDENTS – REGIONAL & NATIONAL RECOGNITION**

<table>
<thead>
<tr>
<th>Name</th>
<th>Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESF Chapter TWS</td>
<td>Regional Champion, Northeast Conclave Quiz Bowl. Members: Allison Smith, Kim Savides, Heather Swenson, and James Lee</td>
</tr>
<tr>
<td>Elyse Iemola</td>
<td>Best Undergraduate Poster, 7th North American Duck Symposium</td>
</tr>
<tr>
<td>Allison Smith</td>
<td>First place, photography award, “Animals” and “People in Nature” categories</td>
</tr>
</tbody>
</table>
Appendix Q. New York Natural Heritage Program
2015-16 Summary, Publications, Presentations and Service
(submitted by D.J. Evans, Director)

The New York Natural Heritage Program (NYNHP) databases are the primary source of information on biodiversity used in environmental review and land management planning by state agencies in New York and one of the important inputs in setting priorities for conservation organizations. We currently manage 13,500 records of rare species and natural communities in our central Biotics database. These records are an accumulation of 30 years of field work and processing of data collected by our program, NYS Department of Environmental Conservation (DEC) biologists, other agency biologists, NGO scientists, researchers and their students, and naturalists across the state.

Our base funding comes from a Memorandum of Understanding (MOU) with DEC’s Division of Fish and Wildlife. This five-year agreement that funds program administration, database development, responses to information requests, conservation status ranking for animal species, sharing the data with other agencies and partners, and a part-time position for the processing, mapping, and transcription of data on rare animals. NYNHP base funding does not include a field work component, so keeping thousands of records current when we can only revisit populations opportunistically, where other government grants and contracts take us, is an ongoing challenge. Our base funding also does not include work on rare plants, which has been an ongoing challenge since the Great Recession when the Environmental Protection Fund (EPF) dramatically decreased and many state programs were cut, including our botany program. However, following a significant jump in EPF funding in 2015-2016 we have been working with Executive and Program staff in DEC’s Division of Lands and Forests to re-establish our botany program and we’re happy to report that it is once again fully funded!

Our first order of botany business is to update the rare plant status list for New York, which hasn’t been done since 2010! Second order of business is developing a schedule of monitoring and updating for the 6,000 rare plant records in our databases. We hope to find more ways to involve ESF students and faculty in our rare plant monitoring efforts. For example, this year we were able to work with DEC to get pass-through Section 6 funds to work on two federally listed plants, American hart’s-tongue fern (Asplenium scolopendrium var. americanum) and seabeach amaranth (Amaranthus pumilis). The Hart’s-tongue work is being undertaken by Dr. Danny Fernando and graduate student Jason Weber-Townsend.

For nearly 10 years we’ve been receiving base funding from the EPF (through DEC) for work on invasive species data and collaborating with DEC and neighboring states on an invasive species database, iMapInvasives (iMapInvasives.org). We are currently serving nearly 5000 users across New York and iMapInvasives has been adopted by natural heritage programs in nine states and one province of Canada. This year, we’ve been busy scoping out the cost of an upgrade/redesign for the database so that it is better equipped to integrate rapidly growing mobile, tablet, and online technology. We hope future upgrades will include more flexible data collection and storage options that will continue to attract users interested in using a consistent and widely accessible platform for invasive species tracking and management. Each summer we hire an ESF intern to assist with iMapInvasives work here in Albany and this year we are happy to have Sundas Rehman on staff. For more information on these internships contact NYNHP’s Meg Wilkinson or Jennifer Dean.
Research and inventory highlights on rare species and natural communities over the past year include surveys at several State Forests and State Parks through ongoing MOUs with DEC’s Division of Lands and Forests and New York State Office of Parks, Recreation and Historic Preservation (OPRHP). Highlights of surveys in state parks and state forests this past year included discovery of the rare none-spotted ladybug at Napeague State Park on Long Island and discovery of an extremely rare orchid of alvar habitats, Great Plains lady tress (*Spiranthes magnicamporum*), along the St. Lawrence River at Robert Moses State Park. Additional suitable habitat for the orchid (though no orchids) was observed at Westcott Beach State Park along Eastern Lake Ontario, so we plan to continue to monitor this site in the future. The Great Plains Lady Tress was first discovered in New York in 2014 and we have been seeking more populations since. In addition to revisiting and updating dozens of known locations, highlights of our 2015 field season in state forests included finding the rare Appalachian Tiger Beetle (*Cicindela ancisconsensis*) and a damselfly of conservation concern, Blue-tipped Dancer (*Argia tibialis*), at Keshequa Creek and Sonya State Forests. We also discovered Eastern Pearlshells (*Margaritifera margaritifera*), a state rare mussel, at Orebed Creek State Forest, Degrasse State Forest, and Whippoorwill Corners State Forest!

Over the past year we have been working with staff in the Division of Lands and Forests to expand our inventory efforts on DEC-managed land by undertaking surveys within the Adirondack Forest Preserve. This summer we are working on mapping natural communities, searching for rare species, and field-checking proposed trails and trail upgrades in Wilcox Wild Forest and Ferris Lake Wild Forest. Our goal is to provide Forest Preserve staff in the Adirondacks and Catskills with accurate, up-to-date information on rare species and sensitive resources that can be used to support efforts in land and recreation planning in these two highly significant areas of the state.

