

**ANNUAL REPORT: June 1, 2009 – May 31, 2010**  
**(i.e., Summer 2009, AY 2009-2010)**  
**DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY**  
**SUNY-ESF**

**NAME: Melissa Fierke**

**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>
FALL:	EFB101	Gen Bio I	3	298	
	EFB797 (w/ M. Dovciak)	Adaptive Peaks Grad Sem	1	19	
	EFB797	Non-native Forest Insects	1	4	
SPRING:	EFB796 (w/ K. Adams)	Insect Diversity	2	6	1
	EFB797 (w/ M. Dovciak)	Adaptive Peaks Grad Sem	1	10	
	EFB439	Forest Health Monitoring	3	14	

**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>
EFB420	Internship (ABB)	3	1
EFB420	Internship (Horse stud farm)	5	1
EFB498	Undergrad Teaching	1	1
EFB898	Professional Experience	3	1
EFB498	Research Prob. (Entomopath)	3	1
EFB498	Research Prob. (Cerceris)	6	1

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

None

4. Guest Lecture Activities

Course No.	Title	No. of Lectures
EFB797	Grad Core Course	1
EFB	Evolution	1

**II. STUDENT ADVISING**

A. Number of undergraduates for whom you are the student's official advisor 18 and unofficial advisor 3

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

Peter Rockermann	MS	05/08
Warren Hellman	MS	01/09
Kimberly Dean	MS	01/10

CO-MAJOR PROFESSOR

Patrick Eager	MS	01/08-05/10	An analysis of the <i>Sirex noctilio</i> Fabricus (Hymenoptera: Siricidae) – parasitoid complex in New York State
Christopher Standley	MS	01/10	

MEMBER, STEERING COMMITTEE (other than those listed above)

Paul Bryant	MS	05/10/2010	Kairomonal attraction of the parasitoid <i>Ibalia leucospoides</i> ensiger (Hymenoptera: Ibalidae) to volatiles of <i>Amylostereum areolatum</i> , an obligate fungus symbiont of the European woodwasp, <i>Sirex noctilio</i>
Monica Phillips	MS		
Amanda Dillon	MS	04/20/2010	Distribution and abundance of native solitary bees and wasps in differing habitats of central New York
Caitlin Snyder	MS		

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Phillip Barber	MS	Examiner	
Brandy Brown	MS	Examiner	12/8/2009 Using field experimentation to assess potential colonization of benthic macroinvertebrates in a polluted lake undergoing remediation
Jacob Wickham	PhD	Examiner	12/7/2009 Semiochemicals for the Asian longhorned beetle, <i>Anoplophora glabripennis</i> (Coleoptera: Cerambycidae)
Brian Hoven	MS	Examiner	12/3/2009 The influence of parasitoids and predators on buckmoth ( <i>Hemilucca maja</i> ) populations in the Albany Pine Bush Reserve

### **III. RESEARCH COMPLETED OR UNDERWAY**

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

NY DEC provided summer field research transportation (a truck and a car with gas and repairs included). Also, provided employees to help with EAB research and hired one of my grads as a summer forestry technician.

#### 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)

Doug Allen, Melissa Fierke, USDA Forest Service, Survey of Siricidae (Sirecinae) and their parasitoids in the pine forests of central New York state, with special emphasis on the exotic *Sirex noctilio*, \$63,074, 08/07-05/10.

Melissa Fierke, D. Parry, D. Allen. Evaluating impacts of native parasitoids on the invasive *Sirex noctilio* in New York. McIntire-Stennis Cooperative Forestry. \$79,800, 10/09–9/12.

Claire Rutledge, Philip Careless, Colleen Teerling, Melissa Fierke. Degree day modeling and captive colony research for *Cerceris fumipennis*. \$48,000. (~\$10,000 to ESF).

Colin Beier, J. Gibbs, M. Fierke, M. Mitchell, M. Dovciak. Impacts of acidic deposition and soil calcium depletion on terrestrial biodiversity and food webs in Northern hardwood forest ecosystems. Northern States Research Cooperative. \$150,000.

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

M. Fierke, Dylan Parry. Assessment of *Pinus* defenses against the exotic *Sirex noctilio* and its fungal symbiont *Amylostereum areolatum*. Forest Service RFP. \$74,981.

Melissa Plemmons, M. Fierke, R. Kimmerer. NYS Parks Emerald Ash Borer Prevention and Preparedness Through Education and Identification of Unique Imperiled Ecosystems in the Great Lakes Watershed. \$375,566.

