

Jeremy M. Wojdak – *Curriculum Vitae*

Department of Biology
Radford University
P. O. BOX 6931
Radford, VA 24142
(540) 831 – 5395
jmwojdak@radford.edu

Education:

- Ph. D.** 1997-2004 **Michigan State University**
Dual degree in Zoology and Ecology, Evolutionary Biology & Behavior
- B. S.** 1993-1997 **Bowling Green State University**
Biology major Graduated *cum laude*

Employment:

- Assistant Professor** *Radford University, Department of Biology, 2004-present*
- Teaching ecology, pollution biology, tropical field biology, and introductory biology courses, conducting research with students, and serving the academic community.

Teaching Experience:

- Assistant Professor** *Radford University, Department of Biology, 2004-present*
- Pollution Biology
 - Taught an upper-level elective biology course covering fate and transport of pollutants in nature, physiological and ecological effects of pollutants on organisms, and environmental regulation.
 - Focusing the course around a semester-long class project developing a realistic Environmental Impact Assessment of a campus stormwater remediation wetland.
 - Tropical Field Biology
 - Organized a field-based course at the Virgin Islands Environmental Resource Station, St. John, U.S. Virgin Islands.
 - Presented lectures and moderated student-led discussions of primary literature.
 - Led field experiences and student-generated research projects presented at the Annual Undergraduate Research Forum at Radford University.
 - Environmental Biology
 - Taught an introductory biology course of 120 students covering evolution, ecology, and environmental science.

- Used hands-on games, simulations, “jig-saw” problem solving exercises, and small group discussions to increase student engagement and interest in the large lecture setting.
- General Ecology
 - Taught a course based on lectures, in-class problem sets, discussions of the primary literature and field/laboratory exercises.
- Principles of Biology
 - Taught an introductory biology course of 50 students covering genetics, evolution, cellular structure and function, and metabolism.

Visiting Assistant Professor *Kalamazoo College, Department of Biology, 2004*

- Population and Community Ecology
 - Taught a course based on lectures, in-class problem sets, discussions of the primary literature and field/laboratory exercises.

Instructor *Michigan State University, Department of Zoology, 2002*

- Graduate Population and Community Ecology
 - Co-taught a course that included both lectures and discussions of primary scientific literature to 25 masters and doctoral students from seven departments.
 - Prepared and presented lectures on competition theory, mechanisms of species coexistence, indirect effects, food webs and trophic interactions, stochastic environments, and mutualisms.

Coordinator *Kellogg Biological Station Research Experience for Undergraduates Program, 2000*

- Guided a group of eleven undergraduates through an intensive research experience.
- Led weekly discussions and delivered lectures on experimental design, presentation of research, statistics, scientific writing, scientific ethics, and career prospects.
- Organized an REU symposium where students presented their work to the scientific community at the Kellogg Biological Station.

Teaching Assistant *Michigan State University, Department of Zoology, 1997-2002*

- Environmental Physiology
 - Led discussions of primary literature in physiology and the philosophy of science.
 - Supervised term papers: helped students choose and clarify topics, edited rough drafts, demonstrated tactics for effective literature searches, and graded final papers.
- Marine Biology
 - Facilitated student-led discussions of primary literature in marine biology, ecology, and fisheries science.
 - Used small group meetings to introduce skills necessary for the effective leadership of academic discussions.

- Supervised term papers: helped students choose and clarify topics, demonstrated tactics for effective literature searches, graded final papers.
- Introductory Biology
 - Taught laboratory sections including lessons in genetics, cell biology, plant/animal form and function, taxonomy, predator-prey dynamics.
 - Prepared and presented mini-lectures to introduce the laboratory topics.
- Ecology
 - Taught field-based laboratory sections of an upper-level ecology course.
 - Advised more than forty students' independent research projects.
 - Led field trips during which students classified stream habitats, surveyed flora in several plant communities, and estimated the size of an insect population using mark-recapture methods.
 - Used computer models to explore population dynamics, competition, and predator-prey dynamics.
- Integrative Studies in Biology
 - Taught sections of a laboratory-based introductory course in environmental science covering the scientific method, basic quantitative skills, natural selection, biodiversity, biogeochemistry, climate change, environmental pollution, principles of geology, and genetics.
 - Prepared and presented 30-minute lectures to introduce each week's topic.

Advisor *Radford University Undergraduate Research, 2004-present*

- Served as research advisor to eight undergraduate students.
- Students have investigated indirect effects of predators in pond communities, aquatic invertebrate's responses to chemical stresses from pesticides and mine drainage, trematode parasite interactions with snail and amphibian hosts, and explanations for variation in community composition of aquatic invertebrates in local ponds.
- Students have presented their work at campus, state, and regional scientific conferences.

