NAME: Melissa K. Fierke, Associate Professor, Forest Entomology

I. INSTRUCTIONAL ACTIVITIES

1. Regular Course Offerings

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Title</th>
<th>Credit Hrs.</th>
<th>No. Students</th>
<th>No. of Lab. Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUMMER:</td>
<td>EFB202 Entomol, Stats, Projects (13 days)</td>
<td>3</td>
<td>80</td>
<td>Session A &amp; C</td>
</tr>
<tr>
<td>FALL:</td>
<td>EFB101 General Biology I</td>
<td>3</td>
<td>311</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EFB797 EFB Core Course</td>
<td>1</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>SPRING:</td>
<td>EFB797 EFB Core Course (w/ J. Cohen)</td>
<td>1</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

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.

None.

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

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Title</th>
<th>Credit Hrs.</th>
<th>No. Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>FALL:</td>
<td>EFB298 Research Internship</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>EFB420 EFB Internship</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>EFB495 UG College Teaching</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>EFB498 Independent Research</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>SPRING:</td>
<td>EFB298 Research Apprenticeship</td>
<td>1, 2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>EFB420 Prof Internship</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>EFB498 Independent Research</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>EFB798 Research Problems</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>EFB898 Professional Experience</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

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

SUMMER: BOCES High School Program at Cranberry Lake (7 days) (34 students)

4. Guest Lecture Activities

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Title</th>
<th>No. of Lectures</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
II. STUDENT ADVISING

A. Number of undergraduates for whom you are the student’s official advisor 23 and unofficial 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
Christopher Foelker PhD 07/11
Michael Parisio MS 07/12-12/14 Biological control parasitoids of emerald ash borer: assessment and applications of current monitoring methods
Michael Jones PhD 08/13
Dana Brennan MS 05/15

CO-MAJOR PROFESSOR
Joelle Chille (w/ C Whipps) MPS 01/12-8/14 New biological and cultural control methods of the non-native nursery pest Xylosandrus germanus
Stephanie Nicks (w/ B Folta) MPS 08/14
Stephen Pecylak (w/ G McGee) MS 01/15
Giuseppe Tuminello (w/ T Volk) MS 08/14
Nicholas Piedmonte (w/ S Shaw) MS 01/15

MEMBER, STEERING COMMITTEE (other than those listed above)
Cheryl Bondi PhD 08/10
Zachary Smith MS 01/13
Molly Hassett MS 08/13-5/15 Habitat characteristics and sugar resources of emerald ash borer parasitoid release sites in New York State
Geoffrey Griffiths PhD 08/14
Nichole Henger MS/MFA 08/14

CHAIRMAN OR READER ON THESIS EXAMS, ETC.
Will Helenbrook PhD Examiner 10-14 Effects of ecological disturbance on parasite communities in both people and mantled howler monkeys living in Ecuador
Daniela Manuschevich PhD Chair 11-14 Linking policy to changes in ecosystem benefits: a socio-ecological approach to land use change in Chile
Georgia Keene MS Examiner 12-14 Spatial ecology and phenology of the inland barrens buck moth, Hemileuca maia (Drury) at the Albany Pine Bush Preserve
Miguel Zapata MS Examiner 5-15 Influence of environmental variation of the epiphytic bryophyte assemblage on sugar maple in northern and central New York

III. RESEARCH COMPLETED OR UNDERWAY

A. Departmental Research (unsupported, boot-legged; title - % time spent)
I am working on a project with USDA APHIS, USDA ARS, NYDEC, NYDAM, & New York State Parks, to quantify dispersal of emerald ash borer parasitoids along a linear corridor. 2%
I am working with Bekka Brodie, as her postdoctoral advisor, to quantify presence and abundance of cerambycids of conservation interest in Romanian Forests. Synergy Chemicals and USDA APHIS have provided lures and traps for the research. 2%
My lab is working with Rainbow Tree Care on a study evaluating new formulations of emmectin benzoate to save large trees. They are compensating us for this research by purchasing a chainsaw for the lab. 1%
NY DEC provides summer field research transportation (a vehicle with gas and repairs included). Also, provides support via personnel to help with EAB 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)


M.K. Fierke. Assessing compatibility of insecticides and biocontrol for controlling emerald ash borer in urban environments. 5/15-4/16. $20,000. Cooperative Workplan with J. Gould, USDA APHIS. Used as a topper for Mike Jones (PhD student) and an UG technician.


