

ANNUAL REPORT: June 1, 2011 – May 31, 2012
(i.e., Summer 2011, AY 2011-2012)
DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY
SUNY-ESF

NAME: Christopher M. Whipps

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>
SPRING:				
EFB103	General Biology II: Cell Biology and Genetics	3cr.	175	
EFB453	Parasitology	3cr	24	1
EFB653	Parasitology	3cr	6	1

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>
-------------------	--------------	--------------------	---------------------

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>
EFB797	Grant Proposals in Fish and Wildlife Studies	1
EFB132	Orientation Seminar	1
EFB796	Graduate Orientation Seminar	1
EFB217	Peoples, Plagues, and Pests	1

II. STUDENT ADVISING

A. Number of undergraduates for whom you are the student's official advisor 27 and unofficial advisor 4

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

Megan Kirchgessner, Ph.D. sought, Start Aug 2009
Kelly Fitzsimmons, MS sought, Start Aug 2010
Eric Bauer, MS sought, Start Aug 2011

CO-MAJOR PROFESSOR

William Helenbrook, Ph.D. sought, Start Aug 2008 (co-advise with Dr. William Shields)
Emily Ogburn, MS sought, Start Aug 2011 (co-advise with Dr. Karin Limburg)
Joelle Chille, MS sought Start Jan 2012 (co-advise with Dr. Melissa Fierke)

MEMBER, STEERING COMMITTEE (other than those listed above)

Completed in review period:

Brooke Reeve, MS completed Summer 2011 (MP Brunner);
Som Mukherjee, PhD complete Summer 2011 (MP Castello);
Max Collignon, MS complete Summer 2011 (MP Teale);
Linnet Cynthia Watson, PhD complete Fall 2011 (MP Stewart);
Kim Dean, MS complete Spring 2012 (MP Fierke);
Yazmin Rivera, PhD complete Spring 2012 (MP Horton/Kretzer);

Ongoing:

Geoffrey Eckerlin, PhD candidate (MP Farrell)
Lauren Goldmann, PhD candidate (MP Weir)
Andrew MacDuff, MS sought (MP Frair)
Weidong Pan, PhD candidate (MP Nakas)
Rosanna Stoutenburg, PhD candidate (MP Nakas)
Mark Leopold, MS sought (MP Farrell)
Leticia Izquierdo, MS sought (MP Nomura)

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Alexander Mueller, MS completed Summer 2011 (Examiner, MP Nomura)
Chengjun Zhu, PhD completed Summer 2011 (Examiner, MP Nakas)
Bo Xi, MS complete Summer 2011 (Chair, MP Mountrakis)
Bo (Amelia) Zhang, PhD complete Spring 2012 (Examiner, MP Powell)
Dominick Skabeikis, MS complete Spring 2012 (Examiner, MP Fierke/Teale)

III. RESEARCH COMPLETED OR UNDERWAY

- A. Departmental Research (unsupported, boot-legged; title - % time spent)
 - Parasitism in Lake Pontchartrain fishes in the post-Katrina era (boot-legged - 1%)
 - Genome sequencing of the emerging salmon parasite *Ichthyophonus hoferi* (boot-legged -1%)
 - Survey of wild fish parasites in the Great Lakes and Adirondacks (boot-legged 5%)
 - Occurrence of the lancet fluke *Dicrocoelium dendriticum* in NY state (boot-legged 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)

Whipps, CM. SUNY-ESF Seed Grant Program (04/01/11-06/30/12) - \$8,000. Molecular Prospecting: Genomic DNA Sequence Data for Myxozoans. (5% AY).

Ringler NH, Schulz KL, Farrell JM, Leopold DJ, **Whipps CM.** National Science Foundation (1/1/10-12/31/12) \$1,757,801. Renovation of Wet Labs and Cyber-Infrastructure to Enhance Integrated Research and Teaching in Aquatic Science at ESF. (5% AY – Co-Investigator. Role: Provide specifics and design for animal rooms, isolation room, microscope rooms).

Whipps CM. NIH Subaward P0274A-A (3/1/10 - 5/31/12) \$60,000. Characterizing *Mycobacterium* species from zebrafish and diagnostic development. (1% AY)

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

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) CoPI with Cohen and Ryan.