Kellogg Biological Station Research Experience for Undergraduates Program, 1999

- Acted as research advisor to Stephanie Miller (Univ. of Kansas) who subsequently attended graduate school in algal ecology.
- Provided guidance with all phases of her project on the algal community response to changes in snail identity and diversity, including experimental design, statistics, presentation at an REU symposium, and writing a final report.

Biology and Chemistry Tutor *Bowling Green State University, 1995-1996*

- Tutored minority and remedial students in science requirement classes.

Research Experience:**Co-Principal Investigator** *NSF Curriculum Adaptation and Implementation Grant, 2005-2008*

- Collaborating with faculty from Geography, Geology, Chemistry, and Biology departments to integrate the study of a stormwater remediation wetland into the science curriculum.
- Investigating the efficacy of “real-world” environmental problem based laboratory modules for teaching college science (in Ecology and Pollution Biology courses).
- Charged with data management and website design and maintenance.
<http://www.radford.edu/~biol-web/wetland%20website/index.htm>

Participant *National Center for Ecological Analysis and Synthesis Working Group, 2003*

- Collaborated in a working group focused on the factors controlling primary productivity and species richness in grasslands and savannahs.
- Worked with faculty and students from North America and South Africa to synthesize data from both continents.
- Used/troubleshoot Morpho, a data management system being developed at NCEAS to permanently archive both raw ecological data and the associated metadata.

National Center for Ecological Analysis and Synthesis Working Group, 2002

- Collaborated with students from several universities to study the relationship between primary productivity and species richness in plant communities.
- Developed and tested novel hypotheses using existing data from National Science Foundation Long-Term Ecological Research sites.

Dissertation Research *Michigan State University, 1999-2003*

- Quantified how nutritional state, insect predation, and resource abundance influence the foraging behavior of an aquatic snail species (*Physa gyrina*).
- Evaluated how aquatic gastropod species richness and composition affect pond ecosystem functioning.
- Examined how predation and resource availability can mediate the effects of aquatic gastropod species richness on ecosystems.

Collaborative Research *Michigan State University, 2001-2003*

- Investigated how algal resource availability affects the relative strengths of density-mediated and trait-mediated indirect effects of the invertebrate predator *Belostoma flumineum* on algae (2003 with B. Luttbeg – MSU/UC Davis).
- Investigated the effects of an omnivorous crayfish species (*Orconectes virilis*) on the succession of ponds following disturbance (2001-2002 with N. Dorn - MSU).
- Tested theoretical models of mortality-mediated species coexistence by manipulating density-independent mortality in zooplankton communities (2001 with G. Mittelbach, T. Darcy, N. Dorn, E. Garcia, C. Steiner - MSU).

Undergraduate Research *Bowling Green State University, 1996-1997*

- Performed independent research addressing how the behavior of an exotic fish (round goby *Neogobius melanostomus*) influences crayfish – bass interactions.
- Gained experience with experimental design and execution, statistics, scientific writing, grant writing, and presentation of research to peers.

Publications:

Wojdak JM, GG Mittelbach. 2007. Consequences of habitat partitioning among snails for pond ecosystem function. *Ecology* 88:2072-2083.

Wojdak JM. 2005. Top-down, bottom-up, and consumer species richness effects on ecosystems: context dependency and relative effect strengths. *Ecological Monographs* 75:489-504.

“Faculty of 1000 – Biology” evaluation for Wojdak JM *Eco Mono* 2005 75 :489-504

<http://www.f1000biology.com/article/nonpub143066/evaluation> - Rated a “Must Read”

“A most remarkable finding of this aquatic mesocosm experiment is that consumer species richness had effects on ecosystem properties often similar in magnitude to, or more important than, effects of nutrient enrichment and predation. This finding is counter to the common belief that biodiversity effects on ecosystem functioning are always small compared to environmental factors and to biotic factors that have been traditionally studied. Considering effect sizes in addition to significance is critical in future experiments to reveal the relative importance of biodiversity effects.” M. Gessner.

Wojdak JM, BT Luttbeg. 2005. Relative strength of trait-mediated and density-mediated indirect effects of a predator vary with resource levels. *Oikos* 111:592-598.

Steiner CF, TL Darcy, NJ Dorn, EA Garcia, GG Mittelbach, **JM Wojdak**. 2005. Indirect facilitation and consumer diversity regulate trophic-level biomass and population variability in a model planktonic system. *Oikos* 110:556-566.

Dorn NJ, **JM Wojdak**. 2004. The role of omnivorous crayfish in littoral communities. *Oecologia* 140:150-159.

