

ANNUAL REPORT: June 1, 2009 – May 31, 2010
(i.e., Summer 2009, AY 2009-2010)
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:	EFB 202	Eco Monitoring Biodivers Assess	3	142	2
FALL:	EFB 102	General Biology I Laboratory	1	284	15
	EFB 132	Freshman Orientation Seminar	1	115	2
SPRING:	EFB 104	General Biology II Laboratory	1	183	12

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. EFB courses currently listed with service-learning components include: 416/6/1, 486, 518, 521, 532, 446/646.

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>
EFB 495	Undergrad Exp. College Teaching	1	11
EFB 495	Undergrad Exp. College Teaching	2	9

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

4. Guest Lecture Activities

<u>Course No.</u>	<u>Title</u>	<u>No. of Lectures</u>
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II. STUDENT ADVISING

- A. Number of undergraduates for whom you are the student's official advisor _16_ and unofficial advisor _____
- B. Graduate Students: (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 (w/ C. Beier), PhD student, starting date: 6/09.

MEMBER, STEERING COMMITTEE (other than those listed above)

Keith Bowman
James Costello
Mary Penney
Patricia A. Cole
Anne Schlesinger

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Lisa Gencke - Examiner
Shana Gross – Examiner

III. RESEARCH COMPLETED OR UNDERWAY

- A. Departmental Research (unsupported, boot-legged; title - % time spent)
I continued three unfunded, experimental trials to restore forest understory vegetation using volunteer labor. These trials are located at Heiberg Forest, a municipal forest in the Town of Skaneateles, and a forest preserve in Geneva that is owned and managed by the Finger Lakes Land Trust. High school classes (Marcellus and Skaneateles), citizen volunteers and EFB General Biology students have begun trials to monitor the success of direct seeding of several native forest wildflower species.
- 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)
2. Research Proposals pending (include information as in B.1., above).
Abrams, N.A., McGee, G.G., Hogan, E., Luzadis, V., Leopold, D.J. and Stipanovic, A. "Integrated Knowledge-based Experiences for First-Year Biology and Chemistry Laboratories." NSF-TUES \$192,444
3. Research Proposals submitted, but rejected (include information as in B.1., above)
Abrams, N.A., McGee, G.G., Luzadis, V., Leopold, D.J. and Stipanovic, A. "Integrated Knowledge-based Experiences for First-Year Biology and Chemistry Laboratories." NSF-CCLI. \$196,330.

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

Keeton, W.S., A.A. Whitman, G.G. McGee and C.L. Goodale. **In revision.** Late-successional biomass development in northern hardwood-conifer forests of Northeastern United States. Forest Science.

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)

-“New York’s Once and Future (Unremarkable) Woodland Wildflowers.” SUNY-ESF “Naturally New York” Program, 10/15/09, ~30 in attendance

-“Factors Influencing Native Forest Wildflower Diversity.” SUNY-Delhi Dept. of Liberal Arts and Sciences Lecture Series, 11/24/09, ~20 in attendance

-Spring Wildflowers, public walk, Guppy Farm Conservation Area, Skaneateles, 5/1/10, 17 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.

Preserve Management Advisory Committee, Finger Lakes Land Trust.
Conservation Area Advisory Committee, Chair, Town of Skaneateles.

VI. PROFESSIONAL DEVELOPMENT

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

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

2. Professional Society Membership

Association for Biology Laboratory Education
Society of American Foresters
Ecological Society of America

3. Other Professional Activities

a. Editorial activity

Journal (s)

Responsibility

Other (books, symposia, etc.)

b. Reviewer

Journal(s)

No. of manuscripts

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 CCAC
- ENB assessment team
- Coordinator, Freshmen Pre-Orientation Adirondack Experience
- Faculty Search Committee, Informal Biology Education
- CLBS Fellows Selection Committee, w/ C. Whipps
- Assisted with transfer student registration and advising, Jan 17

B. College-level

- Learning Community Management Team
- South Campus Housing Task Force
- Faculty Governance Committee on Instruction – Subcommittee on General Education.
- ESF Graduate Assistant Colloquium – facilitated workshops on Teaching Strategies for Laboratory and Field Experiences (w/ A. Stipanovich, 9/27/09); and Evaluating Written Work (8/28/09).
- McIntire-Stennis Proposal Review

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 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, which I'll continue to award based on your contributions to the department and college this reporting period.

This year I continued to adjust the General Biology labs in order to provide engaging experiences that build student capabilities in scientific inquiry, communication and laboratory skills. Both courses saw some modifications in content and administration, including the development (with Katie D'Amico, graduate assistant) of an introductory genetics lab that demonstrated DNA amplification through PCR and a restriction enzyme digest; and a more engaging microbiology demonstration laboratory that included DNA extraction and protein electrophoresis. The graduate assistants and I continued to emphasize instruction on hypothesis development and testing throughout the year. Students wrote two substantial and several other minor lab reports in each course. We continued to devote a great deal of effort to teaching laboratory techniques, including microscopy, sterile transfer methods, and molecular methods. Once again, I had students demonstrate their laboratory proficiencies through a one-on-one exam with their instructor. However, this year I placed a greater emphasis on this exam, and I believe the students took it more seriously than last year: 95% of students scored higher than 70, and 55% scored higher than 90. This year I provided students an opportunity to prepare and deliver an oral presentation at the end of the spring semester. Student groups presented experimental findings of their laboratory activities from the semester, and I used this activity as a means to conduct student-lead review sessions prior to the lab practical exam. Also, this year, I was finally able to include the participation of several

excellent undergraduate teaching assistants who had taken the course the year before. Their primary role this year was to support and assist the graduate instructors, and help answer student questions during instruction. However, when given the opportunity to lead classroom activities, most of the undergraduates did a superb job. This year, I plan to increase the weekly instructional involvement of the undergraduate assistants in order to provide them with a more meaningful experience.