M.K. Fierke, J. Vandenberg, M. Whitmore, J. Carlson. Emerald Ash Borer Rapid Response Management in New York. Great Lakes Research Initiative. \$208,405.

M. Fierke. Translocation of *Cerceris fumipennis* colonies for use as a detection and delimitation tool for emerald ash borer. USDA Forest Service, FHP. \$65,000.

M. Fierke. Improving efficacy of purple prism traps on girdled ash trees via exploitation of emerald ash borer “paratrooper copulation” mating behavior. USDA Forest Service, FHP. \$38,000.

M.K. Fierke, J. Vandenberg, M. Whitmore, J. Carlson. Emerald Ash Borer Rapid Response Management in New York. USDA Forest Service, FHP. \$133,315.

D. Parry, M.K. Fierke. Quantifying phenology and performance of *Sirex noctilio* and its parasitoid complex on different pine hosts. USDA Forest Service, FHP. \$87,622.

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

M. Fierke, C. Beier. Diversity and abundance of arthropod communities along a Ca gradient in the Adirondacks. SUNY-ESF Seed grant. \$8,000.

### **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

M.K. Fierke, F.M. Stephen. 2010. Historic populations of red oak borer (Coleoptera: Cerambycidae) in living northern red oaks from the Boston Mountains of Arkansas. Can. J. For. Res. 40: 679–686.

- L. Haavik, M.K. Fierke, F.M. Stephen. 2010. Factors affecting suitability of *Quercus rubra* as hosts for *Enaphalodes rufulus* (Coleoptera: Cerambycidae). *Env. Entom.* 39:520-527.
- M.K. Fierke, F.M. Stephen. Variation in phenolic composition of oaks attacked by red oak borer, *Enaphalodes rufulus* (Haldeman) (Coleoptera: Cerambycidae) a native wood-boring beetle. *J. Chem. Ecol.* In revision.
- P.T. Eager, D.C. Allen, M.K. Fierke. Development of optimal sampline methods for within-tree distributions of the *Sirex noctilio*-parasitoid complex in New York State. In friendly review.
- P.T. Eager, D.C. Allen, M.K. Fierke. Analysis of percent parasitism, sex ratios and emergence phenologies of the *Sirex noctilio*-parasitoid complex in New York State. In friendly review.
- P.J. Rockermann, C. Landis, M.K. Fierke. Abundance of ash species (*Fraxinus*) in riparian forests of New York: Implications for invasion by emerald ash borer. In friendly review.

B. Non-refereed Publications

- M.C. Whitmore, M.K. Fierke. 2010. Emerald ash borer is now in New York: An update. *The New York Forest Owner.* 48:14-15.

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

- Stephen, F. M., L. J. Haavik, M. K. Fierke, J. J. Riggins, L. D. Galligan and J. M. Guldin. 2009. History and dynamics of red oak borer in Arkansas. IUFRO conference "Forest insects and environmental change". Jackson Hole, Wyoming. September 27 - October 2, 2009.
- M. Bohne, D. Souto, C. Teerling, B. Payton, C. Rutledge, C. Burnham, J. Weimer, J. Weaver, T. Hanson, M. Fierke, W. Hellman, E.R. Hoebeke. Biosurveillance of Buprestidae in New York and New England. 2010 Invasive Species Conference. Annapolis MD.
- Stephen, F. M., L. J. Haavik, M. K. Fierke, J. J. Riggins, L. D. Galligan and J. M. Guldin. 2010. The recent oak decline and red oak borer outbreak in Arkansas. Southern Hardwood Forest Research Group. Stoneville, MS. Invited Presentation.
- M.K. Fierke, P. Eager, P. Rockermann, W. Hellman. 2009. Finding a niche in northeastern forest entomology – emerald ash borer and *Sirex noctilio*. Annual Meeting of the Entomological Society of America. Indianapolis, IN.
- P.T. Eager, D.L. Allen, M.K. Fierke. Investigating the *Sirex noctilio* (Hymenoptera: Siricidae) - parasitoid complex in New York State. 12/2009. Annual Meeting of the Entomological Society of America. Indianapolis IN. Oral presentation, 2<sup>nd</sup> place - student competition for President's Prize.
- P.J. Rockermann, D. Parry, M.K. Fierke. Annual Meeting of the Entomological Society of America. Indianapolis IN.
- W.E. Hellman, M.K. Fierke. 2009. Species richness of Buprestidae as sampled by *Cerceris fumipennis*. Annual Meeting of the Entomological Society of America. Indianapolis, IN. Poster Presentation.
- W.E. Hellman, M.K. Fierke. 2010. A Promising Alternative Survey Method for Emerald Ash Borer Using the Wasp *Cerceris fumipennis*. NY Society of American Foresters Annual Winter Meeting. Syracuse, NY.
- W.E. Hellman, M.K. Fierke. 2010. Species richness of Buprestidae as sampled by *Cerceris fumipennis*. Spotlight on Student Research. SUNY ESF. Syracuse NY. Poster Presentation.
- E. Gustafson, M.K. Fierke. 2010. Investigations of Fungal Entomopathogens of *Sirex noctilio* F. (Hymenoptera: Siricidae) in Central New York. Spotlight on Student Research. SUNY ESF. Syracuse NY. Poster Presentation.