While the majority of our work on rare species with our state agency partners involves managing volumes of rare species data and conducting surveys on existing state-managed land, we’re sometimes presented with opportunities to provide information in support of land transfers or land acquisition. Over the last year, we were funded by DEC to conduct a year-long, four-season inventory of rare plants and animals on Plum Island and to develop a seamless map of the island’s natural communities, documenting communities of statewide significance. The island’s disposition following the future departure of the Plum Island Animal Disease Center (PIADC) has been a subject of much political and public debate. Regardless of the island’s future ownership, an understanding of the current status of biodiversity will help inform ongoing and future natural resource management efforts there and we were excited for this opportunity. The Plum Island report is available at:

http://nynhp.org/files/PlumIsland_2016/Plum_Island_biodiversity_inventory_June2016.pdf

We are grateful for the excellent work of Neil Schoppmann, a student of Dr. Dylan Parry, who we hired to help us with moth sampling and identification on the island. During the course of the surveys, we documented 256 species of moths on Plum Island, including 11 rare species.

As I write this report, we are finishing up a special project for OPRHP called “Ranking State Parks for Conservation Planning and Action” which re-examines which state lands support unique aspects of New York’s biodiversity and how our state agency partners, such as OPRHP, can leverage this biodiversity to support their goals. In this project, we completed a biodiversity assessment state-wide at a finer resolution than ever before, allowing us to look at the contribution of very small parcels of land to biodiversity across the state. The finer resolution Natural Heritage Biodiversity Index has the added advantage of allowing us to roll up the data into larger units of comparison such as Parks, Wildlife Management Areas, State Park or DEC Region, or all state-
owned land. The statewide geographic scope will allow OPRHP and other agencies and land stewardship organizations to put their property, and their biodiversity, in an appropriate context. The final report will be posted to a public website for download in August 2016.

Other notable analysis projects we have taken on (and completed) during the course of the year include one funded through DEC’s Trees for Tribs Program “Great Lakes Basin Riparian Opportunity Assessment.” Intended to provide information to support riparian restoration efforts within New York’s Great Lakes basin, the primary goal of this assessment is to identify target locations where enhancement of riparian buffers will produce tangible benefits by improving water quality (reduction of nutrient and sediment loading, erosion control, etc.) and habitat quality (riparian cover, habitat connectivity, etc.). We created an online data explorer for the project and all of our products are available for download: http://nynhp.org/treesfortribsgl. DEC is currently funding us to expand this riparian analysis and tool to be statewide in scope.

Past annual reports have described how we are engaging with DEC’s wetland program and wetland protection efforts by developing a statewide wetland monitoring program using EPA Wetland Program Development Grants. This past year we closed out four wetland projects and added three more, so we are currently working on four different studies. Our list (below) includes one that we’ve collaborated on with Dr. James Gibbs and Stacy McNulty of ESF, “Determining the importance of vernal pools across geophysical and urbanization gradients to inform regulation, conservation, and management.” This statewide vernal pool study is funding a graduate student, Leah Nagel, and will involve several NYNHP zoologists and ecologists.

Our current wetland projects and project contacts are:

1. EPA WPDG: Supporting actionable decision-making for wetland permitting in New York from urban to rural environments (Project Manager: Shappell)
2. EPA WPDG: Determining the importance of vernal pools across geophysical and urbanization gradients to inform regulation, conservation, and management (Project Manager: Matt Schlesinger)
3. IJC GLAM (International Joint Commission): Monitoring of Lake Ontario St. Lawrence River coastal wetland habitat in support of adaptive management (Project Manager: Tim Howard)
4. EPA National Wetlands Condition Assessment (Project Manager: Laura Shappell)

Publications

Papers Submitted, In Review, Pending Decision
None

Papers/Posters Presented at Science Meetings


Unfunded Service to Professional Societies and Organizations
Schlesinger, M.D. 2015-present. Scientific Advisory Board, Huyck preserve and Biological Research Station, Rensselaerville, NY.
Young, S.M. 2015-2016. Board of the Friends of the Woodlawn Preserve, Schenectady, NY

Funded Service to Governmental Agencies, Public Interest Groups, etc.
Chaloux, A. 2012-present. Member, Northeast Partners in Amphibian and Reptile Conservation (NEPARC) Steering Committee.
Evans, D.J. 2007 – present. Member, New York State Invasive Species Advisory Committee.
Evans, D.J. 2013 - present. Member, NatureServe Board of Directors.
Lundgren, J. 2016. Shawangunk Ridge Partnership Research and Management Subcommittee Meeting 6/9/16: Post-fire research needs and planning for Sam’s Point, Minnewaska State Park Preserve. (TNC, NYS DEC, OPRHP, Mohonk Preserve, and others)
Lundgren, J. and J. Dean. 2016. Finger Lakes PRISM Hemlock Prioritization Team (Cornell, USFS, NYS DEC, NRCS, NYNHP, and others).
Lundgren, J. 2015 (Field Trainings) Introduction to Natural Heritage community ecology field methodology. Training for NY State Parks Invasives Strike Team and Forest Health Team staff, Minnewaska, Napeague, and Allegany State Parks.
White, E. 2015-2016. Member, Technical Committee and Aquatic Sub-Team of Regional Conservation Opportunity Areas Project, North Atlantic Landscape Conservation Cooperative (NALCC).
White, E. 2007-present. Member, Dragonfly Society of the Americas.
Young, S.M. 2015-2016. Coordinator for the Long Island Invasive Species Management Area (many public and private partners).
Young, S.M. 2015-2016. Member, Suffolk County Invasives Advisory Board.