Mittelbach GG, TL Darcy, NJ Dorn, EA Garcia, CF Steiner, **JM Wojdak**. 2004. The impact of density-independent mortality on species coexistence: an experimental test with zooplankton. *Oikos* 107:415-421.

Knapp AK, MD Smith, SL Collins, N Zambatis, M Peel, S Emery, **JM Wojdak**, H Biggs, J Kruger, SJ Andelman. 2004. Searching for generality in ecology: testing North American grassland rules in South African savannas. *Frontiers in Ecology and the Environment* 2(9):483-491.

Wojdak JM. Species interactions and the functioning of pond ecosystems. Dissertation, Michigan State University, February 2004.

Wojdak JM. Foraging and refuge use by a pond snail: effects of physiological state, predators, and resources. *In revision*.

Wojdak JM, DC Trexler*. Relative strength of trait- and density-mediated indirect effects of a predator in a freshwater food chain: the influence of predation intensity. *In preparation*.

Presentations:

Wojdak JM, J Guinan, J Wirgau, and 8 others. Using a real-world environmental issue as the context for college science teaching. Society of Wetland Scientists Annual Meeting, Sacramento, CA, 2007.

Wojdak JM, J Guinan, J Wirgau, and 8 others. Using a real-world environmental issue as the context for college science teaching. Society of Wetland Scientists Annual Meeting, Sacramento, CA, 2007.

Wojdak JM. How strong can diversity effects on pond ecosystems really be? *Invited Seminar*. Virginia Polytechnic Institute and University, Blacksburg, VA, 2006.

Wojdak JM. Foraging and refuge use by the pond snail: effects of physiological state, predators, and resource levels. Ecological Society of America Annual Meeting, Memphis, TN, 2006.

Crolley* J, **JM Wojdak.** Lethal and sub-lethal effects of copper on an aquatic invertebrate (*Lumbriculus variegatus*). Virginia Academy of Science Annual Meeting, Blacksburg, VA, 2006.

Shakeshaft* SA, **JM Wojdak.** Pond macroinvertebrate community composition along environmental gradients. Virginia Academy of Science Annual Meeting, Blacksburg, VA, 2006.

Trexler* DC, **JM Wojdak.** Relative strength of trait- and density-mediated indirect effects of a predator in a freshwater food chain: the influence of predation intensity. Southern Region Honors Council Annual Meeting, Orlando, FL, 2006.

Guinan J, C Kugler, **J M Wojdak.** Teaching by example: Integrating a service-learning application into university biology, chemistry, geology, and geography curricula. Greening of the Campus Meeting, Muncie, IN, 2005.

Wojdak JM, BT Luttbeg. The relative strength of trait- and density-mediated indirect interactions depend on resource levels in a freshwater food chain. Ecological Society of America Annual Meeting, Montreal, Canada, 2005.

Emery S, M Smith, C Bowles, MC Horner-Devine, J Drake, E Cleland, W Trollope, **JM Wojdak, R Boone, P Moehlman.** Relationships between diversity and community stability in Tanzanian grasslands. Ecological Society of America Annual Meeting, Portland, OR, 2004.

Wojdak JM. Species interactions and the functioning of pond ecosystems. *Invited Seminar*, Radford University, Radford, Virginia, 2003.

Wojdak JM. Species interactions and the functioning of pond ecosystems. *Invited Seminar*, Kalamazoo College, Kalamazoo, Michigan, 2003.

Wojdak JM. Context dependency of species richness effects on ecosystem function. Ecological Society of America Annual Meeting, Savannah, Georgia, 2003.

Dorn NJ, **JM Wojdak.** Crayfish alter succession of pond communities. Ecological Society of America Annual Meeting, Savannah, Georgia, 2003.

Wojdak JM, GG Mittelbach. Does niche complementarity explain species effects on ecosystems? An experiment with aquatic snails. North American Benthological Society Annual Meeting, Pittsburgh, PA, 2002.

Wojdak JM, GG Mittelbach. Functional redundancy among aquatic grazers: ecological context determines functional similarity. Ecological Society of America Annual Meeting, Snowbird, Utah, 2000.

Wojdak JM, GG Mittelbach. Functional redundancy among aquatic grazers: ecological context determines functional similarity. North American Benthological Society Annual Meeting, Keystone, Colorado, 2000.

Wojdak JM. Species diversity: effects of plant size, productivity, and sampling regime on species-area relationships. Ecological Society of America Annual Meeting, Spokane, Washington, 1999.

Davis CJ, JG Miner, **JM Wojdak.** Potential effects of the Round Goby (*Neogobius melanostomus*) on crayfish (*Orconectes rusticus*) in Lake Erie. Conference of the International Association for Great Lakes Research, Cleveland, OH, 1999.

