

ANNUAL REPORT: June 1, 2012 – May 31, 2013
(i.e., Summer 2012, AY 2012-2013)
DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY
SUNY-ESF

NAME: Gregory McGee

I. INSTRUCTIONAL ACTIVITIES

1. Regular Course Offerings

	<u>Course No.</u>	<u>Title</u>	<u>Credit Hrs.</u>	<u>No. Students</u>	<u>No. of Lab Sections</u>
SUMMER:	EFB202	Ecological Monitoring & Biodiversity Assess	3	144	2
FALL:	EFB102	General Biology I Laboratory	1	267	14
	EFB132	Freshman Orientation Seminar	1	121	2
SPRING:	EFB104	General Biology II Laboratory	1	162	9

NOTE: PLEASE INDICATE WHICH COURSE(S) HAD A SERVICE-LEARNING COMPONENT AND BRIEFLY EXPLAIN THE NATURE OF THIS COMPONENT. For examples of service-learning in courses, see: <http://www.esf.edu/students/service/courses.htm>. Service-learning is a form of structured experiential education in which students engage with the community to be active learners, to enrich their sense of civic responsibility, and to explore practical application for course content. Faculty oversight, reflective thinking, and reciprocity are key components of service-learning.

2. Non-Scheduled Course Offerings (e.g., 496, 899, 999)

	<u>Course No.</u>	<u>Title</u>	<u>Credit Hrs.</u>	<u>No. Students</u>
FALL:	ESF296	Integrated Biology/Chemistry I Laboratory (w/ Neal Abrams)	2	21
	EFB420	Professional Experience	3	1
	EFB495	Undergraduate Experience/College Teaching	3	14
SPRING:	ESF296	Integrated Biology/Chemistry II Laboratory (w/ Neal Abrams)	2	19
	ESF296	Communication in the Sciences Seminar (w/ Neal Abrams & Elizabeth Hogan)	1	19
	EFB420	Professional Experience	3	1
			4	1
	EFB495	Undergraduate Experience/College Teaching	3	9

3. Continuing Education and Extension (short courses, workshops, etc.)

I worked with Travis Hall at Solvay High School and Rick Beal through ESF Outreach to pilot the delivery of EFB101/102 and EFB103/104 to local high school students and worked with Rick to bring 35 Syracuse Institute of Technology students to campus in April to participate in a genetic transformation laboratory.

EFB102.017	General Biology I Lab (ESF in the Classroom)	1 cr.	7 students
EFB104.011	General Biology II Lab (ESF in the Classroom)	1 cr.	5 students
Syracuse IT	General Biology laboratory on genetic transformations		3-hr lab, 35 students

4. Guest Lecture Activities

<u>Course No.</u>	<u>Title</u>	<u>No. of Lectures</u>
EWP190	Scientific Writing	1
Writing Center	Laboratory Report Assessment Workshop for Writing Tutors	1

II. STUDENT ADVISING

A. Number of undergraduates for whom you are the student's

official advisor: 38
unofficial advisor: 5 (from James Gibbs for spring semester)
CSTEP advisor: 2

B. Graduate Students: (list name, degree sought, starting date, month & year; if a degree was completed, please give date and full citation for the thesis or dissertation).

MAJOR PROFESSOR

CO-MAJOR PROFESSOR

John Wiley, PhD, (with C. Beier), started 6/09.
Emily Van Ness, MPS (w/ E. Folta), started 1/13.

MEMBER, STEERING COMMITTEE (other than those listed above)

Monica Bibiana Berdugo-Moreno
Keith Bowman
James Costello
Jennifer Gillrich - defended
Laura Hartley
Hua Cai
Meredith Kane
Lindsay Nystrom - defended
Mary Penney

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Huiran Jin, Chair, PhD Candidacy Examination Committee
Webster, Andrea, MS, Chair Thesis Defense Committee.