Presentations to the Public
Young, S.M. New Kids on the Block. Emerging Invasive Plants We Hope You Never See. Cornell Cooperative Extension In-Service on Invasive Species, Ithaca, November 2, 2015.

Miscellaneous Publications and Outreach Activities and Materials
Chaloux, A. 2015 (invited panelist, to share information about careers in the environmental conservation field). Non-medical biology-related careers. SUNY Albany seminar (Dr. Katie Sarachan). Albany, NY.
Young, S.M. 2015-2016. LIISMA Facebook and Twitter pages.
Appendix R. Annual Report for the Roosevelt Wild Life Station
(compiled by J. Frair, Associate Director, RWLS)

ROOSEVELT WILD LIFE STATION – 2015-16 REPORT

It is our mission to fulfill Theodore Roosevelt’s conservation vision by securing wild species and habitats through rigorous science, specialized education, and strategic conservation partnerships.

Like Theodore Roosevelt, we envision a world in which all people are both elevated and sustained through their interactions with thriving ecosystems and wild species.

State of the Station
These are exciting times at the Roosevelt Wild Life Station, founded in 1919 as the very first university program dedicated to science-based management of wildlife resources. Based at the State University of New York’s College of Environmental Science and Forestry (ESF) in Syracuse—the nation’s oldest and most respected college dedicated solely to the study of the environment—the Roosevelt Station is the only memorial to President Roosevelt that he personally approved of during his lifetime. The Station celebrates Roosevelt’s legacy as a hunter-naturalist-conservationist and is part of the rich history of wildlife conservation rooted in New York State—the birthplace of Ducks Unlimited, Camp Fire Club of America, and the Boone and Crockett Club. New York is most appropriate as the home for the Roosevelt Wild Life Station and the important work it does: wildlife nearly 6% the New York State economy and between wildlife watchers and, no state spends more money, or more taxes, on wildlife recreation New Yorkers.

Now home to the 4th largest undergraduate and graduate education program in wildlife science, conservation biology, and fisheries management in the United States (and by far the largest in the northeastern US), the year 2015-16 has been a particularly exciting and productive one for the Roosevelt Wild Life Station. Please read ahead to learn about some recent accomplishments of the Station’s associated students, faculty and staff—accomplishments aided in no small part through the help of collaborating organizations and members of the station’s Honorary Advisory Council. We have enjoyed a productive year in part because the activities of the Roosevelt Wild Life Station are now guided by a strategic plan developed last year that has brought much needed coherence to our large and expanding program.

We thank you for your support and interest in the Roosevelt Wild Life Station and our collective efforts to ensure that Roosevelt’s famous maxim applies long into the future for the wild life held as a public trust in this great country:

“The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased; and not impaired in value.” —Theodore Roosevelt

James P. Gibbs, Ph.D., Director, Roosevelt Wild Life Station

Note: This is an abbreviated version of the Station’s annual report. Please contact Jacqui Frair (jfrair@esf.edu) for a full report.
Station Personnel

ADMINISTRATION
James Gibbs, Director
Jacqueline Frair, Associate Director
Rebecca Rundell, Head Curator, Collections
Ron Giegerich, Manager, Collections
Terra Rentz, Support Staff

SCIENTISTS
Jonathan Cohen, Ph.D., Endangered species, ornithologist
Martin Dovciak, Ph.D., Forest change ecologist
John Farrell, Ph.D., Aquatic and fisheries scientist, Director of Thousand Islands Biological Station
Jacqueline Frair, Ph.D., Large mammal and landscape ecologist
James Gibbs, Ph.D., Conservation biologist and herpetologist
Donald Leopold, Ph.D., Field and plant ecologist
Stacy McNulty, M.S., Adirondack wildlife conservationist
William Powell, Ph.D., Chestnut restoration biologist
Rebecca Rundell, Ph.D., Field zoologist, malacologist
Kim Schulz, Ph.D., Aquatic ecologist
Don Stewart, Ph.D., Ichthyologist
Brian Underwood, Ph.D., Field mammologist
Chris Whipps, Ph.D., Fish and wildlife parasitologist

ROOSEVELT FAMILY AFFILIATES
Theodore Roosevelt IV
Simon Roosevelt

HONORARY ADVISORY COUNCIL
J. Andrew Breuer
Preston Bruenn
James Curatolo
Ward M. French III
Jeffrey Gronauer
John J. Jackson III
William Little
Simon Roosevelt
Leonard Vallender
William Wallauer
James T. Walsh

COLLABORATING ORGANIZATIONS AND PROGRAM SPONSORS
BASF Corporation
Boone and Crockett Club
Camp Fire Club of America
Cornell University (Animal Health Diagnostic Center, Cooperative Extension, Cooperative Fish and Wildlife Research Unit)
Ducks Unlimited
Electric Power Research Institute
Galapagos Conservancy
Great Lakes Fisheries Commission
Honeywell International, Inc.
Hudson River Foundation
M. Falcone
National Audubon
National Aeronautics and Space Administration
National Fish and Wildlife Foundation
National Geographic Society
National Institutes of Health
National Oceanic and Atmospheric Administration
National Park Service
National Science Foundation
New York Sea Grant
New York State Department of Environmental Conservation (Division of Fish, Wildlife and Marine Resources)
New York State Energy Research and Development Authority
Northern States Research Cooperative (USFS)
Panthera, Inc.
SUNY ESF Adirondack Ecological Center
SUNY ESF Thousand Islands Biological Station
Syracuse City School District
United States Agency for International Development
United States Army Corps of Engineers (Fort Drum Army Base)
United States Environmental Protection Agency
United States Fish and Wildlife Service
United States Forest Service (Northern Research Station)
United States Geological Survey

