

Amanda E. Keiter Rosenberger

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RESEARCH INTERESTS

My research interests are in the ecology and conservation of freshwater fishes with an emphasis on the role of ecological processes in shaping fish distributions, population characteristics, and community structure. Conservation problems are best addressed at multiple scales; therefore, I am interested in the spatial and temporal dynamics of these patterns at both local and landscape scales. I am particularly interested in investigating mechanistic relationships between fish and physical and biotic features of the environment and how nonnative species can alter those relationships. I feel that learning is a continuous process, and participating in education is the best way to challenge myself as a lifelong learner.

PRESENT EMPLOYMENT

ASSISTANT PROFESSOR OF FISHERIES 11/2006 to present. School of Fisheries and Ocean Sciences, Fisheries Division, University of Alaska, Fairbanks, P.O. Box 757220, Fairbanks, Alaska 99775-7220.

Supervisors: Dr. Denis Wiesenburg, Dean. Phone: (907) 474-7210 Email: wiesenburg@sfos.uaf.edu

Dr. Bill Smoker, Division Chair. Phone: (907) 796-6444 Email: bill.smoker@uaf.edu

- Under a new faculty position created to enrich the undergraduate program in fisheries under the Rasmuson Foundation, I am presently faculty with a workload combination of research, teaching, and service.

EDUCATION

VIRGINIA POLYTECHNIC INSTITUTE (VIRGINIA TECH), Blacksburg, Virginia
Ph.D. Fisheries and Wildlife Sciences 108 Semester credits (Cum G.P.A. 3.78) 1998-2003

UNIVERSITY OF FLORIDA, Gainesville, Florida
M.S. Zoology 58 Semester credits (Cum G.P.A. 3.90) 1994-1997

SIMON'S ROCK COLLEGE OF BARD, Great Barrington, Massachusetts
B.A. (Cum Laude) : Environmental Studies, Natural Sciences Concentration 1990-1994
A.A. Liberal Arts and Sciences 123 Semester credits (Cum G.P.A. 3.45)

PROFESSIONAL SOCIETIES

- American Fisheries Society (AFS), 1998-present:
 - Chapters: Virginia Tech, 1998-present; Oregon, 2003-present; Idaho, 2003-present

PROFESSIONAL SERVICE

- Western Division of the American Fisheries Society (WDAFS) Graduate Scholarship Committee, 2004
- The Virginia Tech Chapter of the American Fisheries Society (VTAFS):
 - President, 2000-1
 - Outreach Comm. Co-chair, 1999-2000
 - Nomination Comm. Chair, 2002
 - Education, Fishing Tournament, and
 - Environmental Concerns Comm. Chair, 2001-2 Environmental Concerns Comm., 1999-2001
- American Fisheries Society (AFS):
 - Southern Division Executive Comm., 2000-1
 - Introduced Species Section, 1999-2003
 - Nongame Species Comm., 1999-2004
- Fisheries and Wildlife Graduate Student Association (FIWGSA), Virginia Tech:
 - President, 1999-2000
 - Graduate Student mentor, 1998-2002
 - Seminar and Orientation Comm., 1999-2002
- University of Florida Graduate Student Association, Graduate Student mentor, 1997

- Simon's Rock College of Bard Student Government:
 - Community Council Chairperson, 1993-4
 - Community Council Treasurer, 1993
 - Community Council Class Rep., 1992-4
 - Judicial Committee Student Rep., 1992-4
 - Academic Senate, Student Rep., 1992-3