III. RESEARCH COMPLETED OR UNDERWAY

A. Departmental Research (unsupported, boot-legged; title - % time spent)

I continued to monitor two unfunded, experimental trials to restore native forest understory wildflowers using volunteer labor and undergraduate students. I have monitored these trials for five years with the help of undergraduate student volunteers and am now observing measurable germination and establishment responses. This spring Tyler Knapp (Sr., Wildlife Science) initiated an independent study on private land in

Tully to explore establishment success of several species in a secondary post-agricultural woodland through seed sowing and vegetative propagation. It is my intention to continue developing this line of inquiry with undergraduate, honors and graduate research students in order to establish protocols for forest understory restoration using volunteers, students and citizen scientists. Emily Van Ness, a new Environmental Interpretation MPS student, will be developing the educational programming to engage school groups and civic organizations in restoration efforts. I intend to begin recruiting graduate students to focus on this line of research.

- B. 1. Grant-supported Research (source, subject, amount - total award and current year, award period starting and ending dates; list graduate research assistants supported by each grant).
 - National Science Foundation, "Integrated Knowledge-Based Experiences for First-Year Biology and Chemistry Laboratories," (with N. Abrams, E. Hogan and V. Luzadis), \$193,290, June '12 – May '15, Graduate Student Supported: Evisa Abolina, 1 yr, Dept. Environmental Studies (V. Luzadis MP).
2. Research Proposals pending (include information as in B.1., above).
3. Research Proposals submitted, but rejected (include information as in B.1, above)
 - Northeastern States Research Cooperative, "Effects of microhabitat variation on arboreal arthropod communities in northern hardwood forests – building toward fully-integrated canopy research," (PI, with S. Teale and D. Parry).
 - Northeastern States Research Cooperative, "Long-term beech dynamics in the northern hardwood forest and the consequences." (co-PI, with R.D. Nyland, S. McNulty and R.S. Davis).
 - RF Seed Grant Program, "Can emerald ash borer biocontrol efforts be enhanced by native floral nectar sources for parasitoid wasps?" (PI, w/ M. Fierke).

IV. PUBLICATIONS (Full bibliographic citation, i.e., do not use "with Jones," or "Jones, et al."; please list only publications published, in press, or actually submitted during this reporting period --- **do not list manuscripts in preparation**).

A. Refereed Publications

B. Non-refereed Publications

C. Papers Presented at Science Meetings (give title, date, occasion, and location)

D. Public Service Presentations (lectures, seminars, etc. to and for the public; give group or occasion, date(s), and attendance)

- Spring Wildflower Walk – for general public at Skaneateles Conservation Area, April 27, 32 in attendance.

V. PUBLIC SERVICE

A. Funded Service (include consulting activities)

1. Government Agencies (Federal, State, Local):

2. Industrial and Commercial Groups, etc.

B. Unfunded Service to Governmental Agencies, Public Interest Groups, etc.

Board of Directors – Orenda Springs Charter School for Outdoor Education, Marcellus.

VI. PROFESSIONAL DEVELOPMENT

A. Professional Honors and Awards (for teaching, research, outreach, etc.)

2012-13 ESF Undergraduate Student Association Award for Excellence in Advising.

B. 1. Activities in Professional Organizations (offices held, service as chairman, member, participant or consultant)

2. Professional Society Membership

Association for Biology Laboratory Education

3. Other Professional Activities

a. Editorial activity

Journal (s)

Responsibility

Other (books, symposia, etc.)

b. Reviewer

Journal(s)

Canadian J. Forest Research

No. of manuscripts

1

Agency

No. of proposals

Other

c. Participation (workshops, symposia, etc.)

Name of workshop, etc.

