

GREGORY R. RUTHIG

CURRICULUM VITAE

Department of Biology
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CURRENT POSITION

2008-Present Grinnell College, Visiting Assistant Professor of Biology

POSTDOCTORAL EXPERIENCE

2006-2008 Arizona State University, *advisors*: James Collins, Elizabeth Davidson

EDUCATION

2000-2006 University of Virginia, Ph.D. in Biology, *Thesis: The Influence of the Environment and Infectious Disease on Amphibian Egg Laying Behavior*

2004 Advanced Training in Amphibian Population Decline Research, La Selva and la Universidad de Costa Rica: Ten day course sponsored by Research and Analysis Network for Neotropical Amphibians (RANA), the Integrated Research Challenges in Environmental Biology (IRCEB) emerging amphibian disease group and the NSF on monitoring, global change, disease, contaminants, bioinformatics, quantitative methods, statistics, and experimental design.

1996 American Institute for Foreign Study, Universidad de Salamanca, Spain

1994-1998 Washington and Lee University, B.S. in Biology

RESEARCH INTERESTS

Disease ecology
Microbial ecology
Evolutionary biology
Amphibian diseases
Population ecology

TEACHING EXPERIENCE

January 2006 **Course Instructor** (co-taught), University of Virginia, Biology 330, Emerging Infectious Disease in Human and Wildlife

April 6, 2004 **Guest Lecturer**, Biology of Infectious Diseases, Biology 309, University of Virginia, *title*: "The Emergence of New Diseases"

- March 2004 **Guest Lecturer**, Introduction to Natural History, Natural Science 145, Piedmont Virginia Community College, *title*: “Reptiles and Amphibians of Virginia”
- Fall 2005 **Teaching Assistant**, University of Virginia, Microbiology Laboratory, Biology 315, Professor: Dr. Ronald Bauerle
- Spring 2003, 2004, 2005 **Teaching Assistant**, University of Virginia, Biology 309, Biology of Infectious Diseases, Professor: Dr. Janis Antonovics
- Spring 2001 **Teaching Assistant**, University of Virginia, Biology 204, an introductory survey of a wide range of biota, Professor: Dr. Kristen Curran
- Fall 2001, 2002 **Teaching Assistant**, University of Virginia, Biology 203, an introduction to molecular techniques, Professor: Dr. Elizabeth Machunis-Masuoka

UNDERGRADUATE MENTORING

- Spring 2007 **Undergraduate Mentor**, Arizona State University, Tempe, AZ: Mentored Lauren Kiraly on her independent project titled, The effects of UV-B radiation on persistence of an amphibian pathogen in pond water
- Summer 2003, 2004 **Research Experience for Undergraduates (REU) Mentor**, Mountain Lake Biological Station, Giles County, VA: Mentored Katie Provost, an undergraduate from the College of William and Mary on her project entitled, *Saprolegnia*: True multihost pathogen or undercover specialist? Katie is currently a Ph.D. student at John Hopkins University
- Summer 2002 **Research Experience for Undergraduates (REU) Mentor**, Mountain Lake Biological Station, Giles County, VA: Mentored Stesha Pasachnik, an undergraduate from Earlham College on her project entitled, *Versatility of Habitat Use in Three Sympatric Species of Plethodontid Salamanders*, which was published in the Journal of Herpetology. Stesha is currently a Ph.D. student at the University of Tennessee

RESEARCH EXPERIENCE

- 2006-present **Postdoctoral Research**, Arizona State University, Tempe, AZ: Examined the role of host amphibian communities on the dynamics of the amphibian pathogen, *Batrachochytrium dendrobatidis*
- 2003-2005 **Ph.D. Research**, Savannah River Ecology Laboratory, Aiken, SC: Surveyed breeding populations of the southern leopard frog; mapped location of several hundred egg masses using a Trimble GPS unit, digital photographs and Arcview GIS; collected and isolated strains of oomycetes from infected eggs in the field

- 2001-2004 **Ph.D. Research**, Mountain Lake Biological Station, Giles County, VA: Performed lab and field experiments on the impact of predators and disease on amphibian eggs and how the spatial distribution of eggs can affect their fitness
- 2001 **Rotation Research**, University of Virginia, Charlottesville, VA, *advisor*: Dr. Douglas R. Taylor: Examined the efficacy of microsatellite primers on several species of the plant genus *Silene* to examine phylogenetic relationships
- 2000 **Rotation Research**, University of Virginia, Charlottesville, VA, *advisor*: Dr. Henry M. Wilbur: Used skeletal chronology to determine the age of red-spotted newts captured in the field
- 2000 **Research Assistant**, Smithsonian Tropical Research Institute, Panama, *director*: Stefan Schnitzer, University of Pittsburgh: Surveyed seedlings in a study of the effects of lianas on plant biodiversity
- 1999-2000 **Research Assistant**, Smithsonian Tropical Research Institute, Panama, *director*: Dr. Gregory Adler, University of Wisconsin-Oshkosh: trapped and collected demographic data on island mammal populations; conducted censuses of all flowering and fruiting plants on the island
- 1999 **Research Assistant**, Caribbean Conservation Corporation, Tortuguero Costa Rica, *director*: Sebastian Tröeng: Tagged, collected morphological data, and marked locations of nesting green and leatherback turtle populations; excavated hatched nests and performed necropsies on hatchlings and eggs; worked with a multilingual group of researchers from seven countries
- 1997 **R.E. Lee Research Assistant**, Washington and Lee University, Lexington, VA, *advisor*: Dr. Lawrence E. Hurd: Studied the effects of population density and intraspecific competition on the growth and development of larval amphibians