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

- M.K. Fierke. Plant/Insect Interactions: plant chemical defenses and communication. American Chemical

Society meeting, Syracuse NY. 7/09. ~50.

Going Green segments: Emerald ash borer: <http://www.esf.edu/center/goinggreen/ashborer.htm>  
& Channel 10 News Digger wasps: <http://www.esf.edu/center/goinggreen/ashborer2.htm>

Syracuse Post Standard:

6/18/2009 "Beetle fatal to ash trees found in New York state"

[http://www.syracuse.com/news/index.ssf/2009/06/beetle\\_fatal\\_to\\_ash\\_trees\\_foun.html](http://www.syracuse.com/news/index.ssf/2009/06/beetle_fatal_to_ash_trees_foun.html)

Front page Sunday paper 11/15/2009 "How a tiny beetle can take down a mighty ash"

[http://www.syracuse.com/news/index.ssf/2009/11/how\\_a\\_tiny\\_beetle\\_can\\_take\\_dow.html](http://www.syracuse.com/news/index.ssf/2009/11/how_a_tiny_beetle_can_take_dow.html)

"Emerald ash borer killing ash trees" video:

[http://videos.syracuse.com/post-standard/2009/11/emerald\\_ash\\_borer\\_killing\\_ash.html](http://videos.syracuse.com/post-standard/2009/11/emerald_ash_borer_killing_ash.html)

W.E. Hellman, M.K. Fierke. Biosurveillance: Using *Cerceris fumipennis* to detect emerald ash borer. 8/2009. SUNY-ESF Workshop, Syracuse, NY. 45.

W.E. Hellman, M.K. Fierke. Biosurveillance, a community approach. 11/2009. Cornell Cooperative Extension In-Service Education Opportunity- Invasive Species, Ithaca, NY. 30.

W.E. Hellman, M.K. Fierke. Being proactive about Emerald Ash Borer detection: Advances in monitoring. 12/2009. Society for Conservation Biology. SUNY-ESF, Syracuse NY. 5.

W.E. Hellman, M.K. Fierke. A Promising Alternative Survey Method for Emerald Ash Borer Using the Wasp *Cerceris fumipennis*. 3/2010. North Eastern New York State Nursery Landscape Association Education Day and Trade Show, Cobleskill, NY. 10.

## V. PUBLIC SERVICE

A. Funded Service (include consulting activities) - None

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

2. Industrial and Commercial Groups, etc.

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

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

Participated on the NYDEC scientific advisory response team for the emerald ash borer discovery.

## VI. PROFESSIONAL DEVELOPMENT

A. Professional Honors and Awards (for teaching, research, outreach, etc.) - None

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

Hosted two meetings (July and November) of the New York Forest Health Advisory Council (NYFHAC) at SUNY ESF.

2. Professional Society Membership

Ecological Society of America

Entomological Society of America

Canadian Entomological Society

3. Other Professional Activities

a. Editorial activity - None

b. Reviewer

<u>Journal(s)</u>	<u>No. of manuscripts</u>
Environmental Entomology	2
Economic Entomology	1

Other: Reviewed manuscript for Scanga/Hajek

<u>Agency</u>	<u>No. of proposals</u>
None	

Other

c. Participation (workshops, symposia, etc.)

<u>Name of workshop, etc.</u>	<u>Date</u>	<u>Place</u>
USDA Emerald Ash Borer Conference	10/19-22/09	Pittsburg, PN
NYDEC Emerald Ash Borer planning meeting	1/22/10	Albany, NY

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

NSF CAREER grant luncheon, 4/8/2010

D. Foreign Travel (Where, When, Purpose)

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

A. Department-level

EFB Curriculum and Course Assessment Committee.

Scholarship committees: Roskin undergraduate award to outstanding female senior  
Burgess outstanding PhD student award in ecology  
Stegeman invertebrate ecology graduate award  
Outstanding undergraduate teaching assistant award

Served on committee for the EFB Molecular faculty position.