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

Schulz KL, Stewart DJ, **Whipps CM,** McKenna JE. Great Lakes Fishery Commission Pre-proposal (1/1/13-12/31/13) \$56,950. Prospects for rehabilitation of threatened lake chubsuckers (*Erimyzon sucetta*), an indicator fish for healthy great lake embayments. (5% AY) CoPI with Stewart and Schulz.

Fierke MK, Parry D, **Whipps CM.** National Science Foundation (9/1/12 – 8/31/15) \$2. Preliminary Proposal: Superabundant Invader Influences on Parasitism of Native Congeners. (5% AY) CoPI with Fierke and Parry.

Whipps CM, Adlard RD. National Science Foundation (4/30/13 – 4/29/15) \$2. Preliminary Proposal: Systematics and Biodiversity of Myxozoan Parasites. (10% AY)

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

Kirchgesner, M.S. Dubovi, E.J., **Whipps, C.M.** (In Review) Disease Risk Surface for *Coxiella burnetii* Seroprevalence in White-Tailed Deer. Emerging Infectious Diseases.

Bauer, E.F., **Whipps, C.M.** (In Review) Comparative Analysis of Native Fish Parasite Communities of Adirondack Lakes With and Without Introduced Fish Species. Journal of Parasitology.

Liu, Y., **Whipps, C.M.,** Gu, Z.M., Huang, M.J., He, C., Yang, H.L. (In Review) Morphological, histological and molecular studies on *Myxobolus musseliusae* from the gill of common carp *Cyprinus carpio*: Revision of *Myxobolus dispar* record in China. Parasitology Research.

Kirchgesner, M.S. Dubovi, E.J., **Whipps, C.M.** (In Review) Use of a novel test for diagnosis and spatial point pattern analysis of bovine viral diarrhea virus seroprevalence in white-tailed deer. Journal of Veterinary Diagnostic Investigation.

Kirchgesner, M.S. Dubovi, E.J., **Whipps, C.M.** (Accepted) Seroepidemiology of *Coxiella burnetii* in Wild White-Tailed Deer (*Odocoileus virginianus*) in New York, United States. Vector-Borne and Zoonotic Diseases.

Whipps, C.M., Fournie, J.W., Morrison, D.A., Azevedo, C., Matos, E., Thebo, P., Kent, M.L. (In Press) Phylogeny of *Calyptospora* (Apicomplexa: Coccidia). Parasitology Research.

- Whipps, C.M.**, Lieggi, C., Wagner, R.A. (In Press) Mycobacteriosis in zebrafish colonies. Institute for Laboratory Animal Research Journal.
- Kirchgeessner, M.S., Dubovi, E.J., Porter, W.F., Zyllich, N.C., **Whipps, C.M.** (In Press) Prevalance and spatial distribution of antibodies to Bovine Viral Diarrhea Virus and Coxiella burnetii in white-tailed deer (*Odocoileus virginianus*) in New York and Pennsylvania. Journal of Zoo and Wildlife Medicine.
- Liu, Y., **Whipps, C.M.**, Gu, Z.M., Zeng, C., Huang, M.J. (2012) *Myxobolus honghuensis* n. sp. (Myxosporea: Bivalvulida) parasitizing the pharynx of allogynogenetic gibel carp *Carassius auratus gibelio* (Bloch) from Honghu Lake, China. Parasitology Research. 110(4):1331-1336
- Whipps, C.M.** 2011. Interrenal disease in bluegills (*Lepomis macrochirus*) caused by a new genus and species of myxozoan. Journal of Parasitology. 97(6), 9-12.

B. Non-refereed Publications

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

- October 31, 2011. University of Oregon, Eugene, OR. *Mycobacterial Disease in Zebrafish: Epidemiology, Detection, Prevention* (Invited speaker)
- October 20, 2011. New York Zebrafish Conference. New York, NY. *Mycobacteriosis in zebrafish colonies: characterization and control*. (Invited speaker)