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

J.J. Duan, J.D. Vandenberg, D. McCullough, M.K. Fierke, L. Bauer, T. Poland, C. Sadof, R. Van Driesche, M. Whitmore. Areawide management of the invasive emerald ash borer to protect U.S. nursery, urban, and natural forest ecosystems. USDA-ARS. $1,200,000 ($200,000 to ESF).

T. Volk, et al. Expansion and integration of shrub willow crops with forest biomass and other landscape elements for bioenergy, bioproducts, and bioremediation.

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

Greg McGee, M.K. Fierke. Engaging citizen scientists with studies of plant-pollinator interactions in the Northern Forest. $104,443. NSRC. Final reviews were >3 (3 = very good, 4 = excellent).

IV. PUBLICATIONS
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)

Careers in Biology, Ed Smith AVID middle school students, 6th, 7th, 8th grades (100 students + teachers).
E. Invited Research Presentations


V. PUBLIC SERVICE

A. Funded Service (include consulting activities)

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

2. Industrial and Commercial Groups, etc.

Reviewed Pearson’s Tough Topics modules

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

Serve as a science advisor to NYDEC on emerald ash borer and other forest invasives and attend meetings in Albany as needed.

Serve as co-director, along with Mark Whitmore (Cornell Natural Resources Dept), for the New York Forest Health Advisory Council. In this position I organize & facilitate annual/semi-annual meetings at ESF.

I serve on the City of Syracuse Emerald Ash Borer Task Force attending monthly meetings with other collaborators, e.g., Steve Harris, the Syracuse City Arborist, Jesse Lyons, Cornell Cooperative Extension, David Coburn, Onondaga Director of the Environment. I am a member of several sub-committees where we work on developing and implementing an emerald ash borer preparedness plan for the City of Syracuse and Onondaga County.

Answered questions from the public on insects/arthropods throughout the reporting period.

Organized the entomology portion of the Presidential Bioblitz on Onondaga Lake, 8/14.


VI. PROFESSIONAL DEVELOPMENT

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

2014 Presidential Award for Public Service/Outreach

B. 1. Activities in Professional Organizations (offices held, service as chairman, member, participant or consultant) - None

2. Professional Society Membership

Entomological Society of America

Canadian Entomological Society
3. **Other Professional Activities**

   a. Editorial activity - Associate Editor, Forest Science (Society of American Foresters)

   b. Reviewer

<table>
<thead>
<tr>
<th>Journal(s)</th>
<th>No. of manuscripts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and Forest Entomology</td>
<td>1</td>
</tr>
<tr>
<td>Canadian Entomologist</td>
<td>3</td>
</tr>
<tr>
<td>Northeastern Naturalist</td>
<td>1</td>
</tr>
<tr>
<td>Environmental Entomology</td>
<td>1</td>
</tr>
<tr>
<td>Journal of Pest Management</td>
<td>1</td>
</tr>
</tbody>
</table>

   Note: for 2 reviews, I mentored one of my PhD students through the review process (with permission)

   Graduate Women in Science (GWIS) Fellowship Review Committee – 2 applications

   c. Participation (workshops, symposia, etc.)