In addition to synchronizing the laboratory instruction with Melissa Fieke's and Chris Whipps' lecture components, Neal Abrams, Betsy Hogan and I continue to identify themes and content through which we can integrate instruction in our General Chemistry and Biology laboratories and Writing sections. This spring we resubmitted an NSF-TUES proposal to explore student learning gains of an integrated introductory chemistry/biology/writing experience.

Beginning last summer, I took on greater administrative and instructional roles in EFB202. It was during 202 that I was able to observe the improvement in analytical and conceptual capabilities of the first-year student cohort during their first three semesters. And I further realized the degree of continuity that I can develop between the freshman biology laboratories and EFB202 with regard to student capabilities in lab skills; basic experimental design; and data management, analysis and interpretation. I have already begun to instruct the General Biology laboratory students on aspects of hypothesis development, experimental design and data interpretation in manners that I believe lays the groundwork for a more successful EFB202 experience.

Through my involvement in EFB202, I implemented or coordinated student learning outcome assessments to be used for EFB's Middle States accreditation. I coordinated diversity-related assessments with a number of instructors; developed a student peer-review evaluation tool to assess student group work; and restructured the EFB202 Research Symposium evaluations to permit assessment of student oral presentation skills and hypothesis testing skills. Further, I have contributed to the efforts to establish a system to compile and integrate assessment data for the department.

I had the pleasure of collaborating with Annie Woods at the AEC to develop the first Pre-Orientation Adirondack Experience for eleven EFB freshmen (August 22-25). The purpose of that pre-orientation program was to offer incoming students a voluntary opportunity to enjoy informal outdoor experiences, and develop friendships and a sense of community with their new peers prior to their official on-campus orientation. Students participated in a day-long canoe/bushwhack (which included experiencing a mid-summer thunderstorm in the wilderness), whitewater rafting, a High Peak ascent, and a couple evenings of thoughtful discussion and contemplation around evening campfires. The group clearly bonded during their time. They returned to campus to participate in the rest of their freshman orientation with a degree of familiarity and confidence that the rest of their new peers had not yet developed. During the first semester I observed many in the group continue to socialize and study with one another, but it's my impression that the bonds they formed while on the trip have not remained as the students made new acquaintance and friends. I have no information on any long-term benefits that this experience may have had on student performance and retention. Anecdotally, I know several students on the trip have done quite well this year. However, I also know that one student withdrew within two months, one has transferred out of ESF and one has been placed on academic probation.

My service to the college took a variety of forms this year. I continued to enjoy my participation on the ESF Learning Community Team. Once again I contributed to the planning of, and participated in the two day-long Freshmen Retreats last autumn. Interactions with other LC faculty have continued to lead to a number of collaborative ideas for biology/chemistry/writing instruction (described above). In addition, as a member of the COI Subcommittee on General Education, I reviewed numerous student petitions for General Education courses; I was involved in the South Campus Housing Task Force, which was active last spring and summer and served to ensure a smooth transition of our students to housing on the South Campus; and facilitated two different workshops at the ESF Graduate Student Colloquium.

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 coming year I need to continue improving several aspects of the General Biology laboratory. Some labs require only simple refinement, however I need to substantially redirect a couple organismal diversity labs to establish synchrony with the first semester lecture course. Furthermore, I need to identify and implement solutions that improve the preparedness and effectiveness of graduate teaching assistants. This coming year Neal Abrams and I will be coordinating our first 2-3 autumn chemistry and biology labs to link instruction on field and laboratory techniques, and obtain common datasets that can be applied to both courses in an effort to build student capabilities to synthesize information and skills across disciplines. In a further effort to integrate student learning across disciplines, I will be coordinating instruction on analytical and scientific writing with Betsy Hogan this coming autumn.

Now that the biology lab activities are largely planned out and a system of administering the course is in place, I plan to take opportunities to increase contact with EFB students by regularly instructing more lab sections. I believe this can be done in a manner that can also help improve the preparedness of the graduate teaching assistants. I have also begun the process of reestablishing a General Botany course, and hope to be teaching this in autumn '11 or spring '12. Finally, it is also important to me to begin revitalizing my research program on forest ecosystem management, which has been on hold for a couple years.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2010

- a. Course(s) to be offered: EFB 202 (two sections)
- b. Proposed research activity: Monitor experimental wildflower restoration plots at Heiberg and Guppy Falls.
- c. University, professional society, and public service: EFB Pre-Orientation Adirondack Experience (August)

2. Fall Semester 2010

- a. Course(s) to be offered: EFB 102, EFB 132
- b. Proposed research activity
- c. University, Professional society, and public service

3. Spring Semester 2011

a. Course(s) to be offered: EFB 104

b. Proposed research activity

c. University, professional society, and public service