Co-authored presentations and posters

- March 11-14, 2012. 2012 International Conference on Emerging Infectious Diseases, Atlanta, GA. A tale of anthropogenic disturbance: how forest degradation and human proximity to howler monkey populations influences zoonotic parasitism in both species. W.D. Helenbrook, Shields W.M., **Whipps, C.M.** [Poster]
- April 11, 2012. SUNY-ESF Spotlight on Research, Syracuse, NY. *Identification and preliminary genetic sequencing of the endoparasitic protozoan Blastocystis species in Ecuadorian humans and howler monkeys using PCR-based techniques*. Sanford, J.M., Helenbrook, W.D., and **Whipps, C.M.** [Poster - 3rd Place Award]
- April 12, 2012. SUNY-ESF Spotlight on Research, Syracuse, NY. *A tale of anthropogenic disturbance: how forest degradation and human proximity to mantled howler monkey populations influence parasitism*. Helenbrook, W.D., Shields, W.M., and **Whipps, C.M.**
- April 12, 2012. SUNY-ESF Spotlight on Research, Syracuse, NY. *Trophic cascades of enemy release: linking consumption of invasive round goby to smallmouth bass parasites*. Bauer, E.F., and **Whipps, C.W.**

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)

American Fisheries Society Fish Health Section Technical Standards Committee (appointment June 2010-June 2014)

2. Professional Society Membership

American Fisheries Society (2001-present)

American Society of Parasitologists (2002-present)

International Society of Protistologists (2008-2011)

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

1

International Journal for Parasitology

1

Journal of Parasitology

2

Journal of the World Aquaculture Society

1

Parasites and Vectors

1

Parasitology

3

Parasitology International

1

Parasitology Research

4

total: 14

Agency

No. of proposals

National Science Foundation

1

2 others (not listed to maintain confidentiality)

2

Other

c. Participation (workshops, symposia, etc.)

Name of workshop, etc.

Date

Place

IACUC 101 & A Walk on the Wild Side: a Conference on IACUC Oversight of Wildlife Research. Oct 25-28, 2011. Albuquerque, NM.

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 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: Whipps**

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

ESF Committee on Curriculum (Aug 2010 – present). Chair: John Hassett.

ESF Committee on Curriculum, General Education subcommittee (Sept 2010-present). Chair: Doug Daley.

ESF Academic Research Building Core Team (Apr 2010 – present).

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

C. University-wide, including Research Foundation

VIII. SUMMARY OF SIGNIFICANT ACTIVITIES AND ACCOMPLISHMENTS DURING THIS REPORTING PERIOD, ESPECIALLY THOSE MOST NOTEWORTHY AND RELATIVE TO THE COLLEGE'S AND DEPARTMENT'S MISSION.

One paragraph on each of the following would be most helpful: this past year, what have you done for our students, department/college, and self professionally? NOTE: The information in this section (along with the supporting specific information elsewhere in this report) should be your strongest case for being considered for a discretionary raise, which I'll continue to award based on your contributions to the department and college this reporting period.

Students

This was the first year EFB453/653 Parasitology was offered and it was a pleasure to teach. The class filled quickly with both undergrads and grads and made for a nice balance. Often a challenge with courses made up of both grads and undergrads, I tried something new this year to provide a deeper level of learning for graduate students. In Parasitology, the grad students worked in pairs, with my guidance, to devise and lead a lab. In addition, the grads gave a conference-style presentation to the class on a topic of their choosing on an advanced topic. The idea here is that a grad level offering can be offered concurrently with an undergraduate course if a deeper level of learning is expected of the graduate students, and I believe having them actually teach something is a great way to do this. In EFB103, there were 175 students enrolled and in this class I continued with what has been successful in previous years, and also incorporated the Mastering Biology online system from Pearson Publishing. The site provides practice quizzes, tutorials, movies, and other activities to accompany the course. I plan to use this more extensively next year based on the feedback this past semester. I advise 27 undergraduates from 4 majors, several of which have a pre-health focus including dental, veterinary, medical, and optometry schools. In my laboratory, I had 5 undergraduate students conducting research this year. The work of 2 of these students have contributed strongly to forthcoming publications. At the graduate level, I supervise 4.5 graduate students on broad ranging topics. I also have served on committees as a member, examiner or chair for 18 students in the review period.