SPONSORS OF THE BOONE AND CROCKETT — CAMP FIRE CLUB PROGRAM IN WILDLIFE CONSERVATION
Richard Ahearn
E. Foster Conklin
John F. Erdmann
Charles H. Garnett
Jeff Gronauer
Steven Sayer
Avery Stirratt
Big Lots
Camp Fire Club Conservation Fund
Carvell Foundation
Dalio Foundation
International Business Machines
Waterfowl Research Foundation
HIGHLIGHTS FROM THE PAST YEAR

Natural History for the 21st Century

CONNECTING THROUGH COLLECTIONS
It is amazing how much inspiration and knowledge can be gained from holding a wild animal in your hand or looking one straight in the eye from inches away — experiences made possible for hundreds of students engaged in our wildlife program each year through the remarkable Roosevelt Wild Life Collections. This year we added more than 80 vertebrate specimens as full mounts, scientific skins, skulls, or complete skeletons to our collections. Ron Giegerich (Roosevelt Wild Life Collections Manager) and his students preserved a white-tailed deer fawn, 2 beaver, 18 waterfowl, a piledated woodpecker, and many small mammals collected within the central New York region. We are incredibly grateful for the many spectacular full mounts donated this year, including a sable antelope, tiger, four leopards, and two Canada geese. And work continues on the preparation of the 15 marine mammal skeletons donated to our collections last year.

ROOSEVELT WILD LIFE EDUCATION AND RESEARCH CENTER
The Roosevelt Wild Life Collections contain over 10,000 specimens of birds, mammals, freshwater and marine fishes, reptiles and amphibians accumulated since 1919 (also specimens donated to our collections are even older). Current conditions for housing the venerable and quite possibly most-heavily-used collection in the country are cramped and inadequate. With a $2M grant for SUNY capital improvements in hand, we are planning to transform a vacant space located in the lower level of ESF’s new Gateway Building into a state-of-the-art facility to house a major portion of our collections (mainly birds, mammals, amphibians and reptiles). Project design goals include enhancing the security and environmental conditions for the collection, maximizing storage capacity, improving access for specimen-based research, hands-on undergraduate education in ornithology, mammalogy, and herpetology, community outreach, and providing a showcase to enhance SUNY ESF’s role in species exploration and conservation. We are very excited to see this project underway as collections-based research, teaching and outreach lies at the heart of the mission of the Roosevelt Wild Life Station.

Conservation through Sustainable Use

IMPROVING FOREST REGENERATION THROUGH DEER MANAGEMENT
In New York, deer impacts on forest ecosystems are evident across a range of deer densities and forest habitats, with successful forest regeneration observed only 30% of the time. But a lot of things other than deer browsing influence tree regeneration, such as soil quality, seed bank, shade conditions, and competing vegetation. Working with the NYS DEC and Cornell Cooperative Extension, Martin Dovciak (Roosevelt Forest Change Ecologist), Jacqui Frair (Roosevelt Large Mammal Ecologist) and post-doctoral researcher Mark Lesser mapped the capacity for tree regeneration statewide to differentiate areas where moderate changes in deer management might be expected to meaningfully improve forest regeneration from those areas where even complete eradication of deer would be insufficient to improve regeneration¹. The team is currently building a citizen-science monitoring network to track annual changes in deer
impacts.

1 For more information see http://www.esf.edu/efb/dovciak/Projects.htm.

MUSKELLUNGE AND PIKE — MANAGEMENT AND RESEARCH NEEDS
New research techniques and changing fisheries have contributed to paradigm shifts in the science and management of muskellunge and pike. Following a symposium they organized at the annual meeting of the American Fisheries Society, John Farrell (Roosevelt Aquatic and Fisheries Scientist) and collaborators associated with ESF’s Thousand Islands Biological Station outlined a research agenda for these important sportfish species—focusing attention on relating egg production and recruitment to the quality of spawning habitat and gaining a greater understanding of how selective mortality and exploitation can alter population size structure, sex ratios, and life history characteristics. The team deems such information critical for conserving and restoring self-sustaining populations of muskellunge and northern pike into the future2.

2 For more information see http://www.tandfonline.com/doi/pdf/10.1080/03632415.2015.1038382.

BLACK DUCK CONSERVATION
It is hard to imagine New York without mallards, and yet they are a relatively new addition. Today mallards outnumber our native black ducks 4 to 1, competing with them for breeding grounds in summer and food supplies in winter. They also readily breed with black ducks, creating hybrids that look more and more like mallards over time. Will mallards ultimately replace black ducks altogether? Jonathan Cohen (Roosevelt Ornithologist) and collaborator Mike Schummer are looking into the issue in partnership with the NYS DEC. This past winter, ESF graduate students Adam Bleau and Justin Droke affixed GPS tags to female mallards and black ducks and monitored their interactions through the critical winter period3 — receiving information on each bird’s location on their cell phones! The team will be busy this summer deploying more tags on birds for the second and final year of this study.

