

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: Christopher M. Whipps

I. INSTRUCTIONAL ACTIVITIES

1. Regular Course Offerings

Course No.	Title	Credit Hrs.	No. Students	No. of Lab. Sections
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SUMMER:

FALL: EFB797 Health and Disease of Captive and Wild Fishes 1cr, 11 students

SPRING: Sabbatical leave

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)

Course No.	Title	Credit Hrs.	No. Students
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FALL 2015

BTC298	Rsrch Apprenticeship/Biotech	1	1
BTC420	Internship in Biotechnology	3	2
BTC498	Resrch Prob/Biotechnology	2	1
EFB298	Rsrch Internship/Envrn Biology	1	1
EFB420	Prof Internship/Envrn Biology	3	1
EFB498	Independent Research/Envrn Bio	1	1
EFB899	Masters Thesis Research	2	2
EFB999	Doctoral Thesis Research	4	1

SPRING 2015

BTC420	Internship in Biotechnology	1	1
BTC498	Resrch Prob/Biotechnology	3	1
EFB498	Independent Research/Envrn Bio	3	1
EFB498	Independent Research/Envrn Bio	2	1
EFB498	Independent Research/Envrn Bio	1	1
EFB898	Professional Experience	2	1

EFB899	Masters Thesis Research	9	2
EFB899	Masters Thesis Research	2	1
EFB999	Doctoral Thesis Research	9	1
ESF499	Honors Thesis/Project	3	1

Total for non-scheduled offerings (F&S)= 66 credit hrs

3. Continuing Education and Extension (short courses, workshops, etc.)
 ESF in the high school Biotechnology week. Jul 21-25, 2014. Workshop for high school students.

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 24 and unofficial advisor 6
- 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 (3)

1. Katrina Alger, MS sought. Start Aug 2013
2. Carolyn Chang, PhD sought. Start Jan 2014
3. Cassandra Elliott, MPS sought. Start Jan 2015

CO-MAJOR PROFESSOR (3)

1. William Helenbrook, Ph.D. completed October 2014. Started Aug 2007 (co-advise with Dr. William Shields).
 Effects Of Ecological Disturbance On Parasite Communities In Both People And Mantled Howler Monkeys
 (*Alouatta palliata aequatorialis*) Living In Ecuador
2. Kelly Huffman, MS sought. Start Aug 2013 (co-advise with Dr. John Farrell)
3. Emily Gavard, MS sought. Start Sept 2013 (co-advise with Dr. Sadie Ryan)

MEMBER, STEERING COMMITTEE (other than those listed above)

Ongoing (6)

Geoffrey Eckerlin, PhD candidate (MP Farrell)
 Lauren Goldmann, PhD candidate (MP Weir)
 Andrew MacDuff, MS sought (MP Frair)
 Christopher Foelker, PhD candidate (MP Fierke)
 Amanda Cheeseman, PhD sought (MP Cohen)
 Tess Youker, MS sought (MP Ryan)

Completed in review period (1)

Elaina Burns, MS complete Fall 2014 (MP Underwood).

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

III. RESEARCH COMPLETED OR UNDERWAY

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

Myxozoan parasites of amphibians (boot-legged - 1%)

Survey of wild fish parasites in the Great Lakes and Adirondacks (boot-legged 5%)

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)

Kent ML, **Whipps CM**, Dolan B, Tanguay R. NIH Resource Related Research Projects for Development of Animal Models and Related Materials (R24) (07/1/2013 -06/30/2017) \$858,720 (SUNY Subaward \$370,950). Control and Impact of Diseases in Zebrafish. Role: Conduct outbreak investigations, characterize *Mycobacterium* species, assess disinfection and treatment options.

Supports: Carolyn Chang, PhD Student.

Whipps CM, Fierke MK, Parry D. USDA-CREES/McIntire-Stennis Program (05/01/13-09/30/15) - \$52,000. Development of Molecular Techniques to Inform Management of *Sirex noctilio*, an Introduced Woodwasp. (10% AY) Role: Lead development of molecular biology techniques in parasitoid insects.

Supports: Christopher Foelker, PhD Student.