Department/College

A new assignment for me this year was to chair the Institutional Animal Care and Use Committee. It was a fortunate coincidence that a special Wildlife IACUC course was offered this past fall in Albuquerque, and with that training and

with the guidance of the previous chair Dr. Nakatsugawa, I have made several steps to streamline ESF's animal care procedures. Some were simply organizational; we now have numbering system for protocols, reviews are carried out electronically, and a master spreadsheet summarizes all ongoing activities. In addition, I have proposed an improved protocol form and forms for protocol amendment and annual review, which were lacking previously. The IACUC chair position occupies about 10% of my time with some weeks being more busy than others, including those with the semiannual meeting and the 2 weeks before summer field season. The IACUC has overseen the approval of 12 protocols in this academic year. Finally, following the most recent inspection in May, we are 100% compliant with USDA regulations, having corrected all previous deficiencies. I also serve on our departmental curriculum committee (CCAC) and the college level Committee on Curriculum (CoC). I enjoy representing our department and the CCAC on the CoC which has seen many course and curriculum proposals, as well as college policies cross our desks. Following each meeting, I provide a summary of the CoC's activities to the CCAC. The CCAC this year has focused on formalizing the different internship and research experience courses as well as assessment of our departmental programs. I continue to be involved in the Academic Research Building committee, which included several half day or day long meetings, providing faculty input as necessary and look forward to the next phase in this project.

Professional

My 2 primary areas of research remain mycobacterial diseases of laboratory zebrafish and parasites of wild fishes. The zebrafish work has produced an invited review (In Press) and 2 other studies that are nearing completion on the disinfection zebrafish facilities and outbreak investigations at zebrafish facilities. In addition, I was invited to speak on this topic at workshops in New York and at the University of Oregon. The fish parasitology work resulted in 5 publications this year, and the amassing of specimens and data to inform future directions. Beyond fishes, I am also collaborating with a colleague in Canada on the spread of the lancet fluke found in sheep, deer, goats, etc., which has helped to strengthen some ongoing collaborations with colleagues at Cornell and the DEC. Four other publications this year are a result of the work of my graduate student Megan Kirchgessner, who will defend in June, and with her likely success, will be my first graduate student to finish. I am entering the third year of a 4 year term on the American Fisheries Society's Fish Health Section's Technical Standards committee, for which I will serve as chair this coming year. This committee is responsible for the production of the AFS-FHS Blue Book, the definitive guideline for fish health diagnostic testing. This is a publication year and the committee of four have updated or invited 15 chapters of the book. I have also recommended a new organizational system for the chapters which will provide greater flexibility and expansion of the Blue Book, and this will be implemented this year. With regard to teaching this was the first year I taught both of my main courses in the Spring semester. By loading up my teaching in one semester, I was able to focus primarily on research in the Summer and Fall. Overall I am pleased with the progress made on my various projects this year, with several reaching the point of publication.

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)

Over the last few years I have homed in on a suite of projects, primarily focusing on zebrafish and myxozoan parasites, but also an interesting array of other projects that will potentially lead to future funding in collaboration with colleagues. This summer I will complete at least 4 studies that require some final analyses and write these up. I will also be collecting new parasite material for genomic DNA sequencing. The next round of NIH grants are due this fall, so my colleague and I will prepare for the renewal of our zebrafish disease work. Into the fall, I will continue these projects and the pathogen diagnostic service for fish diseases. As the IACUC chair I plan to streamline our program further and pursue an online training system that faculty and students can use. I will be chair of the AFS-FHS Technical Standards committee and plan to update the committee protocols as well as update additional chapters. I will continue to serve on the CCAC and CoC and act as an EFB liaison between these committees. I look forward to continuing teaching Parasitology where I can connect my own research to teaching, and provide another invertebrate diversity option for our students.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2012

a. Course(s) to be offered

b. Proposed research activity

Zebrafish mycobacteriosis

Myxozoan development and taxonomy

Genome sequencing of myxozoan parasites

Baseline data on fish diseases in NY state

Biology of the parasite *I. hoferi* from Alaskan salmon

Tracing the distribution of the lancet fluke (*Dicrocoelium dendriticum*) in NY

c. University, professional society, and public service

Continued committee service as listed above

AFS-FHS Technical Standards committee chair

2. Fall Semester 2012

a. Course(s) to be offered

b. Proposed research activity

As in 1b

Genetics and parasites of cottontail rabbits

c. University, Professional society, and public service

As above

3. Spring Semester 2013

a. Course(s) to be offered

EFB103 - General Biology II

EFB453/653 - Parasitology

b. Proposed research activity

As in 2b

c. University, professional society, and public service

As above