3 To read an article that highlights the banding efforts that track waterfowl population changes and mentions the ESF research see http://www.dec.ny.gov/pubs/104245.html

A RARE BOOK ABOUT AN IMPORTANT LAKE
In 1954, anglers reported a sharp decline in the famous Walleye fishery in New York’s Oneida Lake. What started as a modest fisheries study turned into a long-term research program that serves as a model for lake ecosystems around the world—contributing greatly to our ability to understand the complexity of lake systems and devise appropriate responses in research directions, management options, and policy. This year the American Fisheries Society published a book that chronicles the lake’s research and management history with contributions from Kimberly Schulz (Roosevelt Aquatic Ecologist) and Don Stewart (Roosevelt Ichthyologist), who also served as editor. Book can be accessed at: https://fisheries.org/2016/02/new-title-oneida-lake-long-term-dynamics-of-a-managed-ecosystem-and-its-fishery/

DIAGNOSING AN EMERGING DISEASE IN WILD TURKEY
Lymphoproliferative disease (LPDV) is a retrovirus that infects wild turkeys. The first cases were diagnosed in 2009 and the virus is documented to be widespread throughout the eastern U.S. Infected animals may not exhibit symptoms of the disease, and understanding the potential impacts of this disease on turkey populations has been impeded by the lack of a diagnostic method for living birds (previous diagnostics required tissue or bone marrow). Working with the NYS DEC, Cornell University and hunter-harvested turkeys, Chris Whipps (Roosevelt Wildlife
Parasitologist) and graduate student Katrina Alger devised a blood test for LPDV that showed a high degree of sensitivity and specificity in detecting the disease and provides a simple and effective tool for monitoring the prevalence of this disease in both live and harvested animals⁴.


MONITORING MOOSE IN THE ADIRONDACKS
Working with the NYS DEC, Cornell University, and the Wildlife Conservation Society, Jacqui Frair (Roosevelt Large Mammal Ecologist), Paul Schuette (Roosevelt Post-Doctoral Scholar), and graduate student Sam Peterson are assessing the status of the moose population in New York State. This summer the team will begin surveying food available to moose so as to quantify how large a moose population the habitat can support, which will be used to help set management goals for this important species. In the second year of the 4-year study, the research team has created a website to keep people updated on research findings⁵. The site provides details on winter aerial surveys, GPS-collared moose, and health assessments and will be updated regularly with new data. The site also links to a reporting form for moose sightings that helps the team keep track of moose across the vast Adirondack Park.

⁵ To explore moose research findings visit http://ny-moose.weebly.com

Imperiled Species Restoration

GIANT TORTOISE: 185 YEARS POST-DARWIN, A NEW SPECIES IN GALAPAGOS
No animals are more immediately associated with evolution or Charles Darwin than the giant tortoises of the Galapagos. Small differences had been noticed between tortoise populations occupying eastern versus western Santa Cruz Island, differences that were assumed to be simple genetic variation within the known species, _Chelionoidis porteri_. James Gibbs (Roosevelt Conservation Biologist), working with colleagues at Yale University and the Galapagos Conservancy, conducted a careful analysis of genetic and morphological data, which indicated the smaller eastern population (numbering as few as 250 individuals) is a distinct and previously undescribed species⁶ — a discovery that has immediate, important conservation implications. _C. porteri_ has a more limited range than previously believed, being restricted to western and southwestern areas of the island, and care must be taken to avoid bridging the natural isolation of the two species. The newly described species, _C. donfaustoi_, has been named in honor of a park ranger known as “Don Fausto,” who dedicated 43 years to giant tortoises conservation.

⁶ See Poulakakis et al. (2015) at http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0138779

HELPING RUSTY BLACKBIRDS OUT OF AN ECOLOGICAL TRAP
Rusty blackbird populations have plummeted since the mid-20th century, and past research has indicated the species may be caught in an ecological trap set by timber harvesting on their breeding grounds. Graduate student Shannon Buckley, supervised by Stacy McNulty (Roosevelt Adirondack Wildlife Conservationist), placed motion-sensitive cameras at Rusty blackbird nests which indicated that red squirrels were the main nest predator, especially following a year when hard mast was abundant. The team’s study indicates that blackbirds choose dense cover of small softwoods when selecting nests, which may provide the birds with the best chance for nest success and managers with a template for mitigating the potentially negative effects of timber harvest on this sensitive species⁷.

COLLISION RISK WITH WIND TURBINES FOR PIPING PLOVERS
Collision with wind turbines is an increasing conservation concern for migratory birds. Several wind projects have been proposed for the Atlantic coast of the United States where they pose a mortality risk to nesting Piping Plovers, a species already threatened with extinction. Models estimating collision risk require information on bird flight behavior, information that is often lacking and so guessed at when attempting to mitigate collision risks. For Piping Plovers, Jonathan Cohen (Roosevelt Ornithologist) and graduate students filled this gap in knowledge by measuring the flight heights (using optical range finding) and flight speeds (using videography) of birds in New Jersey and Massachusetts. Plovers flew to heights of up to 10.5 m and at speeds averaging 9.30 m/s. The team’s techniques provided a low-cost alternative to the fixed-beam radar and thermal imaging approaches previously used to estimate bird flight parameters.\(^8\)


CULTIVATING CONSERVATION LEADERS
RECENT GRADUATE STUDENTS—WHERE ARE THEY NOW?

