

ANNUAL REPORT: June 1, 2015 – May 31, 2016
(i.e., Summer 2015, AY 2015-2016)
DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY
SUNY-ESF

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

NAME: Neil H. Ringler

I. INSTRUCTIONAL ACTIVITIES

1. Regular Course Offerings

	Course No.	Title	Credit Hrs.	No. Students	No. of Lab. Sections
SUMMER:					
FALL:	EFB 554	Aquatic Entomology	3	8	1
SPRING:	EFB 385	Comparative Vertebrate Anatomy	4	28	2

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.

Neither of these courses had a service learning component this year.

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

	Course No.	Title	Credit Hrs.	No. Students
<u>Fall</u>	498	Independent Research	2	1
	899	Master's Thesis	12	5
	999	Doctoral Dissertation	1	1
<u>Spring</u>	495	Teaching Experience	6	3
	499	Honors Thesis/Project	4	1
	899	Master's Thesis	3	3
	999	Doctoral Dissertation	1	1

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

4. Guest Lecture Activities

<u>Course No.</u>	<u>Title</u>	<u>No. of Lecture</u>
EFB 210	Diversity of Life Biology of Aquatic Insects	March 24, 2016 1

II. STUDENT ADVISING

- A. Number of undergraduates for whom you are the student's official advisor 0 and unofficial advisor 4
- 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

Ann Burnham, M.S. Completed November 2015. The Development and Application of a Fish-Based Index of Biotic Integrity for New York State. Master's Thesis. State University of New York College of Environmental Science and Forestry. 74 pp.

Zachary Smith, M.S. Completed August 2015. A temporal and comparative analysis of the benthic macroinvertebrate fauna in a recovering perturbed ecosystem (Onondaga Lake, NY). Master's Thesis. State University of New York College of Environmental Science and Forestry. 70 pp.

Justin DiRado, M.S. Completed March 2016. An Ecological Approach to Atlantic Salmon Restoration in Central New York. Master's Thesis. State University of New York College of Environmental Science and Forestry. 138 pp

Christopher Powers, M.S. Completed April 2016. Atlantic Salmon Restoration in Central New York: A Bioenergetics Analysis of Climate Change Implications and Investigation of Juvenile Foraging Patterns. Master's Thesis. State University of New York College of Environmental Science and Forestry. 80 pp

Ryan Smith, M.S. May 2014; left program February 2016

Harold Nugent, M. S. May 2014 (Target completion August 2016)

Carrienne Pershyn, M.S May 2015

Elizabeth Stieber, M.S. May 2015

Erik Hazelton, M.S. August 2015

Deborah Hummel M.S. May 2016

Michael Connerton, Ph.D. December 1996 (NYDEC Biologist)

CO-MAJOR PROFESSOR

MEMBER, STEERING COMMITTEE (other than those listed above)

Caitlin Slife
Tom Evans

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Zheng Liu

III. RESEARCH COMPLETED OR UNDERWAY

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

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)*

Current Awards

USDA Forest Service

Enhanced Effectiveness of Planning and Managing Urban Forest Ecosystems

8.50 CY; PI

\$67,500

09/22/2011 - 09/21/2016

National Science Foundation

Technology Enhancement of Hot Water Extraction

5.0% CY; Co-PI

\$599,822

09/01/2012 – 08/31/2016

Honeywell International Incorporated

Onondaga Lake Biological Assessment and Monitoring

4.0% CY; PI

\$423,944

07/01/2013 – 12/31/2016

US Geological Survey

Restoration of Lake Ontario Native Fish Species

2.0% CY; PI

\$245,839

07/30/2014 – 08/31/2016

NYS Department of Environmental Conservation

Determining the Provenance and Life Histories of Blueback Herring in the Mohawk River

10.0% CY; PI

\$261,072

04/01/2014 – 03/31/2017

NYS Department of Environmental Conservation

Low Gradient Stream IBI

5.0% CY; PI

\$80,000

05/16/2015 – 01/01/2017

NYS Department of Environmental Conservation

Biological Condition Estimation for New York State Lakes: Application and Evaluation of Lake Assessment Biological

Metrics

2.0% CY; PI

\$86,000

08/24/2015 – 08/23/2017

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

Pending

NYS Department of Environmental Conservation

Development of Macroinvertebrate Index of Biotic Integrity for Water Quality Assessment of Slow Gradient Alluvial Streams in NYS