<table>
<thead>
<tr>
<th>Symposia organized</th>
<th>Date</th>
<th>Place</th>
</tr>
</thead>
</table>

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

D. **Foreign Travel (Where, When, Purpose)**

   None

VII. **ADMINISTRATIVE AND SERVICE RESPONSIBILITIES (include committee participation)**

A. **Department-level**

   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

B. **College-level**

   Secretary, Faculty Governance

   Faculty Governance Executive Committee

   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

   Athletics Committee

   First Year Experience – Meetings and participated in the Freshmen Learning Community Retreat in September 2014

   Graduate Assistant Colloquium on Teaching and Learning Blackboard training

   Development of a college biology course, in collaboration with Outreach and local high school teachers and administrators, now offered in 3 local high schools

   December Senior Soiree
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 taught General Biology for the seventh year with >320 students (a college enrollment record). I supervised three graduate and six undergraduate teaching assistants along with their workshops and grading - all went smoothly with overall class evaluations again strong for the two lecture sections. I facilitated the 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 as well as working with my PhD grad, Chris Foelker, to provide an overview of Philosophy of Science. I oversaw five internships summer and fall 2014. Two students worked on research projects under me this past fall/spring and one of them presented at ESF’s Spotlight on Research. I’ve written >20 UG student recommendation letters with many resulting in successful internships, positions, or scholarships. I am happy with the current state of my research program and the progress of my graduate students. We have several publications submitted and are working on many more. Three of my graduate students presented at the National Entomological Society meeting in Portland, OR this past year, and two at Annual USDA Invasive Insect meeting in Annapolis and the New York Society of American Foresters meeting in Syracuse. I’ve had four new MS students start in August/Jan/May. I have accepted several invitations to speak on my labs research this past year at local, state and regional meetings, but have passed on the opportunity to Chris Foelker, my PhD student finishing up, so he can network and hopefully find a position when he finishes. I have also had to turn down a couple of invitations. Particularly noteworthy is that Chris received the EFB Outstanding PhD award for EFB this past spring. Mike Jones (PhD) and Mike Parisio (MS) also received awards via the Stegeman Fellowship to support their travel to the Portland ESA meeting.

I served on six departmental and college committees as well as taking an active part in the ESF First Year Experience Committee, working with other faculty and Student Affairs staff on student retention and success. 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’ve continued my entomology outreach efforts, doing presentations and media interviews, however, I now pass most opportunities to my graduate students who are doing an excellent job of taking them on, being enthusiastic and getting our science out there.

Lastly, I received the 2014 President’s Award for Community Service this past year for the work I have done on the Bike Safety Committee, advocating for bicyclists in the community, and outreach efforts for emerald ash borer. I am continuing community engagement with new partnerships with Common Councilor Nadar Maroun on deer density issues along with Brian Underwood (ESF). This ties into newly funded research (with Steve
Shaw, ERE) on distribution and densities of black legged deer ticks and tick borne disease prevalence, with an emphasis on Lyme disease. We have presented at a meeting with the Onondaga Health Commission and will be working with them and the NY Department of Health on this salient issue.

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 fall I will again be teaching EFB101, General Biology, and I aim to incorporate more active learning as well as a new technology called Learning Catalytics in the classroom. I will again facilitate the EFB Core Course in the fall semester and bring in Shannon Farrell to help with the philosophy of science portion. I plan to again co-facilitate a seminar on scientific writing in the spring semester with the goal of all students producing a research proposal. I will continue my outreach and service efforts on behalf of ESF and EFB and will explore professional development avenues, including attending conferences and workshops in the coming year as my teaching load allows.

A new MPS student will be starting in the fall in my lab and I am very much looking forward to working with her and my new MS graduate student as well as continuing working with my current grads, mentoring them through graduate school, facilitating their research projects, making sure they publish their results, and cultivating professional positions for them. I plan to again attend the National Entomological Society of America conference in Minneapolis MN this coming fall and have funding so that all of my current graduate students can attend and present their research. We will all be doing outreach and recruiting graduate students into our entomology program at ESF. I will also attend the Invasives Meeting in Annapolis MD in Jan 2016 with my graduate students where we will present our research. I will continue to write grants to fund new students and am determined to explore other avenues of funding considering the reality of reduced funding opportunities for traditional entomological research.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