JUAN CARLOS ALVAREZ-YEPIZ, Ph.D. 2014 (Advisor: M. Dovciak)
Research Scientist, National Autonomous University of Mexico

SARA HANSEN, M.S. 2013 (Advisor: J. Frair)
Deer Specialist, Washington Department of Fish and Wildlife, Spokane, WA

STEPHEN LANGDON, M.S. 2014 (Advisor: M. Dovciak)
Project Manager, Shingle Shanty Preserve and Research Station, New York

CHRISTA LEGRANDE, M.P.S. 2014 (Advisor: J. Frair)
Lands Assessment Coordinator and Monitoring Biologist, Joint Base Lewis-McChord, Washington

JULIANA QUANT, M.S. 2014 (Advisors: M. Dovciak and D. Leopold)
Invasive species management coordinator, Bennington County Conservation District, Vermont

SILVIA SALDIVAR BELLAISAI, M.S. 2014 (Advisor: J. Frair)
Biologist, Itaipu Binancional– Reserva Ecologica, Itabo, Paraguay

SCOTT SVEIVEN, M.S./M.P.A. 2014 (Advisor: D. Leopold)
U.S. Director, Operation Wallacea

JAY W. WASON, Ph.D. 2016 (Advisor: M. Dovciak)
Post-doctoral Associate, Yale School of Forestry and Environmental Studies
The SUNY-ESF Thousand Islands Biological Station (TIBS), located on Governor’s Island, hosts a research program focusing on the aquatic ecology of the St. Lawrence River with an emphasis on fisheries, wetlands, limnology, invasive species, and ecological perturbations. The TIBS research program continues to advance scientific inquiry to guide management activities and understand impacts affecting the ecosystem. Many faculty, staff and students from a variety of institutions are attracted to the unique nature of this immense river that is the natural outlet to the Laurentian Great Lakes. Graduate and undergraduate student projects, with the support of a variety of faculty, provide a diverse research portfolio with many related studies supported by extramural grants. Many local outreach activities maintain a strong ESF connection to the St. Lawrence River community and provide students and staff opportunities for information exchange. We are excited about our progress and achievements and look forward a sustained commitment to aquatic research and conservation in the face of significant and evolving environmental challenges.

Highlights for 2015-2016 include significant research accomplishments including a Master’s student, Andrew Miano (MP, J. Farrell), graduating along with MPS Student Kelly Huffman (co-MP’s J. Farrell and C. Whipps); 4 published papers, that include a feature article in *Fisheries* (see photo below) on muskellunge and northern pike conservation and management. We are
pleased that our long-term contract with the NYS Department of Environmental Conservation that includes an excited portfolio of research and management activities to benefit fisheries and serve as a platform for adaptive management was renewed for 5-years. Additionally, we started a new contract with the US Fish and Wildlife Service in a collaborative effort with Carleton University (Dr. Steven Cooke) involving behavior and movements of juvenile muskellunge to learn about wintering habitat and also continue important habitat restoration evaluation research with the Fish Habitat Conservation Strategy with partner organizations. TIBS students and staff attended several conferences including NY American Fisheries Society and the International Association of Great Lakes Research. The July 23 ribbon-cutting and opening of the new Cean Aquatic Researcher building at TIBS with major donors (Frank and Anne Cean, Eric and Judy Mower, and Dani Bake and ESF president Quentin Wheeler) and was another important milestone for the year. We welcomed new professional staff including Nathan Satre as Senior Research Support Specialist and Dr. John Paul (JP) Leblanc, Post-doctoral Associate. We look forward to a strong 2016 field season with new staff, students, and volunteers!

Administration

Dr. John M. Farrell, Director, TIBS
Dr. Donald J. Leopold, Chair, Department of Environmental and Forest Biology
Dr. Valerie Luzadis, Interim Provost and Executive Vice President, SUNY ESF
Dr. Quentin Wheeler, President, SUNY ESF

Professional Staff (all supported on extramural funding)

2015
Brandy Brown, Senior Research Support Specialist, Fish Habitat Conservation Strategy (Left for position with Ducks Unlimited August 2015)
Ericka Augustyn – Field Technician
Eric Johns – Field Technician (now in Master’s program at Roberts Wesleyan College)
Emily Churchill – Field Technician

2016
Nathan Satre, Senior Research Support Specialist and Laboratory Manager
Dr. John Paul Leblanc, Post-doctoral Associate
Dr. Charlotte Narr, Field Technician
Julie Beck, Field Technician
Jay Palumbo, Field Technician
Jacob Ball, Field Technician
Nicole Madden, Field Technician

Graduate students

Andrew Miano (MS – Graduated December 2015 - Advisor, J. Farrell)
Kelly Huffman (MPS – Graduated May 2016 – Advisors, J. Farrell & C. Whipps
Ceili Bachman (MS – Advisors, M. Mitchell & M. Schulz)
Matt Regan (MS – Advisor, D. Leopold)
Alex Looi (MS – Advisor, K. Schulz)
Geof Eckerlin (PhD – Advisor, J. Farrell)
Erika Augustyn (MS – Advisor, J. Farrell)
Jessica Goretzke (MS – Advisor, J. Farrell)