5.0% CY; PI

\$125,000

09/01/2014 – 08/31/2016

Honeywell International Incorporated

Onondaga Lake Biological Assessment and Monitoring

10.0% CY; PI

\$166,272

07/01/2016 – 06/30/2017

University of Puerto Rico

Long-Term Ecological Research (LTER) Program at the Luquillo Experimental Forest and El Yunque National Forest

1.0% CY; Co-PI

\$24,000

09/01/2014 – 08/31/2017

NYS Economic Development

High Tech Match Grant -Acquisition: Cryo Filed Emission Transmission Electron Microscope
1.0% CY; PI
\$215,000
09/01/2015 – 08/31/2017

US Geological Survey

Restoration of Lake Ontario Native Fish Species
2.0% CY; PI
\$132,623
09/01/2016 – 08/31/2017

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

Kirby, L. J. and N. H. Ringler 2015. Associations of epiphytic macroinvertebrates within four assemblages of submerged aquatic vegetation in a recovering urban lake. *Northeastern Naturalist* 22 (672-689.)

Murphy, M. H., C. J. Gandino, N. H. Ringler, L. Kirby, S. Johnson, M. Smith and S. Schroeder. 2015. Assessment of the Onondaga Lake, New York, fish community following reductions of nutrient inputs from a wastewater treatment plant. *Lake and Reservoir Management* 31: 347-358.

Johnson, J. H. and N. H. Ringler 2016. Comparative diets of sub-yearling Atlantic salmon and sub-yearling coho salmon in Lake Ontario tributaries. *J. Great Lakes Research JGLR* 42: 1- xxx.

B. Non-refereed Publications

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

Johnson, S. L., N.H. Ringler and E.M. Michalenko. Management and Restoration Lessons from a Habitat Manipulation Study in a Recovering Urban Lake. American Fisheries Society Annual Meeting. Portland, Oregon. August 17, 2015.

Ringler, N. H., M. Murphy, C. Gandino, M. Arrigo and S. Effler.
Biotic Responses to Restoration Efforts in a Highly Perturbed Lake: *A Collaborative Success Story*. American Fisheries Society Annual Meeting. Portland, Oregon. August 18, 2015.

Di Rado, J. A., C. D Powers, N. H Ringler and M. H. Murphy. An Ecological Approach to Atlantic Salmon Restoration in Central New York. NYS American Fisheries Society 2016 Annual Meeting. Cooperstown, NY. February 10, 2016.

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

Ringler, N. H. Onondaga Lake: Renewal of a Jewel: Effective Collaboration Among Students, Scientists, Agencies and Private Enterprise. Dale Travis Lecture Series, SUNY ESF, Syracuse, NY. March 29, 2016. ca 400 attending

Ringler, N. H. Update on the Biota and Research on Onondaga Lake, NY. Isaak Walton League of CNY. Syracuse NY. May 7, 2016. ca 12 attending

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

AAAS (Fellow)

Sigma Xi

American Fisheries Society

American Institute of Fishery Research Scientists

3. Other Professional Activities

a. Editorial activity

Journal (s)

Responsibility

Ecology of Freshwater Fish

Associate Editor

b. Reviewer

<u>Journal(s)</u>	<u>No. of manuscripts</u>
Estuaries and Coasts	1

<u>Agency</u>	<u>No. of proposals</u>
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Other

c. Participation (workshops, symposia, etc.)

<u>Name of workshop, etc.</u>	<u>Date</u>	<u>Place</u>
Biotechnology Symposium	May 19, 2016	Syracuse NY

Presentation and Panel discussion: Hill Collaboration in Environmental Medicine and Institute for Environmental Health and Environmental Medicine

Bio-Refinery Symposium	May 23, 2016	Syracuse NY
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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

B. College-level

Ex Officio Committee on Research

C. University-wide, including Research Foundation

SUNY/RF Research Council

SUNY/RF Vice Presidents for Research/Officers

SUNY/RF Network of Excellence Co-leader with SUNY Stony Brook, Albany, Binghamton

SUNY Distinguished Academy; SUNY Senate Committee on Research and Graduate Education

Co-Director Hill Collaboration Environmental Medicine with UMU, SU, ESF, VA

Advisory Council, Biotechnology Accelerator

Planning Team, Center of Excellence Biofuels Laboratory

Planning Team, Institute for Environmental Health and Environmental Medicine (2020 Challenge Grant)

Planning Team Onondaga Water research and Education Center

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.

