

ANNUAL REPORT: June 1, 2014 – May 31, 2015
(i.e., Summer 2014, AY 2014-2015)
DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY
SUNY-ESF

*****PLEASE DO NOT INSERT TABLES FOR ANY CATEGORIES*****

NAME: Gregory G. 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	Ecol. Monitoring & Biodiv. Assess (organized, administered, and taught during 16 of 36 instructional days)	3	147	2
FALL:	EFB102	Gen Bio I Lab	1	288	14
	EFB132	Freshman Orientation Seminar	1	132	1
SPRING:	EFB104	Gen Bio II Lab	1	176	10

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 Chemistry/Biology Lab I (w/ Neal Abrams)	2	21
	EFB298	EFB Apprenticeship	1	1
	EFB420	Professional Experience	3-5	3
	EFB495	Ugraduate Experience/College Teaching	3	14
SPRING:	EFB420	Professional Experience	1	1
	EFB495	Ugraduate Experience/College Teaching	3	11
	ESF296	Integrated Chemistry/Biology Lab II (w/ Neal Abrams)	2	17
	ESF296	Communication in the Sciences Seminar (w/ Elizabeth Hogan and Neal Abrams)	1	17

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 **27** and unofficial advisor **4**
(four CSTEP advisees: Marian Vargas, Marcus Rosten, Jean-Noel Seri, Orena Wong)

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

-Molly Hassett, MS, start date, 8/13, Habitat Characteristics and Sugar Resources of Emerald Ash Borer Parasitoid Release Sites in New York, 4/15.

-Miguel Garmendia, MS, start date 8/13, The Influence of Environmental Variation on Epiphytic Bryophyte Communities of Sugar Maple (*Acer saccharum* Marsh.) in Northern and Central New York, 5/15.

-Geoffrey Griffiths, PhD, start date 8/14

CO-MAJOR PROFESSOR

-John Wiley, PhD, 8/09 start date (w/ C. Beier)

-Stephen Pecylak, MS, 1/15 start date (w/ M. Fierke)

MEMBER, STEERING COMMITTEE (other than those listed above)

- Monica Bibiana Berdugo-Moreno, PhD (Dovciak)

- Brianna Rosamilia, MS (Folta)

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

- Laura Hansen, PhD (Teal), Examiner

III. RESEARCH COMPLETED OR UNDERWAY

- A. Departmental Research (unsupported, boot-legged; title - % time spent)
- Assessment of Strip Clear-Cutting and Beech Control on Herbaceous Adirondack Northern Hardwood Herbaceous Communities, 1%
- 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 (PI), E. Hogan and V. Luzadis), **\$193,290 total**, \$64,430 current year, 6/12-5/15, extended to 5/16.

McIntire-Stennis Cooperative Forestry Research Program. (PI, with M.K. Fierke), “Nutrient resources associated with establishment and long-term maintenance of emerald ash borer biocontrol agents.” - **\$53,860 total**, \$30,569 current year, 7/14-6/16. Partial support for Molly Hassett (MS, completed 5/15, and S. Pecylak started 1/15).

McIntire-Stennis Cooperative Forestry Research Program, (CoPI with M.K. Fierke), “Restoration of Understory Vascular Plant and Pollinator Assemblages in Post-Agricultural Forests of Central New York.” **\$57,669 total**, \$0 current year, 8/15-9/17, partial support G. Griffiths, PhD student.

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**, \$5000 current year, 4/15-4/18. Partial summer support for G. Griffiths, PhD student.

*Grants obtained by my graduate students:

Geoffrey Griffiths, Garden Club of America, Ecological Restoration Fellowship, **\$8000**

Geoffrey Griffiths, Edna Bailey Sussman Foundation, **\$6370**

2. Research Proposals pending (include information as in B.1., above).

EarthWatch Institute, “Engaging Citizen Scientists in the Restoration of Vascular Plant Diversity to Central New York Forests,” **Total funding amount to be determined per capita, based on number of volunteer participants.** 5/16-8/16.

3. Research Proposals submitted, but rejected (include information as in B.1., above)

National Science Foundation (PI, with K. Donaghy, R. French, L. Crandall), “Environmental Scholars: Developing Civically-Engaged Leaders for Environmental Problem Solving,” **\$610,637**, 1/15-12/18.

Northeastern States Research Cooperative (PI, with M. Fierke), “Engaging Citizen Scientists with Studies of Plant-Pollinator Interactions in the Northern Forest,” **\$104,443**, 8/15-9/17.

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)

Garmendia, M. and G. McGee, "Epiphytic Bryophyte Relationships with Temperature and Relative Humidity in Northern and Central New York" (poster), 1/22/15, New York Society of American Foresters Annual Conference, Liverpool, NY.