Wojdak JM, JG Miner. Potential effects of the round goby (*Neogobius melanostomus*), an exotic invader, on crayfish – fish interactions. Ohio Academy of Science Annual Meeting, Bowling Green, OH, 1997.

* *indicate student co-authors.*

Scholarships, Fellowships, and Grants:

- Co-PI (with C. Kugler and J. Guinan), National Science Foundation Curriculum Adaptation and Implementation Grant, 2005-2008 (\$140,000).
- Radford University Mentoring Assistance Program Grant to conduct preliminary studies on the effects of trematode parasites on their snail and amphibian hosts, 2007 (\$14,800).
- Radford University SEED Grant to conduct preliminary studies of effects of aquatic predators on whole pond communities and spur a larger external grant proposal, 2005 (\$11,000).

- Dean's Faculty Development Grant to support undergraduate research, 2005-7 (\$4500, \$6000, \$8400).
- Dean's Faculty Development Grant to J. Wojdak, J. Guinan, S. Dennis and F. Singer to support undergraduate education in environmental biology, 2004 (\$17,000).
- Grant from the Jeffress Trust to Support Undergraduate Research, 2004 (\$2000).
- College of Natural Science Dissertation Completion Fellowship (MSU), 2003 (\$3000).
- National Science Foundation Research Training Grant Graduate Fellowship, 1997-2002.
- G. H. Lauff Research Award, 2000-2002 (\$500, \$400, \$800).
- National Science Foundation Graduate Research Fellowship – Honorable Mention, 1998.
- Michigan State University Program in Ecology, Evolutionary Biology and Behavior Research Grant, 1998-2001 (\$200/yr).
- Department of Zoology Research Grant, 1998-2001 (\$200/yr).
- Academic Scholarship from Amax Foundation, 1993-1997 (\$4000/yr).
- Academic Scholarship from Bowling Green State University, 1993-1995 (\$1000/yr).
- Tri - Beta Biological Honor Society Award, 1996-1997 (\$100/yr).

Relevant Training:

Participant *Science Environment for Ecological Knowledge, Early Career Faculty and Post-doctoral Training, Long Term Ecological Research Network Office, University of New Mexico, 2005*

- Learned state-of-the-art bioinformatics tools and practices including scientific workflows, grid technologies, metadata, database design and implementation, knowledge representation, ontologies, and dynamic website creation.

Coursework *Michigan State University, 1997-2002*

- Ecology and Evolution
 - Graduate courses in evolution, field ecology and evolution, population and community ecology, community and ecosystem ecology, genetics in ecology, biodiversity and ecosystem functioning.
- Statistics and Modeling
 - Graduate courses in statistics (3 semesters), design and interpretation of ecological experiments and observational studies, systems modeling for natural resource/ecological applications.

Leadership and Service:

National Science Foundation Research Proposal Reviewer, 2004-2006.

Peer reviewer for *J. of Animal Ecology*, *Biological Invasions*, *Ecography*, *Ecology*, *Ecology Letters*, *Ecoscience*, *J. of Experimental Marine Biology and Ecology*, *International Review of Hydrobiology*, *Oikos*.

Radford University

- Chair of Biology Program Assessment committee.

- Member of an Undergraduate Education Task Force as a part of the “Commission for the Future of Radford University” charged with setting long-term University goals and priorities for academic excellence.
- Chair (2006-7) and Member of the Animal Care and Use Committee, 2005-present.
- Redesigned the Biology Department website to better reflect and communicate the activities and expertise within the department. (www.radford.edu/~biol-web/BioIndex.html).
- Session Chair, Environmental science section of Virginia Academy of Science Annual meeting.
- Instructor for the Southwest Virginia Governor’s Science School, 2004.
 - Taught high school students ecological field methods and statistics.

Michigan State University

- Session chair - North American Benthological Society annual meeting, 2002.
- Session chair - Ecological Society of America annual meeting, 2000.
- Member of the executive committee of the Ecology, Evolutionary Biology and Behavior Program, 1999-2000.
- Treasurer of the Ecology, Evolutionary Biology and Behavior Program, 1998-1999.
- Member of the Ecology, Evolutionary Biology and Behavior Program, 1997-2004.

Bowling Green State University

- Beta Beta Beta Biological Honor Society President, 1995-1997.
- Beta Beta Beta Biological Honor Society Treasurer, 1994-1995.
- Beta Beta Beta Biological Honor Society Member, 1994-1997.

Membership in Professional Organizations:

Ecological Society of America.
North American Benthological Society.
Virginia Academy of Science.