EFB

The EFB curriculum provided the launch pad for four of our students in the Comparative Vertebrate Anatomy course to enter Veterinary programs in Massachusetts, Arizona, London, and Iowa in Fall 2016. The aquatic/fisheries graduate program is going well, with four M.S. students graduating this year, including solid employment with USGS, Vermont Fish and Wildlife, Parsons, Inc. and U.S. EPA. These students were supported on research assistantships funded by NY Sea Grant and Honeywell. The new CIRTAS lab proved essential in the success of Atlantic Salmon studies; continued work with Atlantic Salmon is anticipated with renewed connections with the Carpenter's Brook Fish Hatchery, where our young fish from Vermont are currently being held prior to stocking in Onondaga Lake tributaries. Our team published three papers and made five presentations this year. Two new graduate students have been recruited for the upcoming field season for a graduate team of seven.

ESF

In addition to activities in the Office of Research Programs, work on behalf of ESF has included development of the Hill Collaboration in Environmental Medicine, which now has provided \$240,000 in seed grant opportunity since 2012. We elected Dr. Don Simpson, Dean of College of Health Science Professions at UMU, as Director of the Institute for Environmental Health and Environmental Medicine (IEHEM). A session at the Biotechnology Symposium May 19th provided a forum to present results from the Hill Collaboration and seek (via panel discussion) new collaborations from our Hill Partners (SU, UMU, VA, ESF) coupled with a stronger interface with IEHEM. The Bio-refinery in the Center of Excellence is now virtually completed, including a 1000 l fermenter and 40' high distillation column. This provides excellent prospects for faculty from Chemistry, PBE and other departments in research and instruction.

SUNY/RF

The SUNY/RF \$1.9 M Networks of Excellence Program is being reduced for the coming years, but several ESF faculty continue to complete projects initiated in the 4E component of that program. Service on the SUNY Senate Research and Graduation Committee was initiated this year, with some headway toward a graduate guide book and new graduate scholarships. Service on the RF Graduate Research Council continued as part of the Vice Presidents/Provosts meetings in NYC. A goal for the coming year is to restructure the Research Council to better serve the research enterprise. Our new RF President, Dr. Jeffrey Cheek (replacing Dr. Tim Killeen, now President of U. Illinois), will begin in early June 2016.

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)

In addition to the teaching and graduate research programs in EFB, a new assignment will begin this summer and fall in development of the SUNY 2020 Onondaga Lake Water Research Center. This Center will feature the "*Onondaga Lake Watershed as the research and educational nucleus for far-ranging contributions to aquatic science and restoration technologies.*" While the actual completion of the building is likely two years in the future, there is much to be accomplished with finalizing design of the building, working with our future partners, creating formal ESF policies for off-campus operations, and seeking of additional and long-term financial support for the programs.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2016

a. Course(s) to be offered

b. Proposed research activity

Onondaga Lake and Atlantic Salmon studies with graduate and undergraduate teams, emphasizing long term monitoring, assessment of new structure being added to the littoral zone, and reintroduction of Atlantic salmon to the watershed.

Development of the new SUNY 2020 Onondaga Lake Water Research Center

c. University, professional society, and public service

2. Fall Semester 2016

a. Course(s) to be offered

b. Aquatic Entomology EFB 554

b. Proposed research activity

Onondaga Lake and Atlantic Salmon studies with graduate and undergraduate teams, emphasizing long term monitoring, assessment of new structure being added to the littoral zone, and reintroduction of Atlantic salmon to the watershed.

Development of the new SUNY 2020 Onondaga Lake Water Research Center

c. University, Professional society, and public service

3. Spring Semester 2017

a. Course(s) to be offered

Comparative Vertebrate Anatomy EFB 385

b. Proposed research activity

Onondaga Lake and Atlantic Salmon studies with graduate and undergraduate teams, emphasizing long term monitoring, assessment of new structure being added to the littoral zone, and reintroduction of Atlantic salmon to the watershed.

Development of the new SUNY 2020 Onondaga Lake Water Research Center

c. University, professional society, and public service