

CURRICULUM VITAE  
**Matthew E. Neilson**

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**EDUCATION**

Ph.D. Biology, University of Toledo, Toledo, OH (*defending September 2009*) 2004-present  
M.S. Biology, California State University, Long Beach, CA 2000-2004  
B.S. Biology, University of New Hampshire, Durham, NH 1995-1999

**POSITIONS HELD**

Visiting Instructor Dept. of Integrative Biology, Univ. of South Florida 2009-2010

**RESEARCH EXPERIENCE**

**Dissertation**

Title: Systematics and evolution of the neogobiin gobies (Teleostei: Gobiidae). Advisor – Dr. Carol A. Stepien.  
Includes two years of RA support through NSF grant #DEB-0456972 to C. Stepien

- Field collection of gobies using a variety of methods (otter trawl, beach seine, fish traps, backpack electroshocker), including international fieldwork in Russia
- Specimen preservation using both ethanol and formalin, and maintenance of collection databases
- General protocols in molecular biology and population genetics/molecular systematics: DNA isolation, PCR amplification, electrophoresis, DNA sequencing and microsatellite analyses
- Analysis of morphological characters from museum specimens
- Analysis of DNA sequence and microsatellite data and morphological characters using various population genetic and phylogenetic software
- Authored, co-authored, and edited presentations for national and international conferences, as well as preparation of manuscripts for publication

**Master's thesis**

Title: Post colonization mitochondrial DNA genetics of two introduced populations of yellowfin goby, *Acanthogobius flavimanus*, in California. Advisor – Dr. Raymond R. Wilson, Jr.

- Field collection of gobies using a variety of methods (otter trawl, beach seine, fish traps), including international fieldwork in Japan
- DNA isolation, PCR amplification and sequencing
- Analysis of sequence data using various population genetic and phylogenetic software
- Preparation of presentations for local, regional, and national conferences, as well as a manuscript for publication

**Volunteer research assistant**

CSULB Shark Lab. September 2000 to December 2002. PI: Dr. Christopher Lowe.

- Assisted with population censusing, tagging, and acoustic tracking of the round stingray (*Urobatis halleri*) at Seal Beach, CA.

**Intern**

Center for Shark Research, Mote Marine Laboratory, Sarasota, FL. January to May 2000. PI's: Drs. Colin Simpfendorfer and Michelle Heupel.

- Husbandry and maintenance of captive bonnethead sharks (*Sphyrna tiburo*) in research aquaria
- Gill netting and tagging of small coastal sharks from laboratory research vessels
- Placement and maintenance of acoustic monitors
- Sectioning and preparation of tiger shark (*Galeocerdo cuvier*) vertebral centra for age and growth study

## RESEARCH INTERESTS

- Population genetics, phylogeography, ecology, systematics and natural history of marine and freshwater fishes
- Use of molecular tools and a population genetics approach to fisheries management and conservation
- Computer simulation and modeling in population genetics and fisheries biology

## PUBLICATIONS

**M. E. Neilson** and C. A. Stepien. 2009. Historic cryptic speciation and recent colonization of Eurasian monkey gobies (*Neogobius fluviatilis* and *N. pallasii*) revealed by DNA sequences, microsatellites, and morphology. In review for *Molecular Ecology*.

**M. E. Neilson** and C. A. Stepien. 2009. Escape from the Ponto-Caspian: Evolution and biogeography of an endemic goby species flock (Benthophilinae: Gobiidae: Teleostei). *Molecular Phylogenetics and Evolution* 54: 84-102.

K. A. Feldheim, P. Willink, J. E. Brown, D. J. Murphy, **M. E. Neilson**, and C. A. Stepien. 2009. Eight polymorphic microsatellite loci for the exotic round goby *Neogobius melanostomus* (Teleostei: Gobiidae) with cross-species amplification. *Molecular Ecology Resources* 9: 639-644.

**M. E. Neilson** and C. A. Stepien. 2009. Evolution and phylogeography of the tubenose goby genus *Proterorhinus* (Gobiidae: Teleostei): Evidence for new cryptic species. *Biological Journal of the Linnean Society* 96: 664-684.

C. A. Stepien, J. E. Brown, **M. E. Neilson**, and M. A. Tumeo. 2005. Genetic diversity of invasive species in the Great Lakes versus their Eurasian source populations: insights for risk analysis. *Risk Analysis* 25: 1043-1060.