PUBLICATIONS

PEER-REVIEWED, FULL-LENGTH JOURNAL ARTICLES

- In prep. Roberts J.H., **Rosenberger, A.E.** Albanese, B., and Angermeier, P.L. Movement patterns of Roanoke logperch, an endangered darter (Pisces: Percidae). To be submitted to *Environmental Biology of Fishes*.
- In prep. **Rosenberger, A.E.**, J.B. Dunham, T. Copeland, and B.E. Rieman. Population and life history response of rainbow trout *Onchorynchus mykiss* to severe wildfire and channel reorganization in Central Idaho headwater streams. To be submitted to *Ecological Applications*.
- In prep. Neville, H., A.E. Rosenberger, and J.B. Dunham. Landscape genetic responses of rainbow trout (*Oncorhynchus mykiss*) to channel disturbance and wildfire in Idaho river basins. To be submitted to *Ecological Applications*.
- In prep. Rosenberger, A.E., P.L. Angermeier, and J. Roberts. The endangered Roanoke logperch (*Percina rex*): updates on conservation and ecology. To be submitted to *Proceedings of the Southeastern Fisheries Council*.
- In prep. Dunham, J.B., A. E. **Rosenberger**, R.F. Thurow, A. Dolloff, and P.J. Howell. Coldwater fishes in wadeable streams. In: S. Bonar, W. Hubert, and D. Willis, editors. Standard Sampling Methods for North American Freshwater Fishes. To be published by the American Fisheries Society, Fisheries Management Section.
- In prep. **Rosenberger, A.E.**, J.B. Dunham, M.S. Wipfli, and J.M. Buffington. Effects of wildfire and channel reorganization on drifting macroinvertebrates and predation by trout in central Idaho streams a decade after disturbance. To be submitted to *Transactions of the American Fisheries Society*.
- In press. Dunham, J.B., A.E. **Rosenberger**, C.H. Luce, and B.E. Rieman. Influences of wildfire and channel reorganization on spatial and temporal variation in stream temperature and the distribution of fish and amphibians. *Ecosystems*.
2005. **Rosenberger, A.E.** and J.B. Dunham. Validation of abundance estimates from mark–recapture and removal techniques for rainbow trout captured by electrofishing in small streams. *North American Journal of Fisheries Management* 25:1395–1410.
2005. Wheeler, A.P., P.L. Angermeier, and A.E. **Rosenberger**. Impacts of new highways and subsequent landscape urbanization on stream habitat and biota. *Reviews in Fisheries Science* 13: 141-164.
2004. Angermeier, P.L., A.P. Wheeler, and A.E. **Rosenberger**. A conceptual framework for assessing impacts of roads on aquatic biota. *Fisheries* 29:19-29.
2003. **Rosenberger, A.E.** and P.L. Angermeier. Ontogenetic shifts in habitat use by the endangered Roanoke logperch (*Percina rex*). *Freshwater Biology* 48:1563-1577.
2002. Chapman, L.J., C.A. Chapman, F.G. Nordlie, and A.E. **Rosenberger**. Physiological refugia: Swamps, hypoxia tolerance, and maintenance of fish biodiversity in the Lake Victoria Region. *Comparative Biochemistry and Physiology* 133:421-437.
2000. Whittaker, D. and A.E. **Rosenberger**. On creating a fertile academic atmosphere in fisheries and wildlife schools. *Wildlife Society Bulletin* 28:1176-1180.
2000. **Rosenberger, A.E.** and L.J. Chapman. Respiratory characters of three haplochromine cichlid species: implications for persistence in wetland refugia. *Journal of Fish Biology* 57:483-501.
2000. Walsh, S.J., L.J. Chapman, A.E. **Rosenberger**, and C.A. Chapman. Redescription and ecology of *Amphilius jacksonii* (Siluriformes: Amphiliidae), a hillstream catfish of western Uganda. *Ichthyological Explorations of Freshwaters* 11:163-174.
1999. **Rosenberger, A.E.** and L.J. Chapman. Hypoxic wetland tributaries as faunal refugia from an introduced predator. *Ecology of Freshwater Fishes* 8:22-34.
1996. Chapman, L.J., C.A. Chapman, R. Ogutu-Ohwayo, M. Chandler, L. Kaufman, and A.E. **Keiter**. Refugia for endangered fishes from an introduced predator in Lake Nabugabo, Uganda. *Conservation Biology* 10:554-561.

NOTES

In press. Swenson, E.A., A.E. **Rosenberger**, and P.J. Howell. Validation of endoscopy for non-lethal determination of maturity of small brook trout. *Transactions of the American Fisheries Society*.

2004. Habit, E. and A. **Rosenberger**. Introduced species in Chile's freshwaters: the need for research. *Introduced Fish Section Newsletter*. 21:1.

2000. **Rosenberger**, A.E. A perspective on the future of introduced species management. *Introduced Fish Section Newsletter* 18:2.

