

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: Neil H. Ringler

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>
SUMMER:					
FALL:	EFB 554	Aquatic Entomology	3	14	1
SPRING:	EFB 385	Comparative Vertebrate Anatomy	4	39	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)

	<u>Course No.</u>	<u>Title</u>	<u>Credit Hrs.</u>	<u>No. Students</u>
<u>Fall</u>	495	Exp/College Teaching	1	1
	498	Independent Research	6	3
	899	Master's Thesis	25	7
	999	Doctoral Dissertation	1	1
<u>Spring</u>	298	Research/Internship	3	1
	420	Prof/Internship	4	1
	498	Independent Research	3	1
	499	Honors Thesis/Project	1	1
	899	Master's Thesis	17	7
	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 Lectures</u>
EFB 210	Diversity of Life Biology of Aquatic Insects	March 18, 2015 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

Danielle Hurley, M. S. Completed May 2015. Differences in population characteristics of Largemouth Bass, *Micropterus salmoides*, due to varying habitat quality and degradation in Onondaga Lake, NY.

Zachary Smith, M.S. January 2013 (*target completion* August 2015)

Ann Burnham, M.S. August 2013 (*target completion* July 2015)

Justin DiRado, M.S. January 2014

Christopher Powers, M.S. January 2014

Ryan Smith, M.S. May 2014

Harold Nugent, M. S. May 2014

Carrienne Pershyn, M.S May 2015

Elizabeth Stieber, M.S. May 2015

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

CO-MAJOR PROFESSOR

MEMBER, STEERING COMMITTEE (other than those listed above)

Mirian Cauldron, M.S.

Tom Evans, Ph.D.

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Smriti Sharma

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

National Science Foundation

Collaborative Research: Impacts of In-Stream Restoration on Hydrological, Chemical and Biological heterogeneity in the Hyporheic Zone

1% CY; Co-Pi

\$275,335

01/01/2010 – 12/31/2015

USDA Forest Service

Enhanced Effectiveness of Planning and Managing Urban Forest Ecosystems

8.5% CY; PI

\$54,000

09/22/2011 – 09/21/2016

National Science Foundation

Technology Enhancement of Hot Water Extraction

5% CY; PI

\$599,822

09/01/2012 – 08/31/2015

Honeywell, Inc.

Onondaga Lake Biological Assessment and Monitoring

4% CY; PI

\$439,085

07/01/2013 – 06/30/2015

NYS Department of Environmental Conservation

Fish and Macroinvertebrate Concordance: Validation of a NYS Fish Index of Biotic Integrity and its Relationship to Macroinvertebrate Metrics

5% CY; PI

\$75,000
09/01/2013 – 10/31/2015

NYS Sea Grant

Atlantic Salmon Restoration in Great Lakes Tributaries: An Ecological and Bioenergetics Approach
22% CY; PI
\$250,000
02/01/2014 – 01/31/2016

US Geological Survey

Restoration of Lake Ontario Native Fish Species
2% CY; PI
\$117,409
07/30/2014 – 08/31/2015

NYS Department of Environmental Conservation

Determining the Provenance and Life Histories of Blueback Herring in the Mohawk River
10% CY
\$261,072
04/01/2014 – 03/31/2017

NYS Department of Environmental Conservation

Low Gradient Stream IBI
5% CY; PI
\$80,000
05/16/2015 – 03/31/2016

NYS Department of Environmental Conservation

Internship in Water and Stream Biomonitoring
1% CY; PI
\$7,000
04/01/2015 – 12/31/2015

Pending

08/16/2013 – 08/15/2018

Honeywell, Inc.

Onondaga Lake Biological Assessment and Monitoring
4% CY; PI
\$160,000
07/01/2015– 06/30/2016

NYS Department of Environmental Conservation

Development of Macroinvertebrate Index of Biotic Integrity for Water Quality Assessment of slow Gradient Alluvial Streams in NYS
5% CY; PI
\$125,000
09/01/2014 – 08/31/2016

Center State Corporation of Economic Opportunity

2014 #2015 Speaker at the SUNY Biotechnology Accelerator: Scientists-Engineers-Entrepreneurs
1% CY; PI
\$8,000
05/14/2014 – 05/31/2015

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

Brown, B. L., N. H. Ringler and K.L. Schulz. 2015. Sediment and water quality limit survivorship in an urban lake undergoing remediation. *Lake and Reservoir Management* 31(2): 145-156.

B. Non-refereed Publications

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

Burnham, Anne, Zachary Smith, A.J. Alexander Brian Duffy and Neil H Ringler. The development and application of a New York State fish-based index of biotic integrity (IBI). Northeast Association of Environmental Biologists (NEAEB), Bartlett, NH. March 19-20, 2015.

Smith, Zachary, Neil H. Ringler and A. J. Smith. A comparative study of benthic macro-invertebrates in three Central New York Lakes: Analysis of a recovering perturbed lake. Northeast Association of Environmental Biologists (NEAEB), Bartlett, NH. March 19-20, 2015.

Christopher Powers, Justin A. DiRado, Neil H. Ringler and Margaret Murphy. Atlantic Salmon restoration: A bioenergetics modeling approach to assess spatial and temporal variability in juvenile rearing-habitat quality. NY Chapter, American Fisheries Society Annual Meeting, Lake Placid, NY February 4-6, 2015.