Farrell J, Kapsinski K, **Whipps CM**. NY-DEC (03/31/2013 – 03/31/2016) - \$715,001. St. Lawrence River Fisheries Management and Research. (2% AY) Co-Investigator. Role: Comparative genomics of male and female pike. Development of a sex-specific PCR assay and application to field studies.

Supports: Kelly Huffman, MS Student.

Cohen J, Ryan S, **Whipps CM**. New York DEC (8/1/12-4/30/2016) \$854,516. Factors Limiting New England Cottontail (*Sylvilagus transitionalis*) Populations in New York: Implications for Habitat Restoration. (5% AY) Role: Genotyping cottontail rabbits.

Supports: Emily Gavard, MS Student & Amanda Cheeseman, PhD student.

Alger KE, **Whipps CM**. New York DEC (6/1/14-12/31/15) \$25,500. Lymphoproliferative Disease Virus (LPDV) in Wild Turkeys (*Meleagris gallopavo*) in New York State, U.S.

Supports: Katrina Alger, MS Student.

Whipps CM. New York DEC (04/01/14-03/31/16) \$132,222. Increasing Capacity for Genetic Analysis at SUNY ESF

Whipps CM, Beal, RE. Syracuse City School District – Smart Scholars Program (07/01/14-08/31/14). \$6,214. Smart Scholars Biotechnology Camp Week.

Cohen J, **Whipps CM**, Ryan SJ. USDA-CREES/McIntire-Stennis Program (8/15/2015 – 9/30/2017). \$51,042. Assessing Use of Newly-Restored Early Successional Forest by the Imperiled New England Cottontail, Using Genetic Dispersal Analysis.

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

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

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

Book Chapters – refereed

Atkinson, S.D., Sojková (Bartošová), P., **Whipps, C.M.** (2015) Approaches for Characterizing Myxozoan Species. In: Myxozoan Evolution, Ecology and Development, Edited by B. Okamura, A. Gruhl, J.L. Bartholomew. pp 111-123; Springer International Publishing.

Fiala, I., Sojková (Bartošová), P., **Whipps, C.M.** (2015) Classification and Phylogenetics of Myxozoa. In: Myxozoan Evolution, Ecology and Development, Edited by B. Okamura, A. Gruhl, J.L. Bartholomew. pp 85-110; Springer International Publishing.

Journal Articles - refereed

Helenbrook, W.D., Stehman, S.V., Shields, W.M., **Whipps, C.M.** (In Review) Effect of Forest Disturbance and Human Encroachment on Parasitism in Ecuadorian Mantled Howler Monkeys. American Journal of Primatology

Foelker, C.J., Fierke, M.K., Standley, C.R., Parry, D., **Whipps, C.M.** (In Review) Host tissue identification for cryptic hymenopteran parasitoids associated with *Sirex noctilio*, the non-native European woodwasp.

Torruella, G. de Mendoza, A., Grau-Bové, X., Chaplin, M. A., del Campo, J., Eme, L., Pérez-Cordón, G. **Whipps, C. M.**, Nichols, K. M., Paley, R., Sitjà-Bobadilla, A., Roger, A. J., Donachie, S., Ruiz-Trillo, I. (In Review) Phylogenomics reveals convergent evolution of lifestyles in close relatives of animals and fungi. Current Biology.

Whipps, C. M., Zhao, Y. (Accepted with Revisions). Synopsis of the species of the genus *Sphaeromyxa* Thélohan, 1892 (Myxosporia: Bivalvulida: Variisporina: Sphaeromyxidae). Systematic Parasitology.

Nogueira, C.L., **Whipps, C.M.**, Matsumoto, C.K., Chimara, E., de Freitas, D., Sampaio, J.L., Cnockaert, M., Palomino, J.C., Martin, A., Vandamme, P., Leão, S.C. (Accepted with Revisions). Description of *Mycobacterium saopaulense* sp. nov., a rapidly growing mycobacteria closely related with members of the *Mycobacterium chelonae-M. abscessus* group. International Journal of Systematic and Evolutionary Microbiology.

Bauer, E.F., **Whipps, C.M.** (In Press) The bass parasites of Oneida Lake, eighty years later. Journal of Parasitology.