Undergraduate students

2015
Ryan Robinson – Field Technician and SUNY Morrisville Intern
Austin Demarest – Federal Work-Study Student (funded through EFB)
Katelyn Barhite – Field and Lab Technician
Ally Jones – Field Technician (SUNY Geneseo)
Carrie Nyce-Volunteer Field Technician (Rider University)

2016
Austin Demarest – Lab Technician
Katelyn Barhite – Lab Technician
Jay Palumbo – Field and Lab Technician
Siddarth Motwani – Field and Lab Technician
Mikayla Warren – Federal Work-Study Student (funded through EFB)

Faculty involvement

Dr. Steven Cooke, Carleton University – Juvenile esocid movements study
Dr. Ben Koops, (with Eric Rondeau), University of Victoria – northern pike sex ratio study
Dr. Derek Crane, Coastal Carolina University – fisheries studies
Dr. Emily Cromwell, Cornell University Veterinary College – NY SeaGrant VHSV study
Dr. Austin Gallagher, Carleton University – Juvenile esocid movements study
Dr. Rodman Getchell, Cornell University Veterinary College – NY SeaGrant VHSV study
Dr. James Gibbs, ESF, NOAA wetlands restoration project – avian and herpetofauna
Dr. Donald Leopold, NOAA wetlands restoration project – plant ecology
Dr. Kevin Kapuscinski, Lake Superior State University, FA project – fisheries studies
Dr. Marc Mingelbier, INRS Quebec – larval fish ecology project
Dr. Myron Mitchell, NOAA wetlands restoration project – biogeochemistry
Dr. Kimberly Schulz, NOAA wetlands restoration project – lower trophic levels and nutrients
Dr. Chris Whipps, ESF, FA project Northern Pike sex ratio study
Dr. Matt Windle, St. Lawrence River Institute of Environmental Sciences – Project Baseline
Research (active grants listed)

Farrell, J. M. 4/1/16-3/31/21. Water Level Regulation Adaptive Management Research: Coastal Wetland Health Indicators and Sportfish Production in the Upper St. Lawrence River. NYS Department of Environmental Conservation Coastal Lakes and Oceans Program (funded $1,417,046)


Publications (2015-16) (published or in press)


Published reports


Presentations (scientific)


TIBS Research Highlights

- **LONG-TERM MONITORING:** Abundance of spawning adult and young-of-the-year northern pike in the Thousand Islands region of the St. Lawrence River continues to be suppressed likely due to habitat degradation resulting from long-term management of Lake Ontario/St. Lawrence River water levels. Overall, natural reproduction of pike at natural and managed spawning marshes remains poor, due to low abundance of spawning adults and sex ratio dominance of females. Habitat restoration efforts including enhanced connectivity with an aquatic excavator and creation of spawning pools have shown success for natural reproduction of young-of-year (YOY) at many sites. Monitoring of outmigration of young at enhancement sites further indicates a strong linkage of abundance to spring water levels.

- **PIKE SEX RATIO STUDY:** A histological approach to determine gender in young-of-the-year northern pike was evaluated using stained preparations of preserved gonad tissues raised in culture and collected in local bays. This procedure is being used to determine gender in juveniles to evaluate sex ratio and make comparisons to the adult population that is female-dominated. A diagnostic tool for gender determination will be important for research on factors influencing sex ratios in nature.

- **MUSKELLUNGE MONITORING:** Muskellunge population indices in the Thousand Islands region of the St. Lawrence River continue to show signs of stress. Spring trapnet and summer seining...
surveys, and an angler diary index, all indicate reduced adult and young-of-the-year abundance. Adult muskellunge mortality due to outbreaks of the invasive Viral Hemorrhagic Septicemia virus (VHSV) are contributing to lower adult muskellunge numbers and low levels of natural reproduction. The St. Lawrence River spawning adult muskellunge trapnetting index (for the post-VHSV era (2006-2015; 1.9 adults handled/100 net-nights) is less than a third of pre-VHSV index (6.3 adults/100 net-nights). Both YOY seining indices and angler catch rates show a similar pattern in time trends. Intensive research and management efforts are focused on reversing these alarming trends.

**MUSKELLUNGE VHSV STUDY:** Sampling VHSV levels from fishes in proximity with spawning adult muskellunge was completed to test for presence of virus in 2015. Positive samples with qRT-PCR were detected for rock bass, yellow perch, and round goby at multiple sites. Muskellunge from the DEC Chautauqua Lake Hatchery were used in a separate study to examine the effects of new variants of VHSV on their survival. All variants tested caused 100% mortality. Additional work is being done to better understand the viral genome and the molecular changes it is going through in nature and its potential implications to fisheries.

**MUSKELLUNGE SURVIVAL STUDY:** Nearly 50,000 advanced muskellunge fry were cultured at TIBS and released in three types of sites including (1) natural productive sites, (2) sites where muskellunge reproduction has ceased, and (3) sites where habitat has been restored, in an effort to compare survival and evaluate management options. High survival and abundance of fall YOY due to the stocking were recorded at two of the sites; YOY were also detected at a habitat restoration site.

**INVASIVE ROUND GOBY EGG PREDATION STUDY:** An experiment was conducted on round goby egg predation representing broadcast spawning species (pike and muskellunge) and indicated higher egg predation rates on habitats with lower complexity (e.g. sand, silt). Higher complexity habitat including SAV, gravel, rubble, filamentous algae, also experienced significant losses (43-60%). Round goby have the potential to exhibit significant egg predation effects for broadcast spawning species such as muskellunge and northern pike.