Ryan Smith, Neil H. Ringler and A.J. Alexander. The Development of a benthic macro-invertebrate index of biotic integrity (IBI) for low gradient streams in New York State. (Poster) Northeast Association of Environmental Biologists (NEAEB), Bartlett, NH. March 19-20, 2015.

Nash, K.J., M.S. Chalupnicki, James H. Johnson and N.H. Ringler. Effectiveness of chemically marking Lake Herring with oxytetracycline for extended periods of time. (Poster) NY Chapter, American Fisheries Society Annual Meeting, Lake Placid, NY February 4-6, 2015.

Mackey, G.E., M.A. Chalupnicki, James .H. Johnson, T. Kehler and N. H. Ringler. Calcein as an alternative chemical marker for Lake Herring. (Poster) NY Chapter, American Fisheries Society Annual Meeting, Lake Placid, NY February 4-6, 2015.

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

WSYR "Insight" TV interview Onondaga Lake. Televised May 22, 2015

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

Other (books, symposia, etc.)

b. Reviewer

Journal(s)

No. of manuscripts

Ecology of Freshwater Fish

1

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

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

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)

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 aquatic program is supporting up to nine graduate students on grants and contracts with NOAA/Sea Grant, Honeywell, EPA; and NYDEC. One grad student completed her Master's degree this year, and two more will finish in the summer of 2015. The courses EFB 385 (Comparative Vertebrate Anatomy) and EFB 554 (Aquatic Entomology) continued, with several professional positions recently connected to aquatic invertebrate expertise. Students continue to successfully gain admission to medical and veterinary programs with support from the CVA course. This was the first year to contribute to the Diversity of Life Course (EFB 210) with regard to aquatic insects: a 4-month topic in 55 minutes! Collaborative work on Onondaga Lake is to be summarized in two papers presented at a symposium at the American Fisheries Society Annual Meeting in Portland, Oregon in August 2015. Our Atlantic salmon studies utilizing field and CIRTAS facilities have gone exceptionally well, with high rates of growth and survival in tributaries of Oneida Lake, Lake Ontario and Onondaga Lake. This species, traditionally difficult to restore, may ultimately succeed in our region as the result of this work.

ESF

A major success in licensing of patented technology (Hot water extraction process: Dr. Thomas Amidon and colleagues, inventors) occurred this year, with able assistance from intellectual property colleagues at Binghamton University. Modest grants were won by several faculty members via the Hill Collaboration in Environmental Medicine (ESF, SU, VA, UMU). Significant funding to ESF faculty members will be awarded this summer in the 4E Network of Excellence. Successful symposia sponsored by the Institute for Environmental Health and Environmental Medicine (IEHEM) were held at ESF and OCC; another is scheduled at SUNY Oswego in September 2015.

SUNY/RF

Work at the SUNY and SUNY/RF level has emphasized development of a \$1.9 M seed grant program in the 4E Network of Excellence (Energy, Environment, Economics, and Education). Research Vice Presidents/Vice Provosts from SUNY ESF, Stony Brook, Binghamton and Albany have created a strong working relationship in this 4E program that should be long-lasting and productive. This has become a true collaborative success, with faculty working together across at least 10 SUNY institutions throughout the State of New York; many of these faculty members had not previously met, even though they share research expertise and interests. Additional interactions at the SUNY level included participation in the proceedings of the Distinguished Academy, the Vice Presidents/Vice Provosts of Research planning meetings in Albany and NYC, and the SUNY/RF Research Council.

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 program in EFB, the coming year will see new interactions with the various Centers and Institutes, and working synergistically with our new Provost. Formalizing CIRTAS (already an active facility/center) via a proposal to the Academic Council should occur early in the new academic year. The ESF Biofuels facility in the Center of Excellence building will begin operations in the summer, and activities of our three EFB faculty members in the Biotechnology Accelerator will expand. We hope to contribute to the Water Resources and Education Center in the Inner Harbor of Onondaga Lake. We will work with EFB/ESF faculty and others in SUNY on the 4E Network of Excellence initiatives, beginning with the Charrette at Stony Brook University June 1-2, 2015. Contributions to the SUNY Research Council, Distinguished Academy and VPR's deliberations are envisioned to have at least indirect feedback and benefits to EFB and ESF. Work with the Hill Collaboration in Environmental Medicine will support mutual interests in this area. We will present two papers on the Onondaga Lake system at a symposium at the American Fisheries Society Annual Meeting in Portland, Oregon on August 20th. This event is targeted at stimulating collaborations among university, private and governmental agencies to enhance restoration efforts nationally.

B. PROJECTED ACTIVITIES FOR NEXT YEAR

1. Summer 2015

a. Course(s) to be offered

b. Proposed research activity

Onondaga Lake and Atlantic Salmon studies ongoing with graduate and undergraduate teams

c. University, professional society, and public service

2. Fall Semester 2015

a. Course(s) to be offered

b.

EFB 554 Aquatic Entomology

b. Proposed research activity

Onondaga Lake and Atlantic Salmon studies ongoing with graduate and undergraduate teams

c. University, Professional society, and public service

3. Spring Semester 2016

a. Course(s) to be offered

EFB 385 Comparative Vertebrate Anatomy

b. Proposed research activity

Onondaga Lake and Atlantic Salmon studies ongoing with graduate and undergraduate teams

c. University, professional society, and public service