Attended seminars for the Natural History & Interpretation candidates and the Wildlife searches.

B. College-level

Faculty Outreach Committee, beginning 4/10.

Taught Preorientation for Underrepresented Students 8/18-25/2009.

Faculty mentor for the Society of Conservation Biology SU/ESF chapter.

Member of the ESF Learning Community.

Participated at the Freshmen Learning Community Retreat at Orenda Springs.

Co-hosted blackboard training at the Graduate Assistant Colloquium on Teaching and Learning.

Judged GSA Spotlight on Student Research posters.

May and December convocations as well as May Student Award dinner.

C. University-wide, including Research Foundation - None

**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.

In the fall semester, I taught General Biology for the second year with ~300 students. I supervised two graduate TAs, their workshops and grading, and all went smoothly. I continued to make use of blackboard, posting assignments, quizzes, grades, etc. and contacted students that were doing poorly. I was happy with the end of the course with a 73.7 class average and class evaluations increased slightly to 4.1 and 4.3 for the two lecture sections. I worked with an undergraduate in the spring semester, Erik Gustafson, and he presented a poster at the Student Spotlight on Research on his research into entomopathogens of *Sirex noctilio*. I facilitated two summer internships in 2009, one on the endangered American burying beetle research in NW Arkansas and another on horse-breeding for a pre-vet student in Environmental Science. I am supervising two internships this summer, both involved with emerald ash borer. One is working for the NY-DEC monitoring a native digger wasp and the other is a sophomore at SUNY Fredonia and is monitoring traps hung in girdled ash trees in and around Randolph in SW NY for EAB as well as traps in Allegany State Park for Cerambycids. I again helped coordinate the Adaptive Peaks Graduate Seminar series in both the fall and spring semesters and organized a graduate seminar for invasive forest insect pests. I also developed two new courses, Insect Diversity, which was taught at the graduate level this spring, and Forest Health Monitoring, which was taught as a two-week field course out of Heiberg for Forest Health majors. The Insect Diversity course was wonderful as I finally had the opportunity to teach in my field. The FHM course was a challenge, but the students were good and were overall positive and satisfied with what the course.

I am happy with the progress of my current cadre of graduate students. Pat Eager defended his thesis research and is in the process of submitting two manuscripts on parasitoids of *Sirex noctilio*. He presented his research at the Entomological Society of America annual meeting in Indianapolis and place second in the student competition for his section. Peter Rockermann has also presented his research on the importance of ash in NY riparian zones at several venues, including the annual ESA meeting and is finishing his research on ash-specialists in ash-dominated riparian forests that may face extirpation with the demise of ash due to emerald ash borer. Warren Hellman worked for the NY DEC last summer biomonitoring emerald ash borer using a buprestid-hunting native digger wasp, *Cerceris fumipennis*. He has his first data set documenting current diversity of Buprestid beetles in NY ahead of the non-native parasitoids that have been introduced to control emerald ash borer and will be continuing that research this summer as well as doing a similar study in Michigan at the release sites of the parasitoids and developing translocation protocols for the wasp to improve detection and delimitation techniques for EAB. Warren has also given multiple talks, a webinar, and organized volunteer trainings for using the digger wasp to monitor for EAB. He also won a couple of awards, including funding from the Sussman Foundation and the Stegeman outstanding masters student in invertebrate studies at ESF. Two new students started with me this spring and they have hit the ground running. Chris Standley is continuing on Pat's work on the *Sirex noctilio*-parasitoid complex and Kim Dean is working on entomopathogens of EAB as well as improving efficacy of the current survey protocols for EAB. I have another student that I recruited coming in the fall to work on ecosystem and biomass dynamics associated with the loss of ash in NY state parks.

I've continued my outreach efforts giving presentations at the American Chemical Society meeting and presentations in and around Syracuse. I am trying to pass on these outreach opportunities more to my graduate students and they are doing an excellent job of taking these on, being enthusiastic and getting our science out there, e.g., Pete and Warren manned an entomology display in the ESF booth at the 2009 New York State Fair. I've continued to serve as an active part of the ESF Learning Community committee as well as the EFB curriculum committee this past year and reviewed scholarship applications for four EFB scholarships.

Professional development has included attending conferences and meetings, making contacts in the northeast in an effort to get my name and interests known, finishing publications from my PhD research and postdoctoral work as well as working with two of my graduate students, Pat and Pete, in getting their research written up into manuscripts as well as writing multiple grants. I gave an invited presentation in the forest entomology section “What’s New in Forest Entomology” at the annual Entomological Society meeting in Indianapolis and attended the Emerald Ash Borer conference in Pittsburg to learn more from and network with movers and shakers working in EAB.