THESES AND DISSERTATIONS

2002. **Rosenberger**, A.E. Multi-scale habitat use patterns of Roanoke logperch (*Percina rex*) in Virginia rivers: a comparison among populations and over ontogeny. Dissertation submitted to the Department of Fisheries and Wildlife Sciences, Virginia Polytechnic Institute and State University, Blacksburg, VA.

1997. **Rosenberger**, A.E. Potential of wetland tributaries as refugia for endangered fishes from nonnative predation: a case study of Lake Nabugabo, Uganda. Master's thesis submitted to the Department of Zoology, University of Florida, Gainesville, FL.

1994. **Keiter**, A.E. A cladistic analysis of the subfamily Bryconinae. Undergraduate senior thesis submitted to the Department of Environmental Studies, Simon's Rock College of Bard, Great Barrington, MA.

REPORTS

2007. **Rosenberger**, A.E. An update to the Roanoke logperch (*Percina rex*) recovery plan. Report to the U.S. Fish & Wildlife Service, Virginia Field Office, Gloucester, VA .

2002. Wheeler, A.P., A.E. **Rosenberger**, and P.L. Angermeier. Potential impacts of I-73 on stream habitat and biota, with emphasis on the endangered Roanoke logperch. Report to Virginian's for Appropriate Roads.

2002. **Rosenberger**, A.E. and P.L. Angermeier. Roanoke logperch (*Percina rex*) population structure and habitat use. Final Report to the Virginia Department of Game and Inland Fisheries, Blacksburg, VA.

REVIEWS

2002. **Rosenberger**, A.E. Great Waters: an Atlantic Passage. *Fisheries* 27:3:40, 42.

Manuscript reviews completed for *Conservation Biology*, *Transactions of the American Fisheries Society*, *North American Journal of Fisheries Management*, *American Midland Naturalist*, *Environmental Biology of Fishes*, *Copeia*, and *Banisteria*. Chapter review for *Influences of Landscape on Stream Habitat and Biological Communities*. White paper and grant proposal reviews: 4 grant proposals, 2 white papers submitted to CALFED Bay-Delta Program based in Sacramento, California. Outside thesis review: Dissertation review, La Trobe University, Victoria, Australia.

FELLOWSHIPS AND AWARDS

- Faculty Travel Award, University of Alaska, Fairbanks 2007
- College of Natural Resources A.B. Massey Award, Virginia Tech, 2002
- Best student paper, Southern Division of the American Fisheries Society Midyear Meeting, 2001
- American Fisheries Society Skinner Memorial Award, 2001
- P.E.O. Sisterhood Graduate Scholar Award, 2001
- Virginia Chapter of the American Fisheries Society Graduate Student Award, 2001
- Burd Sheldon McGinnes Fellowship, Dept. Fisheries and Wildlife Sciences, Virginia Tech, 2000
- Member of the year, Virginia Tech Chapter of AFS, 2000
- Richard Hunter, Jr. Cross Fellowship, Dept. Fisheries and Wildlife Sciences, Virginia Tech, 2000
- Cunningham Fellowship, Virginia Tech, 1999-2001
- Recognition for excellence in student presentation, Introduced Species Section of AFS, 1999
- Best afternoon poster at the Graduate Student Council Graduate Student Symposium, 1997
- Most accomplished student in the Natural Sciences Department, Simon's Rock College, 1994
- Blodgett Scholarship, Simon's Rock College, 1993-4

GRANTS

2005. An update to the Roanoke Logperch Recovery Plan. US Fish and Wildlife Service contract, \$5500.00

2005. Travel grant to participate in International Workshop on Balancing Hydropower Development and Biodiversity held in southern Chile. The workshop was jointly funded by the National Science Foundation and the Department of Energy as part of the Pan-American Advanced Study Institute (PASI) initiative, emphasizing transfer of technical knowledge throughout the Americas, \$3000.00
1996. The role of hypoxia tolerance in the persistence of endangered fishes in wetland refugia. Sigma XI grant-in-aid of research, \$500.00
1995. Potential of wetland tributaries as refugia for endangered fishes from nonnative predation.
- Explorers Club Exploration Fund, \$1000.00
 - Sigma XI grant-in-aid of research, \$500.00
 - Tropical Conservation Field Research Grant, \$820.00