Hassett, M.R., G.G. McGee, J.R. Gould and M.K. Fierke, "Availability of Sugar Resources to Emerald Ash Borer Parasitoids at New York State Release Sites" (poster), 10/14, Emerald Ash Borer Research and Technology Development Meeting, Wooster, OH.

Abrams, N., E. Hogan and G. McGee. "Project SYNAPSE: Making Connections between Chemistry and Biology through Communication Arts at the Introductory Level" (poster), 7/13/14, New York State STEM Education Collaborative Institute, Alfred, NY, Available online at:
<http://www.nysstemeducation.org/2014Institute-Presentations.html>.

McGee, G., N. Abrams and E. Hogan. "Integrating Laboratory Sciences, Communication Arts and Technology in the Introductory Post-Secondary Teaching Lab" (10/24/14), Annual Meeting of the Upstate New York Science Librarians Association, Syracuse, NY.

Abrams, N., E. Hogan and G. McGee. "NSF External Program Review of Project SYNAPSE" (6/25-26), Syracuse, NY.

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

-The Nature Conservancy, Tug Hill Preserve Advisory Committee

-Experiential Learning Charter School at Orenda Springs, Board of Trustees

-NY DEC Great Lakes Basin Riparian Opportunity Assessment, Steering Committee

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 of Biology Laboratory Education

3. Other Professional Activities

a. Editorial activity

Journal (s)

Responsibility

Other (books, symposia, etc.)

b. Reviewer

Journal(s)

No. of manuscripts

Forest Science

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 Curriculum Coordination and Assessment Committee
CLBS Advisory Committee

B. College-level

-Faculty Governance Committee on Student Life
-ESF First-Year Experience Team
-ESF Academic Standards Sub-Committee
-CSTEP Advisory Board and Advising
-advised 4 students
- participated in group social outing (2/15)
- led pre-orientation forest walk at Green Lakes State Park (8/18/14)
-ESF New Graduate Student Colloquium – conducted two sessions on evaluating written work (8/21/14)
-Conservation Biology Club Career Day Panel Discussion (3/26/15)

C. University-wide, including Research Foundation

-Served on SUNY Working Group for Transfer Plan in Biology.

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.

I served again this year as EFB's Undergraduate Curriculum Director and Curriculum Coordinator for the Environmental Biology major. In my capacity as UCD I coordinated undergraduate advising for the department; provided departmental orientation to freshmen and August/January transfer cohorts; pre-registered all transfer students; represented EFB at two end-of-semester Academic Standards meetings; worked with Admissions to organize two departmental open houses and five accepted student receptions, and personally participated in six of these seven events; served as ESF representative on the SUNY working group for the SUNY-wide Biology transfer pathway; and maintained current information for EFB program catalog descriptions, 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, provided initial advising for several internal transfer students, and facilitated numerous student petitions. This past year I assumed responsibility for preparing the department's Middle States Accreditation Undergraduate Program Assessment Report, by which I conducted the analyses and delivered summaries of the 2009-12 assessment data for six of the seven majors (all but A&FS), and then worked with the other curriculum coordinators and assessment teams to finalize their assessment in advance of working with Kim Schulz to compile the final departmental report. Immediately after submitting the report, Kim and I set to work with the curriculum coordinators to make final revisions to the seven major assessment plans and develop the data management strategy to gather and archive future assessment data on a timely and consistent schedule. Kim and I also began preparing the EFB Self Study in advance of the SUNY Program Evaluation that is scheduled

for this autumn. This year I have reduced my involvement in organizing, administering and instructing EFB202 at Cranberry Lake, but I have and will continue to provide guidance to J. Fiene on coordinating the course, and will contribute four days of instruction for EFB202.

Last year ('13-14) Kelley Donaghy and I launched a two-year course sequence in Environmental Leadership and Civic Engagement. This initiative emerged from the results of the ESF 2011 National Survey of Student Engagement (compiled by the Student Affairs Committee), which suggested that following compulsory community service in their freshman year, few ESF students continue to engage in community service. Further, we recognized that ESF does not provide any formal study or training in leadership, beyond periodic workshops offered by Student Affairs. Kelley and I believe an opportunity exists to launch a meaningful, structured program in Environmental Leadership at ESF that uniquely integrates aspects of civic engagement. Our first attempt at formal leadership development in '13-14 was to initiate a Sophomore-Junior year experience consisting of an introductory seminar on leadership theory and skills, followed by a practicum in which students design high-impact, service-based professional or research projects that promote civic engagement by their fellow students. Finally, participants were to implement their projects through independent research and internship experiences in subsequent semesters beginning in '14-15. None of our students opted to implement their proposed service projects, due in part to lack of resources. This situation prompted Kelley and me to prepare an NSF S-STEM proposal to develop this initiative as a scholarship program through which we will recruit students with leadership interests and tendencies, and provide ongoing incentives for them to carry out their service-based projects. Although the proposal received good reviews, it was not funded, but we intend to resubmit the scholarship proposal later this summer.