Alger, K.E., Bunting, E., Schuler, K., Jagne, J., **Whipps, C.M.** (In Press) Blood test for Lymphoproliferative Disease Virus (LPDV) in Wild Turkeys (*Meleagris gallopavo*) in New York State, U.S. Journal of Zoo and Wildlife Medicine.

Helenbrook, W.D., Shields, W.M., **Whipps, C.M.** (In Press) Characterization of *Blastocystis* species infection in humans and mantled howler monkeys, *Alouatta palliata aequatorialis*, living in close proximity to one another. Parasitology Research.

Helenbrook, W.D., Wade, S.E., Shields, W.M., Stehman, S.V., **Whipps, C.M.** (In Press) Gastrointestinal parasites of Ecuadorian mantled howler monkey (*Alouatta palliata aequatorialis*) based on fecal analysis. Journal of Parasitology.

Chang, C.T., **Whipps, C.M.** (2015) Activity of antibiotics against *Mycobacterium* species commonly found in laboratory zebrafish. Journal of Aquatic Animal Health. 27(2):88-95.

Whipps, C.M., Murray, K.N., Kent, M.L. (2015) Occurrence of a myxozoan parasite *Myxidium streisingeri* n. sp. in laboratory zebrafish *Danio rerio*. Journal of Parasitology. 101(1):86-90.

Liu, Y., **Whipps, C.M.**, Nie, P., Gu, Z.M. 2014. *Myxobolus oralis* sp. n. (Myxosporidia: Bivalvulida) infecting the palate in the mouth of gibel carp *Carassius auratus gibelio* (Cypriniformes: Cyprinidae). *Folia Parasitologica*. 61(6):505-511.

B. Non-refereed Publications

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

February 19-22, 2015. Aquaculture America 2015. New Orleans, LA. *Efficacy Of Disinfectants Used For Surface Disinfection Of Eggs Against Mycobacterium Species*. **Whipps, C.M.** Chang, C.T., Colicino, E.G., DiPaola, E.J., Chen, T., Jabbar Al-Hasnawi, H.

Student presentations

April 15-16, 2015. SUNY-ESF Spotlight on Student Research, Syracuse, NY. Investigating the Effectiveness of Disinfectant Treatments for Inhibiting the Growth of *Mycobacterium* spp. Isolated from Laboratory Zebrafish (*Danio rerio*). Chang, C.T., Colicino, E. G., DiPaola, E. J., Chen, T., Al-Hasnawi, H.J., and **Whipps, C.M.** [Poster – **First Place Award**]

April 15-16, 2015. SUNY-ESF Spotlight on Student Research, Syracuse, NY. Epidemiology and Genetic Analysis of Lymphoproliferative Disease Virus (LPDV) in New York State. Alger, K., Bunting, E., Schuler, K., **Whipps, C.M.** [Poster]

April 15-16, 2015. SUNY-ESF Spotlight on Research, Syracuse, NY. Ex-Situ Conservation of *Capra falconeri heptneri*: A Genomic Analysis to Enhance Captive Breeding Standards. Elliott, C., Huie, J., Greenburg, A., **Whipps, C.M.** [Poster]

April 15-16, 2015. SUNY-ESF Spotlight on Research, Syracuse, NY. Strain typing *Mycobacterium marinum* from outbreaks at zebrafish research facilities. Clemons, B.M., Chang, C.T., **Whipps, C.M.** [Poster]

April 15-16, 2015. SUNY-ESF Spotlight on Student Research, Syracuse, NY. Exploring the Potential for Parasite-mediated Competition: New England and Eastern Cottontails, Invasive Vegetation, and Parasites. Gavard, E. J., Ryan, S. J., Cohen, J., **Whipps, C.M.** [Poster]

April 15-16, 2015. SUNY-ESF Spotlight on Student Research, Syracuse, NY. Sex Determination and Gonadal Development in St. Lawrence River Northern Pike. Huffman, K. A., Farrell, J. M., **Whipps, C.M.** [Poster – **Second Place Award**]

April 2015. Home range and habitat use of New England cottontails in New York. Paper. 71st Annual Northeast Fish and Wildlife Conference, Newport, RI. Cheeseman AE, Cohen J, SJ Ryan, **CM Whipps**.