COURSE AND CURRICULUM DEVELOPMENT

FISHERIES TECHNIQUES (SPECIAL TOPICS, IN DEVELOPMENT). (Laboratory-based course) In collaboration with Trent Sutton, the Fisheries Division Undergraduate Coordinator with UAF SFOS, I am developing a course that will acquaint undergraduates with the theory and practice of laboratory methods used in fisheries science. These include sampling techniques for collecting fish, invertebrate, and aquatic habitat data; laboratory techniques for collecting data on fish age, growth, diet, and life history; and application of quantitative techniques for assessing fish populations and their habitats. Emphasis will also be placed on safety precautions in the field and the care and use of equipment.

FISH ECOLOGY. (Lecture and group-think course) This class will focus on the relationship of fishes to the physical, chemical, and biological features of their environment and the processes responsible for patterns of fish distribution and abundance. Emphasis will be placed on individual adaptation and its population- and community-level consequences. The class will follow a logical progression, moving from the study of individual fish to populations to metapopulations and landscape dynamics. Community ecology and ecosystem dynamics will be touched on throughout the course. The course involves quantitative approaches and simple modeling and statistical exercises.

CURRICULUM DEVELOPMENT. I am assisting Trent Sutton, the present undergraduate coordinator in the School of Fisheries and Ocean Sciences, Fisheries Division and participating members of the Fisheries faculty with the revision of the curriculum for undergraduates seeking a B.S. degree in Fisheries. We are also developing a curriculum for B.A. in Fisheries with a stronger base in the humanities and Fisheries minor.

PRESENTATIONS (first author only)

2007. Fisheries management history of Lake Victoria, East Africa and the role of wetlands in conservation of native fishes.
- Seminar for the University of Alaska Fairbanks student subunit of the AFS
- 2006-7. Resilience of rainbow trout in Idaho streams to wildfire-related disturbance.
Coauthors: J. Dunham, H. Neville, B. Rieman.
- Symposium Seminar, Annual meeting of AFS, Lake Placid, New York.
 - Freshwater Ecosystems Seminar Series, University of Alaska, Fairbanks School of Fisheries and Ocean Sciences.
 - Fisheries Seminar Series, University of Alaska Fairbanks, Juneau Center.
 - Seminar, Alaska Department of Fish and Game Operational Planning Meeting
2006. Wildfire and recovery of salmonid populations: a case study of the Boise River Basin.
Coauthors: J. Dunham, B. Rieman, M. Wipfli, and J. Buffington
- Workshop, Annual Region 4, US Forest Service training workshop, Ogden, Utah
 - Seminar, Department of Forest, Range, and Wildlife Resources, Utah State University, Logan
2006. Utility of electrofishing and snorkeling for censusing salmonids: why validation is essential.
Coauthors: R. Thurow, J. Dunham, and J. Peterson
- Seminar, Joint Bonneville and Colorado River Cutthroat Trout Meeting, Salt Lake City, Utah
 - Workshop presentation, Annual Region 4, US Forest Service training workshop, Ogden, Utah
2005. Validation of abundance estimates from mark-recapture and removal techniques for rainbow trout captured by electrofishing in small streams. Coauthor: J. Dunham