This year I completed the third of a three-year NSF-TUES research initiative with Neal Abrams and Betsy Hogan aimed at exploring innovative approaches to improve first-year student learning gains and attitudes towards STEM disciplines through an integrated chemistry-biology-communications course sequence (Project SYNAPSE). We now have three full years of outcomes assessment data and 5-6 laboratory exercises to develop into peer reviewed manuscripts and teaching modules. I believe the SYNAPSE project outcomes will demonstrate that an integrated first-year experience can be an effective and engaging instructional model, and provide inquiry-based context for a true first-year learning community experience, which we do not offer at ESF. Our students have consistently reported these three years that they enjoyed the integrated approach and valued the built-in support structure that they experienced by taking five courses together as a cohort during their first two semesters. From an instructional perspective, I found the experience of co-teaching three courses with the same faculty colleagues and students to be very enjoyable, stimulating and rewarding. However, the effort of piloting this project was substantial for Neal, Betsy and me, and we need to assess the benefits, costs and practicalities of continuing or expanding the experience in future years. Also, this spring two very productive MS students (Molly Hassett and Miguel Garmendia) defended their theses, and I will be assisting them in developing their work into 4-5 manuscripts. Molly contributed to understanding the possible ecological relationships that sustain emerald ash borer parasitoids in ash-dominated forests. Miguel's work extended my research goals of understanding the topo-edaphic conditions and disturbance impacts that influence epiphytic communities in northern hardwood systems. I currently have two new graduate students (Stephen Pecylak and Vernon Coffey) who will be following-up on this research. Finally, Geoff Griffiths has initiated his dissertation research on interactions between pollinator and forest herbaceous communities in post-agricultural secondary forests. Wendy Burgess will be joining my lab this fall to collaborate with Geoff in developing volunteer-based herb restoration efforts.

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)

I will continue to prioritize my research program this year. The 3-year SYNAPSE project is completed, so Neal Abrams, Betsy Hogan and I will be finalizing, publishing and presenting results of the integrated first-year laboratory and communication curriculum, and the integrated lab modules. I will be working with my two recently finished MS students (Hassett and Garmendia) to submit several manuscripts for peer review, and will continue developing a line of research with Melissa Fierke and other collaborators at USDA-APHIS to understand the ecological interactions that limit establishment of biological control agents on emerald ash borer. Further, I am building a research program in forest herbaceous community restoration and citizen science that now incorporates two graduate students and several undergrad students and will continue developing that work. I intend to prioritize the incorporation of best practices in scientific teaching and active learning in more of my General Biology laboratory modules and to make more explicit linkages to these techniques with my graduate and undergraduate teaching assistants. My summer and fall will include making preparations for the Department SUNY Program Evaluation.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2015

a. Course(s) to be offered

-Will contribute to EFB202 instruction (4 days) and continue advising new instructor of record.

b. Proposed research activity

-Resubmit NSF SSTEM grant w/ K. Donaghy and R. French.

-Develop field methods on understory herb restoration and pollinator interactions w/ G. Griffiths

-Establish new M.S. student Vern Coffey at Huntington Forest to conduct pre-harvest inventories

-Integrate new M.S. student W. Burgess to conduct citizen science assessment of forest herb restoration research.

-Facilitate parasitoid behavioral study w/ S. Pecylak and M. Fierke

-Facilitate stand composition/structure assessment at EAB parasitoid release sites in MI and MD w/ USDA.

-Finalize and submit two manuscripts from M. Hassett thesis.

-Finalize and submit three manuscripts from M. Garmendia thesis.

-Develop manuscripts and teaching modules from SYNAPSE project w/ N. Abrams and E. Hogan.

c. University, professional society, and public service

- Develop self-study for EFB SUNY Program Review

- Deliver two mini-workshops (w/ E. Hogan and N. Abrams) at ABLE Conference, Boston University.

2. Fall Semester 2015

a. Course(s) to be offered

-EFB 102 (15 sections)

-EFB 132 (1 section)

b. Proposed research activity – ongoing from summer

-Deliver paper (w/ Hogan and Abrams) on integrated first-year curriculum at SUNY Stem Conference

c. University, Professional society, and public service

EFB Curriculum Director

ENB Curriculum Coordinator

EFB CCAC

EFB SUNY Program Review

3. Spring Semester 2016

a. Course(s) to be offered

-EFB 104 (11 sections)

b. Proposed research activity – ongoing from fall

c. University, professional society, and public service

-EFB Curriculum Director

-ENB Curriculum Coordinator

-EFB CCAC