March 10-12, 2015. Northeastern Forest Pest Council annual meeting. Hanover, NH. Molecular analysis of parasitoid linkages associated with *Sirex noctilio* (Hymenoptera: Siricidae). Foelker, C.J., Fierke, M.K., Parry, D., **Whipps, C.M.**

February 4-6, 2015. American Fisheries Society New York Chapter 2015 Annual Meeting, Lake Placid, NY. Sex Determination and Gonadal Development in St. Lawrence River Northern Pike. Huffman, K. A., Farrell, J. M., **Whipps, C.M.** [Poster]

January 12-16, 2015. USDA Interagency Research Forum on Invasive Species. Annapolis, MD. Establishing host-parasitoid linkages among *S. noctilio*, *S. nigricornis*, and native parasitoids through molecular techniques. Foelker, C.J., Fierke, M.K., Parry, D., **Whipps, C.M.**

January 2015. Home range and habitat use of New England cottontails in New York. Paper. New England Cottontail Annual Technical Committee Meeting, Burlington, CT. Cheeseman A.E., Cohen J, SJ Ryan, **CM Whipps**.

December 13-18, 2014. 7th Aquatic Models of Human Disease Conference, Austin, TX. Investigating the effectiveness of disinfectant treatments for inhibiting the growth of *Mycobacterium* spp. isolated from laboratory zebrafish (*Danio rerio*). Chang, C.T., **Whipps, C.M.** [Poster]

November 16-19, 2014. Entomological Society of America's 62nd Annual Meeting, Portland, OR. Spatial distributions of the European woodwasp (*Sirex noctilio*) and native mortality agents at a pine plantation in the Adirondacks. Foelker, C.J., Parry, D., **Whipps, C.M.**, Fierke, M.K. [Poster]

November 16-19, 2014. Entomological Society of America's 62nd Annual Meeting, Portland, OR. Spatial co-colonization of the European woodwasp (*Sirex noctilio*) and native mortality agents at a pine plantation in the Adirondacks. Foelker, C.J., Parry, D., **Whipps, C.M.**, Fierke, M.K.

October 25-30, 2014. The Wildlife Society Annual Conference, Pittsburgh, PA. *Diagnosis and Surveillance of Lymphoproliferative Disease Virus (LPDV) in wild turkeys in New York State*. Alger, K.E., Bunting, E.M., Schuler, K., Jagne, J.F., **Whipps, C.M.** [poster]

October 15-17, 2014. Student Conference on Conservation Science - New York. New York, NY. *Diagnosing Lymphoproliferative Disease Virus in Wild Turkeys (Meleagris gallopavo)*. Alger, K.E., Bunting, E.M., Schuler, K., Jagne, J.F., **Whipps, C.M.**

August 18, 2014. American Fisheries Society 144th Annual Meeting, Quebec City, Quebec, CA. *Environmental Determinants of Sex Ratio in St. Lawrence River Northern Pike (Esox lucius): Development of a Molecular Sex Identification Tool and Experimentation with Physical and Chemical Variables*. Huffman, K.A., **Whipps, C.M.**, and Farrell, J.M. [Poster]

July 24-27, 2014. The 89th Annual Meeting of the American Society of Parasitologists. *Bass Parasites of Oneida Lake, 80 Years Later*. Bauer, E.F., and **Whipps, C.M.**

June 6-10, 2014. 94th Annual Meeting of the American Society of Mammalogists. Oklahoma City, OK. Survival and home range of New England cottontail (*Sylvilagus transitionalis*) in response to hunting, competition, and habitat composition. Cheeseman A.E., Cohen, J., Ryan, S.J., **Whipps, C.M.** [Poster – **First place award**]

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.