**INVASIVE GOBY DIET STUDY:** A round goby diet analysis compared two size classes, including large individuals (up to 250 mm) sampled from the St. Lawrence River during the spring index trapnetting. An abundance of large round goby (130-250 mm) has developed in the catch since 2012. Minnow traps were used to capture smaller goby (<130 mm). Diet analyses revealed a shift from a generalist diet (chironomids, gastropods, and including eggs) for small individuals to a more specialized dreissenid-based (invasive zebra and quagga mussel) diet for large round goby. Stable isotope analysis of goby muscle tissue supported findings from diet analysis. Nitrogen isotopes showed lower trophic position for large round goby and carbon isotopes indicated their diet source is derived primarily from dreissenids. Smaller gobies consumed a greater variety of prey including fish eggs and likely have a greater influence on native food webs.
• HABITAT RESTORATION STUDY: A walleye spawning habitat substrate addition project was completed at Kent’s Creek near Cape Vincent, NY by the US Fish and Wildlife Service in February 2015. The spawning bed was evaluated for walleye egg abundance and outmigration of fry during spring 2015 and was compared to a nearby upstream natural spawning area. Walleye spawned at both the created and natural site at a similar high rate and egg viability. Similarly, outmigration of newly hatched fry was successful at both natural and created locations. Evaluation will occur again in spring 2016.

• NEW OBSERVATION/MONITORING: Fall seining in 2015 targeting muskellunge led to capture of three young-of-year walleye at three different locations; two off the head of Grindstone Island and one at Rose Bay near Cape Vincent, New York. This is the first record of walleye reproduction near these locations and suggests nearby shoal spawning areas may exist.

• NEW OBSERVATION/ MANAGEMENT: Water chestnut (Trapa natans) was discovered in Rose Bay (a prominent muskellunge spawning site) near Cape Vincent on two occasions in summer of 2014. Efforts were made to eradicate the invasive plant by pulling and screening substrate for turions and fragments. No water chestnut plants were detected in 2015 despite multiple surveys through the summer and fall. There is concern regarding eastward transport of this invader from Lake Ontario sites where it is highly abundant.

Outreach

Ribbon Cutting Ceremony of the Frank and Anne Cean Aquatic Research Building, Thousand Islands Biological Station (40 participants)

Thousand Islands Land Trust, Zenda Farm Picnic – Provided display of fish and other aquatic life and information regarding TIBS programs as a TILT Conservation Partner for major community event (~250 participants)

Thousand Islands Land Trust, Kids Trek “Ichthyologist for a Day” – led children ages 5-12 and adults through a series of modules on fish and river ecology on the St. Lawrence River (25 participants) http://www.tilandtrust.org/Treks-Events/FullCalendarofTreksEvents.aspx


Northeast Underwater Explorers (NEUE), training for citizen science data collection for TIBS (10 participants)

Project Baseline & Northeast Underwater Explorers (NEUE), interview and assistance with development of program education video http://www.projectbaseline.org/project-baseline-volunteer-shares-project-new-york-dive-show
Thousand Islands Land Trust, Grindstone Island Informational Session, gave presentation and answered questions. (20 participants)

Farrell, J. M. 2015. Long-term Research and Management at the Thousand Islands Biological Station. Fish Community Objectives, DEC Public Information Meeting, Clayton, NY (30 participants)

Farrell, J. M. 2015. Long-term Research and Management at the Thousand Islands Biological Station. Fish Community Objectives, DEC Public Information Meeting, Ogdensburg, NY (30 participants)


![TIBS staff and students take part in the annual “Ichthyologist for a Day” community event with the Thousand Islands Land Trust. Participants took part in three sessions including invasive species, fish ecology, benthic invertebrates and lower trophic levels, and a dock fishing experience](image)

**Teaching**

EFB 388 Adirondack Fish Ecology – SUMMER 2015 - two day field trip to TIBS to learn about the aquatic ecosystems and fishes of the St. Lawrence River (14 students)
Students and Instructors from the Cranberry Lake Biological Station Adirondack Fish Ecology class on their annual field trip to TIBS. Students worked directly with TIBS program staff and students work directly with the class as they experienced and participated in the research and monitoring program

Facility upgrades

The ribbon-cutting ceremony with ESF President Wheeler and honored donors and TIBS supporters officially opened the Cean Aquatic Researcher Building on July 23, 2015 (See more coverage at http://www.watertowndailytimes.com/news03/new-quarters-expected-to-boost-research-at-suny-esf-island-lab-20150724). The new facility was used by numerous students and professionals during the remainder of 2015 and is fully occupied for the 2016 season. Thanks to the ESF Development Office and VP Robert French, new signage was erected. TIBS also received a new transmitted UV microscope for viewing fish otoliths and four new outdoor culture tanks (from DEC grants); the tanks were custom built and installed on Governors Island in spring 2016 and will be used for fish culture and experimentation.
Top panel: Cean Aquatic Researcher Building (center), example student bedroom (left) and office (right) officially opened July 2015. Bottom panel: New TIBS facility signage with funding from the ESF Development Office and VP for Enrollment Management and Institutional Research. The new UV Microscope (center left).
Appendix T. Annual Report for the Cranberry Lake Biological Station
(no report this year)