- Poster, Annual meeting of the American Fisheries Society (AFS), Anchorage, Alaska
2005. Effects of wildfire and channel disturbance on individual and life-history traits of rainbow trout in Idaho streams. Coauthors: J. Dunham and B. Rieman
- Seminar, Annual meeting of AFS, Anchorage, Alaska
2005. Effects of fire and subsequent channel disturbance on invertebrate drift and trout diet 10 years post-disturbance. Coauthors: J. Dunham, M. Wipfli, and J. Buffington
- Seminar, joint annual meeting of the North American Benthological Society and the American Geophysical Union, New Orleans, Louisiana in a symposium titled, "Interactions Between Physical and Biological Processes in Riverine Landscapes: Ecosystem Response to Physical Processes and Disturbance," organized by J. Buffington, A. Rosenberger, and C. Baxter
 - Seminar, Department of Geosciences colloquium, Idaho State University
2005. Introduced species in Chilean Patagonia: potential problems and research opportunities. Coauthor: J. Dunham
- Seminar, International Workshop on Balancing Hydropower Development and Biodiversity held in Coyhaique, Chile and EULA, University of Concepción, Concepción, Chile
2004. Conservation Assessments: Analysis of conservation units, threats, and extinction risk. Coauthor: J. Dunham
- Seminar, scientific forum to coordinate research in the Biobio watershed held at EULA, University of Concepción, Concepción, Chile
2003. Evaluating watershed vulnerability : a fish perspective on Fire. Coauthors: J. Dunham and B. Rieman
- Seminar, Geological Society of America conference on Wildland Fire Impacts on Watersheds: Understanding, Planning and Response, Denver, Colorado
2003. Fish presence and abundance: efficiency of electrofishing in tributaries of the Middle Fork Boise River and Panther Creek, Idaho. Coauthors: J. Dunham and B. Rieman
- Poster, *Salvelinus* Appreciation Society meeting, Atlanta, Idaho
2003. A comparison of habitat use patterns of Roanoke logperch among populations. Coauthor: P. Angermeier
- Seminar, Fish and Wildlife Service, Richmond, Virginia field office
- 2002-5. Conservation research on African and southeastern fishes: two diversity hotspots.
- Seminar, Religious Society of Friends Boise Valley Meeting, Idaho
 - Seminar, Boise Senior Center, Idaho
 - Seminar, Blacksburg AU chapter of the P.E.O. sisterhood, Virginia
- 2002-3. Multi-scale habitat use patterns by Roanoke logperch (*Percina rex*) in Virginia rivers.
- Seminar, Rocky Mountain Research Station, Boise, Idaho
 - Defense seminar, Department of Fisheries and Wildlife Sciences, Virginia Tech
2002. Habitat associations of the endangered Roanoke logperch in three Virginia rivers: Implications for conservation. Coauthor: P. Angermeier
- Seminar, Southern Division of AFS, Little Rock, Arkansas
 - Seminar, American Society of Ichthyologists and Herpetologists, Kansas City, Missouri
2001. Ethics and the modern student. Coauthor: T. Copeland
- Seminar, joint meeting of the Virginia Tech Chapter and the Tennessee Student Subunit of AFS
- 2000-1. Size-related shifts in habitat use by the endangered Roanoke logperch. Coauthor: P. Angermeier
- Seminar, Southern Division of AFS, Jacksonville, Florida (award received)
 - Seminar, joint meeting of the Virginia Tech Chapter and the Tennessee Student Subunit of AFS
1999. Wetlands in East Africa as refugia for fishes endangered by non-native predation. Coauthor: L.J. Chapman
- Symposium seminar, AFS National Meeting, Charlotte, North Carolina (award received)
1999. Estimates of Nile perch (*Lates niloticus* L.) consumption of haplochromine cichlids in Lake Victoria from '79-'90: How responsible is Nile perch predation for endemic fish declines?

- Seminar, Department of Fisheries and Wildlife Sciences, Virginia Tech
1999. Habitat models of selected fishes in three Virginia rivers: transferability across spatial and temporal scales.
- Proposal seminar, Department of Fisheries and Wildlife Sciences, Virginia Tech
- 1995-2003. Potential of wetland tributaries as refugia for endangered fishes from nonnative predation: a case study of Lake Nabugabo, Uganda. Coauthor: L.J. Chapman
- Seminar, Fisheries Institute of Uganda in Jinja, Uganda
 - Two seminars, Center for Wetlands, University of Florida, Gainesville, Florida
 - Poster, Graduate Student Council graduate student symposium, University of Florida
 - Seminar, Makerere University Biological Field Station, Kibale National Forest, Uganda
 - Poster, Ecological Society of America in Providence, Rhode Island
 - Seminar, Department of Fisheries and Wildlife Sciences, Blacksburg, Virginia
 - Poster, Graduate Student Association, Virginia Tech, Blacksburg, Virginia
 - Seminar, Department of Biology, Boise State University, Boise, Idaho
 - Seminar, Rocky Mountain Research Station, Boise, Idaho

PAST RELEVANT EMPLOYMENT HISTORY

RESEARCH

POSTDOCTORAL RESEARCHER, 02/2003 to 11/2006. University of Idaho, Center for Ecohydraulics Research, 322 East Front Street, Suite 340; Boise, Idaho 83702. 40 hours/week . Salary: \$42,500.00/year