   1. Summer 2015
      a. Course(s) to be offered: Entomology, stats & supervise projects for CLBS EFB202
                                    Facilitate BOCES high school program at CLBS
      b. Proposed research activity
          I will be spending a great deal of time this coming summer on a several projects. One is a parasitoid dispersal study south of Rochester on a 15 km stretch of the Genesee Greenway. Another is a phenology study looking at synchrony of EAB parasitoids and life stages of EAB. Another is an integrated pest management project aimed at determining if parasitoid releases along with insecticides can decrease EAB populations.

         Mentoring the following graduate student research:
         Chris Foelker (PhD) will finish his dissertation research on Sirex noctilio.
         Mike Jones, (PhD) will be working on EAB phenology and several other EAB projects, including gathering dendroentomological data on establishment and landscape data on dispersal.
         Nick Peidemonte is assessing distribution and densities of black legged ticks and prevalence of tick borne diseases. We are partnering with NY DOH to do the disease assessments.
         Giuseppe Tumminello is identifying and quantifying pollinators associated with willow biomass plantings on the Solvay waste bed in Syracuse.
         Stephen Pecylak is evaluating attraction of EAB parasitoids to different colors to maximize trapping methods.
Dana Brennon started in May on her MS research on EAB. Dana is the recipient of the 2015 Simeone Forest Entomology recruitment award. Stephanie Nicks is finishing up her MPS via an internship with the Town of DeWitt Naturalist on a EAB.

Supervising/mentoring the following undergraduate student research:
Jared Carpentier, Brad Winkleman, and Elliott Hunsinger, (ESF UGs), are working in the lab on EAB and EAB parasitoids. Brad will be developing a research project.
Terrance Caviness and Richard Rich (ESF UGs) are working with me and G. McGee evaluating stand and vegetation data in EAB parasitoid release sites.
Ian Kenny (ESF UG) is doing an internship with NY DEC this summer and doing research on methods to trap *Sirex noctilio* and *Sirex nigricornis*.
Brigette Wierzbicki (ESF UG) is working with Nick Peidmonte doing tick collections and will be developing a project to quantify small mammal populations in East Syracuse to overlay tick data and deer data collected by one of Brian Underwood’s grad students.
Julia Hart (ESF UG) is doing an internship with NY DEC this summer and will be developing a Forest Health project on Southern Pine beetle.

c. University, professional society, and public service
I will give presentations at the Graduate Teaching Assistant Colloquium as well as Freshman Orientation.
Serve as Associate Editor, Forest Science.

2. Fall Semester 2015

a. Course(s) to be offered - EFB101. Gen Bio I: Organismal Biology and Ecology 3 credits
EFB797 EFB Core Course (w/ S. Farrell) 1 credit

b. Proposed research activity
*S. noctilio*, emerald ash borer, EAB parasitoids, and tick research.

c. University, professional society, and public service
Chair, Bicycle Safety Committee
Sustainability Committee
Secretary, Faculty Governance
Faculty Governance Executive Committee
Athletics Committee
Co-Chair EFB Graduate Program Advisory Committee
First Year Experience member
Associate Editor, Forest Science

3. Spring Semester 2016

a. Course(s) to be offered
EFB566 Systematic Entomology 3 credits
EFB797 Scientific Writing & Research 1 credit (w/ J. Cohen)

b. Proposed research activity
*S. noctilio*, emerald ash borer, EAB parasitoids, and tick research.
c. University, professional society, and public service
   Chair, Bicycle Safety Committee
   Sustainability Committee
   Secretary, Faculty Governance
   Faculty Governance Executive Committee
   Athletics Committee
   First Year Experience member
   Co-Chair EFB Graduate Program Advisory Committee
   Associate Editor, Forest Science

4. Maymester 2016
   a. Course(s) to be offered:
      Forest Health Monitoring