#### **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 the lecture section of Biology. I anticipate developing a grad/undergrad course on Insect Ecology for the spring semester that will be taught in alternate years with the Insect Diversity course I taught this past spring. I will continue my outreach and service efforts on behalf of ESF and EFB and will explore professional development avenues, including attending conferences in the coming year as my teaching load allows.

I will continue to finish up publications from previous research as well as working with current graduate students to prepare and submit manuscripts from our research. I will be writing more grants and seeking out volunteering to serve as a reviewer on NSF panels. I am very much looking forward to continuing working with my continuing and new graduate students, mentoring them through graduate school, facilitating their research projects and making sure they publish their results. I have high hopes for future funding for *Sirex noctilio* (two grants in review) research as well as emerald ash borer (5 grants in review). I plan to again attend several conferences this coming year with my graduate students, e.g., Entomological Society of America in San Diego CA, with the anticipation that they will be presenting their research.

#### **B. PROJECTED ACTIVITIES FOR NEXT YEAR**

##### 1. Summer 2010

a. Course(s) to be offered – Teaching the Entomology section of EFB202 at Cranberry Lake

b. Proposed research activity

I am collaborating with Larry Hanks, University of Illinois-Urbana, and Jocelyn Millar, University of California-Riverside, to evaluate efficacy of synthetic compounds for catching Cerambycids in 5 sites in NY. Kim Adams is helping with this (2 northern sites near Wanakena).

I am collaborating with Kamal Ghandi, University of Georgia, evaluating host preferences of *Sirex noctilio* for southern pines. She will be using the Lafayette greenhouses to perform choice tests.

I am working with several collaborators, Mark Whitmore with Cornell Natural Resources Dept., John Vandenberg with the US Ag and Research Station based out of Cornell, and Jerry Carson with the NYDEC to develop and implement management and delimitation of the emerald ash borer infestation in Randolph NY.

Warren Hellman will be biomonitoring for EAB in NY using *Cerceris fumipennis*, developing protocols for translocating colonies and will be documenting the native Buprestid complement here in NY as well as traveling to Michigan to obtain baseline diversity and abundance of buprestids prior to the establishment of Asian parasitoids released against emerald ash borer.



Kimberly Dean, a new masters student, will be working with a collaborator, John Vandenberg, this summer to document potential entomopathogens for EAB near Randolph NY and she will be doing bioassays supervised by John and Leah Bauer with the US Forest Service to ascertain mortality of the Asian parasitoids by *Bauveria bassiana*. Kim is also evaluating using EAB cadavers on sticky traps deployed in the Randolph NY area to increase the trap's efficacy.

Jessica Rohloff is finishing her undergraduate degree here at ESF and will be interning with Jerry Carlson of the NYDEC on invasive species and will also be monitoring two *Cerceris fumipennis* colonies for Buprestids (for Warren's thesis) as well as helping develop a degree-day model for the digger wasp.

Kaytlynn Walters is a sophomore at SUNY Fredonia and a native to Randolph NY. She is on a paid internship with me this summer to monitor traps for EAB in Randolph as well as monitoring a set of traps set up in the Allegany State Park for the Cerambycid trapping.

Chris Standley, another new masters student, will be working on developing a phenology and degree day model for the *Sirex noctilio* parasitoid complex.

Peter Rockemann will be continuing his field research to document Lepidoptera in ash and non-ash NY riparian forests in front of the pending emerald ash borer invasion.

I am helping Caitlin Snyder design and implement her research evaluating salamander diets and arthropod composition and abundance along a Ca gradient in the Adirondacks.

c. University, professional society, and public service

EFB curriculum committee

Review manuscripts as requested and as time permits

2. Fall Semester 2010

a. Course(s) to be offered

EFB101. General Biology I: Organismal Biology and Ecology	3 credits
UMEB Seminar	1 credit
Invasive Forest Pests Seminar	1 credit

b. Proposed research activity

Continuing *S. noctilio* and emerald ash borer research.

c. University, Professional society, and public service

EFB curriculum committee

Review manuscripts and grants as called upon and as time permits

3. Spring Semester 2010

a. Course(s) to be offered

Insect Ecology	3 credits
UMEB Seminar	1 credit

b. Proposed research activity

Continuing *S. noctilio* and emerald ash borer research.

c. University, professional society, and public service

EFB curriculum committee

Review manuscripts and grants as called upon and as time permits