Date

Place

C. Further Education/Re-training Undertaken, Leaves, Workshops, etc.

D. Foreign Travel (Where, When, Purpose)

VII. ADMINISTRATIVE AND SERVICE RESPONSIBILITIES (include committee participation)

A. Department-level

EFB Undergraduate Curriculum Director
ENB Curriculum Coordinator
EFB CCAC member

B. College-level

- Chair, Faculty Governance Committee on Student Life
- Faculty Governance Executive Committee
- ESF First-Year Learning Community Team
 - Helped to organize and participated in day-long (Saturday, 9/15/12) First-Year Retreat at Orenda Springs.
 - Participated in SU Dept. Education graduate student presentations on ESF learning community focus groups.
 - Facilitated (w/ Donaghy and Fierke) a freshman orientation session on Civility during fall orientation.
 - Facilitated a discussion on Academic Integrity during the ESF Faculty Mentoring Colloquium (1/8/13).
 - Participated in Family/Alumni Reception, Saturday, 10/6/12.
 - Chaired a Committee on Academic Honesty (5/7/13) for an academic integrity violation.

C. University-wide, including Research Foundation

VIII. 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 (**i.e., three paragraphs total**) would be most helpful: this past year, what have you done for our students, department/college, and self professionally? NOTE: The information in this section (along with the supporting specific information elsewhere in this report) should be your strongest case for being considered for a discretionary raise (when available), which I'll continue to award based on your contributions to the department and college this reporting period.

This year I continued to explore innovative approaches to improving instruction and student engagement in my General Biology laboratories and EFB202 (Ecological Monitoring and Biodiversity Assessment). Neal Abrams, Betsy Hogan and delivered the first iteration of our NSF-TUES supported Integrated Biology/Chemistry Laboratory and Communication in the Sciences seminar. I believe Neal and I were very successful at rolling out seven fully integrated laboratory experiences for our chemistry and biology students. Course evaluations indicate that students enjoyed this integrated approach to laboratory instruction, but it is not yet clear if they benefitted academically from the approach. Neal, Betsy and I all met weekly with the Communication in the Science seminar and developed engaging approaches to synthesizing student understanding of biological and chemical principles while developing communications skills. Students in this seminar practiced technical writing and peer review; wrote and recited children's stories on complex biological and chemical processes; and studied and developed poster presentations. Our colleagues on the First-Year Learning Community Team are following this work as we investigate ways to more completely integrate the learning experiences of our first-year students. I continued my commitment to delivering a high quality field study experience for our students through EFB202. In addition to time spent organizing instruction and coordinating evaluation of 144 students, I spent 30 days at CLBS this year teaching four different components and administering the two 3-week sections of EFB202. I also instituted some small changes to the EFB202 instruction that I believe have improved student learning outcomes. For the first time this year I invited Jessica Clemons, Assistant Librarian, to provide instruction on information technology and source integration as students developed their research ideas at the end of the second week. Her contributions yielded more thoughtful use and discussion of the scientific literature and better quality source integration in student presentations. I also increased expectations for the students' research project proposals that included

consideration of experimental design and anticipated approaches for statistical analyses of data. This approach led to improved quality of proposals and better planned projects.

I served again this year as EFB's Undergraduate Curriculum Director and as the Curriculum Coordinator for the Environmental Biology major. In my capacity as UCD I worked with Admissions to organize two departmental open houses and five accepted student receptions and personally participated in five of these seven events; coordinated undergraduate advising for the department; provided departmental orientation to freshmen and August/January transfer cohorts; represented EFB at two end-of-semester Academic Standards meetings; provided feedback to the Provost on potential consequences to EFB of SUNY-wide "Seamless Transfer" policies; and maintained currency of plan sheets and directed elective offerings for all seven majors. Apart from my own advisees, I advised numerous other EFB undergraduate students on a variety of curricular matters and facilitated numerous student petitions. I was gratified to receive this year's ESF-USA Award for Excellence in Advising. Another substantial task was coordination of departmental assessment and preparation of the ENB assessment report. Along with my colleagues on the EFB CCAC I assisted the AEC staff in their development of courses for the new Adirondack Residential Semester that would be able to fulfill EFB curricular requirements. I finished my second and final year as chair of the Student Life Committee, which finalized details of the ESF report on the National Survey of Student Engagement last summer. Those NSSE data are now being used by various campus units for program development. This year we also continued working with the Office of Student Affairs to evaluate and, where necessary, amend ESF's current policies and procedures on academic integrity. Finally the committee contributed to the formulation of a SUNY System position paper on improving diversity efforts across the system.