Supervisors: Dr. Jason Dunham Phone: (541) 750-7397 Email: jdunham@usgs.gov
 Dr. Bruce Rieman Phone: (208) 373-4386 Email: brieman@fs.fed.us

- Under a joint appointment with the University of Idaho and the USDA Forest Service Rocky Mountain Research Station Boise Aquatic Sciences Laboratory, I provided assistance with several research projects designed to better understand the effects of wildfire and ecological context on aquatic ecosystems in the Boise National Forest.
- I led research on the following topics: 1) Validation of sampling methods for rainbow trout, 2) The effects of wildfire and channel reorganization on macroinvertebrate drift and rainbow trout diet, 3) The effects of wildfire and channel reorganization on rainbow trout distribution, abundance, and life-history, and 4) The use of individual-based models to examine the effects of habitat changes associated with wildfire and channel reorganization on rainbow trout.
- I collaborated on research on the following topics: 1) The effects of wildfire and channel reorganization on stream temperatures, 2) The effects of wildfire, channel reorganization, and isolation due to man-made barriers on genetic characteristics of rainbow trout populations, and 3) The effects of wildfire and channel reorganization on geomorphic characteristics of headwater streams.
- Accomplishments include dissemination of important information regarding the effects of wildfire on aquatic ecosystems relevant to management, including several peer-reviewed manuscripts, presentations, and workshops.

RESEARCH ASSISTANT, 1998-2002. Department of Fisheries and Wildlife Sciences, 100 Cheatham Hall, Blacksburg, VA, 24061. Supervisor: Dr. Paul Angermeier. Phone: (540) 231-4501. Email: biota@vt.edu. Supervisor may be contacted.

- Funded by the Virginia Department of Game and Inland Fisheries, I worked on a project titled, "Roanoke logperch population structure and habitat use," whose purpose was to supplement and collect information on the ecology of the endangered Roanoke logperch including differences in habitat use among populations.
- Accomplishments include a dissertation from related research, a final report submitted to the Virginia Department of Game and Inland Fisheries, peer-reviewed manuscripts, and presentations to professional audiences.

RESEARCH ASSISTANT, 1995-7. University of Florida, Department of Zoology. Supervisor: Dr. Lauren J. Chapman.

Worked on aspects of the ecology, respiratory behavior, and physiology of fishes from Uganda wetlands, including: identification, cataloguing, and measuring fishes collected from wetlands and preparing them

for museum collections; conducting studies on the respiratory behavior and physiological ecology of *Pseudocrenilabrus multicolor*; and examining gill morphology and gill parasites of fishes from habitats varying in oxygen content.

FIELD TECHNICIAN, 1991-4. Hudsonia, Ltd., Bard College, New York. Supervisors: Dr. Robert Schmidt, Dr. Donald Roeder, and Alison Hamilton.

Participated in multiple projects, including a fish community study of Manatou Marsh on the Hudson River, a study of larval fish populations of New York stream and river systems, and a study of threatened blanding's turtles. Also participated in the delineation of a large wetland in Berkshire County via identification of wetland plants.

TEACHING

ADJUNCT FACULTY, 2005, 2006. Course Title: The Natural World.

Department of Earth Systems Science, Westminster College, 1840 South 1300 East, Salt Lake City, UT 84105. Supervisor: Dr. David Goldsmith. Phone: (801) 832-2356 Email:

dgoldsmith@westminstercollege.edu. Supervisor may be contacted. Co-instructor: Dr. Robert Bossard.

Co-taught an introductory science course for non-majors. Gave lectures, designed and administered examinations, graded assignments, and led field trips. Themes included observation and classification, the interplay of fact and theory, ecosystems, interactions between the natural world and the physical environment, evolution and adaptation, and the importance of scientific awareness. Teaching techniques include group discussion, critical thinking, "hands-on" exploration, data collection and analysis, presentations, and field experience.

UNDERGRADUATE RESEARCH SUPERVISOR, 2005.

Albertson College, Caldwell, Idaho. Co-advisor: Dr. Chris Walser.