**M. E. Neilson** and R. R. Wilson, Jr. 2005. mtDNA singletons as evidence of a post-invasion genetic bottleneck in yellowfin goby *Acanthogobius flavimanus* from San Francisco Bay, California. *Marine Ecology Progress Series* 296: 197-208.

## SELECTED PRESENTATIONS (\* denotes presenter)

**M. E. Neilson\*** and C. A. Stepien, 2008. What's in a name: new identity of invasive gobies in the Great Lakes. Ohio Academy of Sciences Annual Meeting, 11-13 April 2008, Toledo, OH.

**M. E. Neilson\*** and C. A. Stepien, 2006. Phylogenetic and biogeographic relationships of the neogobiin gobies. American Society of Ichthyologists and Herpetologists Annual Meeting, 12-17 July 2006, New Orleans, LA.

**M. E. Neilson\*** and C. A. Stepien, 2006. Molecular systematics and invasion pattern of the neogobiin fishes in the Great Lakes and Europe. International Association for Great Lakes Research Annual Meeting, 24-27 May 2006, Windsor, Ontario, Canada.

**M. E. Neilson\*** and C. A. Stepien, 2005. Genetic identity, systematics, and biogeography of invasive neogobiins: patterns in the Ponto-Caspian, the Great Lakes, and beyond. 2nd International Symposium on Invasive Species in the Holarctic, 27 September - 1 October, 2005.

**M. E. Neilson\*** and R. R. Wilson, Jr. 2004. What mtDNA tells us about the invasion history of yellowfin goby in California -part I: through the bottle's neck? American Society of Ichthyologists and Herpetologists Annual

Meeting, 26-31 May 2004, Norman OK.

**M.E. Neilson\*** and R. R. Wilson, Jr. 2003. Mitochondrial DNA genetics of two invasive populations of yellowfin goby (*Acanthogobius flavimanus*) in California. Invited speaker, fall quarterly meeting, American Institute of Fishery Research Biologists, Southern California chapter.

### **GRANTS AND AWARDS**

- 2007 Student Exchange Program, Deepfin Project (funded by NSF grant to Dr. Guillermo Orti, University of Nebraska; <http://www.deepfin.org>)
- 2005 IAGLR Scholarship; International Association for Great Lakes Research
- 2005 Student Travel Award; American Society of Ichthyologists and Herpetologists
- 2004 Kenneth L. Johnson Award: Outstanding Thesis in Life Sciences; College of Natural Sciences and Mathematics, CSULB
- 2004 Boeing Graduate Fellowship; College of Natural Sciences and Mathematics, CSULB
- 2003 Best Paper in Fisheries Biology; American Institute of Fishery Research Biologists. Awarded at the Southern California Academy of Sciences Annual Meeting, Northridge, CA
- 2003 Lerner-Gray Fund for Marine Research; American Museum of Natural History
- 2003 Richard B. Loomis Graduate Research Award; Department of Biological Sciences, CSULB
- 2003 Sally Casanova Pre-Doctoral Scholar Award; The California State University

### **SELECTED GRADUATE COURSEWORK**

Ichthyology	Computer Modeling in Biology
Foundations of Ecology	Seminar - Genetics of Invasive Species
Advanced Population Ecology	Seminar – Molecular Methods in Ecology
Molecular Evolutionary Ecology	Research in Tropical Marine Ecology
Understanding Biogeography	Invasive Species: Ecology, Evolution and Biogeography
Speciation: Concepts and Controversy	Diversity of Fishes (taken at Shoals Marine Laboratory with Dr. Bruce Collete – top student)
Multivariate Data Analysis	

### **PROFESSIONAL MEMBERSHIPS**

American Society of Ichthyologists and Herpetologists  
Sigma Xi

### **MENTORING**

University of Toledo NSF Research Experience for Undergraduates program

- Ian Hoffman (2006) – population genetics of the monkey goby *Neogobius fluviatilis*
- Jennifer Ohayon (2006) – population genetics of the racer goby *Babka gymnotrachelus*
- Mark Sibug (2007) – Population genetics and phylogeography of smallmouth bass *Micropterus dolomieu*

### **SERVICE**

Reviewer for: Journal of Great Lakes Research, Molecular Phylogenetics and Evolution, Molecular Ecology, Biological Journal of the Linnean Society.