IX. A. FUTURE PLANS, AMBITIONS, AND POTENTIAL CONTRIBUTIONS FOR YOUR OWN PROFESSIONAL DEVELOPMENT AND THE ENHANCEMENT OF THE PROGRAM IN ENVIRONMENTAL AND FOREST BIOLOGY (brief summary)

This August Melissa Fierke and I will be participating in a week-long National Academies Summer Institute on Undergraduate Education at Stony Brook University. I look forward to having dedicated time with Melissa to develop lecture- and lab-based materials to improve instruction on evolution in our co-requisite General Biology courses. We plan to then coordinate workshops on mentoring and scientific teaching for ESF graduate students and faculty. I continue to recognize a need to provide easily accessible information to students and faculty on EFB curricula and departmental academic policies. Therefore, I am making a priority of updating and distributing an on-line version of Roy Norton's Undergraduate Advising Manual this coming fall. This coming year will provide opportunities for Neal Abrams, Betsy Hogan and I to disseminate preliminary research findings to other nearby STEM instructors and to begin publishing our modules in integrated biology/chemistry instruction. I am also looking forward to redirecting my priorities to reinstate a research program on forest and plant ecology. To this end I was successful at recruiting three new graduate students who have/will begin their studies this year. I was also invited to collaborate with Robin Kimmerer to synthesize the state of knowledge on bryophyte communities in eastern old-growth forests. Our book chapter will be submitted to the editor by the end of the summer.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2013

a. Course(s) to be offered

EFB202 – Ecological Monitoring and Biodiversity Assessment

b. Proposed research activity

- I will be collaborating with Robin Kimmerer to write a chapter on bryophyte communities for a book, “Science of Eastern Old-Growth Forest,” edited by Joan Maloof, and to be published by Trinity University Press.
- Begin collaborating with Melissa Fierke and APHIS personnel to study food sources of emerald ash borer parasitoids in infested ash stands.

c. University, professional society, and public service

- Continued service as EFB Undergrad Curriculum Director, ENB Coordinator, EFB CCAC member, member of Faculty Governance Student Life Committee, and member of the EFB First-Year Experience Team.
- Will continue developing on-line content for EFB Advising Handbook.
- Will be meeting with Provost Bongarten over the summer to begin developing approach for campus-wide schedule reset.
- Graduate Student Teaching Colloquium – workshop on grading student work

2. Fall Semester 2013

a. Course(s) to be offered - EFB 102, EFB132, ESF 296 (integrated bio/chem lab).

b. Proposed research activity

- Continue NSF-TUES research w/ Abrams, Hogan, Luzadis.
- Work with MPS student Emily Van Ness to pilot programming to engage citizen science groups in forest herb restoration activities.
- Work with new MS student Miguel Garmendia to develop techniques to monitor climate change using sensitive plant bioindicator species.
- Work with new MS student Molly Hassett to develop a study of invasive plant distribution in newly acquired easement tracts in Adirondacks.

c. University, Professional society, and public service

EFB Undergrad Curriculum Director, ENB Coordinator, EFB CCAC, Student Life Committee, First-Year Learning Community Team.

3. Spring Semester 2014

a. Course(s) to be offered - EFB104, ESF296 (integrated chem/bio lab), ESF296 (1-credit chem/bio/writing synthesis seminar).

- #### b. Proposed research activity - Continue NSF-TUES research w/ Abrams, Hogan and Luzadis. We will be working toward developing summer-2014 workshops to invite regional biology/chemistry laboratory instructors to participate in and provide outside evaluation for the integrated laboratory and communication seminar instruction.

c. University, professional society, and public service
EFB Undergrad Curriculum Director, ENB Coordinator, EFB CCAC, Student Life Committee,
First-Year Experience.