Supervised senior undergraduate thesis. The student participated in a study on wildfire and life history of fishes and validated a technique for non-lethal determination of fish maturity using an endoscope.

Results from this thesis are in preparation to be published as a Note in *Transactions of the American Fisheries Society*.

CO-INSTRUCTOR, 2005, 2006. Course Title: Aquatic Habitat Modeling.

Center for Ecohydraulics Research, University of Idaho Boise Campus. Co-instructor: Dr. Klaus Jorde.

For 2 semesters, co-taught a graduate course focusing on riverine ecosystems and habitat alterations caused by hydrodevelopment and flow alteration. My role was to teach basic principles of fish ecology that could be applied to habitat modeling, challenge model assumptions, clarify model limitations, and give prospective engineers a 'fish eye' perspective on habitat modeling. Designed lectures, field exercises, and exam and homework questions.

SHORT COURSE INSTRUCTOR, 2004.

EULA, University of Concepción, Chile. Lecture co-author: Jason Dunham.

Participated in a short course on aquatic habitat modeling. Lecture topics: 1) Conservation assessments: integrated analysis of conservation units, threats, and extinction risk; 2) Fish sampling methodology: validation of electrofishing techniques, 3) Fish ecology and habitat relationships: concepts, theory, and application to fishes in streams; 4) Nonnative trout invasions: impacts on species and ecosystems and management alternatives.

TEACHING ASSISTANT, 2000-1. Course Title: Ichthyology.

Department of Fisheries and Wildlife Sciences, Virginia Tech, 100 Cheatham Hall, Blacksburg, VA 24061.

Supervisor: Dr. Eric Hallerman. Phone: (540) 231-3257 Email: ehallerm@vt.edu. Supervisor may be contacted.

Assisted in teaching lecture and laboratory sections, coordinated laboratories, gave guest lectures, administered exams and led field trips. In spring of 2001, also lectured for the laboratory section and designed quizzes and examinations. This class covers the morphology, physiology, systematics, zoogeography, and identification of fishes.

TEACHING ASSISTANT, 1999. Course Title: Principles of Fisheries and Wildlife Sciences.

Department of Fisheries and Wildlife Sciences, Virginia Tech. Supervisor: Dr. Tammy Newcomb.

Assisted in lecture and grading and gave guest lectures. The course covers basic principles that natural resource professionals use as a guide for managing aquatic and terrestrial animals in wild habitats.

There is also examination of management approaches of organisms, habitats, and humans in terms of biological, ecological, chemical/physical, and sociological principles and practices.

RESEARCH ASSISTANT, 1998-2002.

Department of Fisheries and Wildlife Sciences, Virginia Tech. Professor: Dr. Paul Angermeier.

In addition to research duties, mentored and worked with undergraduate students. This includes taking on volunteers and paid field assistants and acquainting them with field and lab procedures. In 2001, I supervised an undergraduate conducting independent research on the age and growth characteristics of Roanoke logperch populations in three Virginia rivers. This student presented her findings at a professional society meeting.

TEACHING ASSISTANT AND ADJUNCT INSTRUCTOR, 1994-8. Course Titles: Introduction to Biology Laboratory I and II. Biological Sciences Core Laboratory, Department of Zoology, University of Florida, Box 118525, Gainesville, FL 32611. Supervisor: Dr. Kent Vliet. Phone: (352) 392-8130. Email: kent.vliet@zoo.ufl.edu. Supervisor may be contacted.

Taught four sections of an introductory biology laboratory focusing on plant and animal diversity, enzyme kinetics, photosynthesis, and respiration. Also taught six sections of an intermediate biology laboratory focusing on genetics, adaptation, ecology, and evolution. Each class had a lecture and laboratory component.

GUEST LECTURER, 1994-2006.

University of Florida, Virginia Tech, Boise State University, Idaho State University, Westminster College.

Have led lectures and presented seminars on a variety of topics in undergraduate and graduate courses for multiple institutions. Lecture topics include overviews of fish ecology: from individuals to landscapes, stream habitat management, managing effects of wildfire on native vertebrates, conservation genetics techniques and applications, wetland mitigation and restoration, the limnology of African crater lakes, debt for nature swaps in developing nations, potential of wetlands as refugia for endangered fishes, and editing for scientific journals.