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

American Fisheries Society

American Society of Microbiology

American Society of Parasitologists

3. Other Professional Activities

a. Editorial activity

Journal (s)

Responsibility

Other (books, symposia, etc.)

b. Reviewer

Journal(s)

No. of manuscripts

Diseases of Aquatic Organisms

2

European Journal of Protistology

1

International Journal for Parasitology

1

Journal of Eukaryotic Microbiology

1

Journal of Fish Diseases

1

Journal of Parasitology

2

Molecular Phylogenetics and Evolution

1

Parasitology

2

Parasitology Research

1

Parasites and Vectors

1

Systematic Parasitology

1

Trends in Parasitology

1

TOTAL: 15

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

ESF Curriculum Committee (Jan-Feb 2008, Aug 2008-present). Chair: Kim Schulz.

B. College-level

ESF Institutional Animal Care and Use Committee (Aug 2011-present). **Chair: Christopher Whipps**

ESF Honors Program Faculty Council (Aug 2011-present). Chair: William Shields.

ESF Health and the Environment Curriculum Group Participant (Mar 2011-present)

ESF Academic Research Building Core Team (Apr 2010-present)

C. University-wide, including Research Foundation

SUNY Center for Applied Microbiology (Feb 2013 – present) **Director**

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.

Students

This year, I was pleased to help guide Will Helenbrook to the completion of his PhD (co-advised with Shields). Will landed a job as program coordinator for the School for Field Studies in Peru and is thriving there. He's also had 2 more papers accepted in that time and continues to finish up publishing the work from his PhD. I helped to get support from the DEC to fund the work of my student Katrina on a virus of wild turkeys. Katrina can take credit for a lot of this effort, and the funding has allowed her to process >3000 samples and support her in her final semester this fall. Two students won awards at the Spotlight for Research this year: Carolyn Chang (1st place) and Kelly Huffman, co-advised with J. Farrell, (2nd place). I also serve on other graduate student committees and act as informal advisor to other students as needed. My door is always open to them.

I advise >20 undergraduate students, many of which are pre-health, and from several majors (Biotech, Environmental Biology, Conservation Biology, Wildlife Biology). I help organize internships, research courses, and apprenticeships. Some of these students are working with me directly, but many are finding opportunities outside ESF and that still requires I coordinate with supervisors all over the map. For example, I had a student doing an internship in Thailand this last summer. I am a mentor in the CSTEP program with 2 advisees there as well (one is also my academic advisee). I am the faculty advisor for the Equestrian Club and have had several members of that group working in my lab over the years. I had one honors student this year (Brooke Clemons) who worked amazingly well on a challenging project this year. She is heading to a fully funded graduate program in laboratory sciences. Along with the direct

mentoring and advising is helping these students in applying for internships, jobs, and graduate school. This year I wrote approximately 27 letters of recommendation. I didn't teach my 2 main classes this year because I was on sabbatical, but I did lead a new seminar on fish health. I also spent part of my sabbatical developing new resources for my classes. In particular, I plan to incorporate more case studies into my teaching. I've tested this a few times and students tend to enjoy them.

College/Dept:

This past summer, I tried something new. I taught a week long biotechnology summer course to high school students. This was a great opportunity to highlight what kinds of things we do at ESF, and I was able to talk about the different research on campus as the students learned the basics of molecular biology. As part of this course, we had a zebrafish toxicology lab, which brings up another key contribution from this year, which was helping to get CIRTAS up and running. We spent a lot of time on helping with this and now have a fully operational zebrafish lab for use in my own research, but also has potential for teaching. As the Director of the Center for Applied Microbiology, I allocated funding to support faculty and student projects in a variety of areas. I also supported student travel awards to present on microbiology related projects. The Center purchased equipment to assist with the set up of Hyatt Green's new laboratory, and for the microbiology teaching lab. At the college level, I chair the Institutional Animal Care and Use Committee which is currently overseeing 36 protocols on various vertebrate species (snakes, frogs, salamanders, birds, fish, moose, etc.). The diversity makes for an interesting challenge, but most of the time goes toward the initial review and continuing review of every protocol which is required annually. In addition, the committee conducts facility inspections, oversees training, maintains records, reports to federal agencies, handles any concerns or requests, and so on. In my own evaluation, I believe this committee is running very well given the workload, and is helpful in providing recommendations to faculty so that their research maintains compliance with federal standards. In EFB, I serve on the departmental curriculum committee (CCAC) and have been involved in program assessment for the last several years. Working with members of the Biotechnology major, I took the lead on completing the BTC program assessment which included gathering data, data analysis, and writing the final report.