GRANTS AND FELLOWSHIPS

Sigma Xi Grant in Aid of Research. 2003-2005. \$1,000. The Influence of Disease on Seasonal Variation in Amphibian Life History Traits

National Science Foundation Doctoral Dissertation Improvement Grant. 2003-2005. \$6,408. The Influence of Disease on Seasonal Variation in Amphibian Life History Traits. Co-participant: Henry Wilbur

University of Virginia First Year Fellowship. 2000-2001. Tuition at the University of Virginia and an \$18,000 living stipend

Mountain Lake Biological Station Research Fellowship. 2001-2004. Summer living expenses and access to the facilities at the Mountain Lake Biological Station in Giles County, VA

PUBLICATIONS

- Ruthig, G. R. 2008. The Influence of Temperature and Spatial Distribution on the Susceptibility of Southern Leopard Frog Eggs to Disease. *Oecologia* 156: 895-903.
- Pasachnik, S. and G. R. Ruthig. 2004. Versatility of habitat use in three sympatric species of Plethodontid salamanders. *Journal of Herpetology* 38: 434-437.
- Karraker, N. E. and G. R. Ruthig. The interaction between road salt and water molds on amphibian egg mortality. *Environmental Research in review*.
- Ruthig, G. R. Water molds are pathogenic to two species of amphibians. *Diseases of Aquatic Organisms in review*.
- Ruthig, G. R. Weather and breeding behavior in *Rana catesbeiana*. *in prep*.
- Ruthig, G. R. Temperature affects disease susceptibility of frog eggs to infection by water molds but not the mating behavior of adults. *In prep*.

PRESENTATIONS

- Invited Seminar:** Washington and Lee University, Title: "Disease, the Environment, and Amphibian Egg Laying Behavior," *March 11, 2004*
- Seminar:** BESTNet – DIVERSITAS - AgTrans Workshop: Analyzing the Role of Agricultural Transformation and Invasive Species in Disease Emergence, Global Institute of Sustainability, Arizona State University, Tempe AZ, Title: "Globalization and Invasive Pathogens" *May 30, 2008*
- Seminar:** Host Pathogen Biology and the Global Decline of Amphibians, Arizona State University, Tempe, AZ, Title: "*Batrachochytrium dendrobatidis* at Amphibian Breeding Sites in Central Arizona" *November 2, 2007*
- Seminar:** Ecological Society of America, San Jose, CA, Title: "Temperature and Host Density Influence Susceptibility of Frog Eggs to Disease" *August 9, 2007*
- Seminar:** Host Pathogen Biology and the Global Decline of Amphibians, Arizona State University, Tempe, AZ, Title: "The Effect of Temperature on the Persistence of *Batrachochytrium dendrobatidis* Zoospores in Pond Water" *November 10, 2006*
- Poster:** Host Pathogen Biology and the Global Decline of Amphibians, Arizona State University, Tempe, AZ, Title: "The Role of the Environment and Egg Laying Behavior on *Saprolegnia* Transmission," *November 11, 2004*
- Poster:** Southeastern Ecology and Population Genetics Group, Camp Sequoia, VA, Title, "The Roles of Infectious Disease and the Environment in Bullfrog Oviposition Site Choice," *September 20, 2003*
- Poster:** Southeastern Ecology and Population Genetics Group, Hanging Rock, NC, Title: "Ecological Implications of Amphibian Egg Laying Behavior," *September 22, 2001*

SERVICE

Manuscript Referee for the following scholarly journals: *The American Naturalist*, *Journal of Herpetology*, *Oecologia*, *Ecology Letters*, *Southeastern Naturalist*, *Journal of Parasitology*, *Amphibian Conservation and Biology*, *Revista Iberoamericana de Micologia*, *Freshwater Biology*

Co-President, University of Virginia Biology Department Graduate Student and Post-
Doc Association, *2003-2004 Academic Year*

Judge, Ward Traditional Academy Science Fair, Tempe, AZ, *February 28, 2007*

Judge, Graduates in Earth, Life, and Social Sciences Symposium, Arizona State
University, *February 1, 2008*

Advisory Committee, Save the Frogs

SKILLS

Proficiency in Spanish, Gel Electrophoresis, Polymerase Chain Reaction (PCR),
Quantitative (realtime) PCR Freshwater aquarium setup and maintenance, Small
mammal trapping, Amphibian skeletal chronology, Small boat operation, PADI
certified SCUBA

Computer Programs: SAS, ArcView GIS, Metaview, Dreamweaver, Microsoft Excel,
Microsoft Word, Microsoft Powerpoint, Internet Explorer

INTERESTS

Hiking, Distance running, SCUBA diving, Trombone, Traveling, Downhill skiing,
Triathlon, Volleyball