Professional

In preparation for the Annual Fish Health meeting this summer in Ithaca, I have served on the local organizing committee for the meeting. It has been rewarding to work with colleagues in this process and strengthen connections between ESF and Cornell fish health researchers in the process. John Farrell and I have been collaborating on a Northern Pike genetics project and we recently connected with researchers at the University of Victoria who have been working on a similar problem. Their interest lies in the genetics and techniques, whereas we're more focused only on sex determining genes and evaluating effects in the lab and wild. It turned out that we have the fish and a method to determine gender (as fish get older), and they have the genetics expertise. As such, we've planned a collaboration which could be very productive. I'm really looking forward to seeing how this works as we collect fish this summer. I was on sabbatical this Spring and one goal was to complete a taxonomic synopsis of a genus of myxosporean parasites which required scouring the literature as far back as the 1800's and gathering some obscure papers that were potentially on the verge of being lost to science. I completed this paper, which has now been accepted with minor revisions. I've also focused on developing new resources for my classes and developing a new seminar on population genetics, which I'm excited to teach this fall.

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 summer, I am overseeing several projects that are nearing completion. My grad student Katrina Alger will be completing her lab work and we'll begin to analyze her turkey virus data which includes 1000's of samples from all over the state. With an excellent technician in place, Corinne Michaud, the cottontail rabbit genetics work goes apace and we expect to begin evaluating individual identities of rabbits this summer based on DNA from scats. We will likely begin some population genetic work on deer and analyze the genetic variants of their prion protein sequence with interest in chronic wasting disease. All of the above strengthen our relationship with the DEC, and I am hoping to

convince them to continue supporting our genetic analysis capacity at ESF, bringing dollars and grad student positions here. Also this summer, I am on the organizing committee of the Annual Fish Health meeting which is held in Ithaca this year. It will be a good opportunity to talk about our research at ESF in our own backyard.

I continue to work on the IACUC and Center for Applied Microbiology, the IACUC in particular being especially critical for the function of departmental and college research involving vertebrates. The demands of the IACUC has at least tripled since I began as chair. The goal is to ensure the university and researchers meet federal requirements and ensure that all vertebrate animal research is conducted with the highest standards and ethical considerations.

For teaching, I am developing a new seminar course, Population Genetics. Depending on the response, I hope to continue this as a regular seminar, perhaps alternating years. There will be discussion and hands on use of analysis tools. Many more graduate students are trying to answer questions using population genetics, and there is little support for that. The hope is that this class will provide that support. In addition to this new class, I am developing new resources for Parasitology and Intro Biology courses, with specific emphasis on incorporating more case studies into classroom. I have used some cases in Parasitology, but will be using more in the larger Intro class. In support of this effort, I will be attending a case-based learning workshop in Buffalo this Fall.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2015

a. Course(s) to be offered

b. Proposed research activity

Cottontail genetic identification and parasite analysis
Zebrafish mycobacteriosis
Wild Turkey Lymphoproliferative Disease Virus in NY
Myxozoan phylogeny and evolution
Baseline data on fish diseases in NY state
Northern Pike genomics
Sirex noctilio molecular biology
Genetics of deer and other species for DEC

c. University, professional society, and public service

EFB Curriculum Committee (Jan-Feb 2008, Aug 2008-present). Chair: Kim Schulz.
ESF Institutional Animal Care and Use Committee (Aug 2011-present). **Chair: Christopher Whipps**
ESF Honors Program Faculty Council (Aug 2011-present). Chair: William Shields.
ESC Health and the Environment Curriculum Group Participant (Mar 2011-present)
SUNY Center for Applied Microbiology (Feb 2013 – present) **Director**

2. Fall Semester 2015

a. Course(s) to be offered

EFB453/653 Parasitology
EFB797 Population Genetics

b. Proposed research activity

as above

c. University, Professional society, and public service

as above

3. Spring Semester 2016

a. Course(s) to be offered

EFB103 - General Biology II

b. Proposed research activity

as above

c. University, professional society, and public service

as above