

Curriculum Vitae
Heidi S. Fisher

Address: Harvard University
Department of Organismic and Evolutionary Biology
Museum of Comparative Zoology
26 Oxford Street
Cambridge, MA 02138
Tel: (617) 495-3405
Fax: (617) 495-5667
Email: hfisher@oeb.harvard.edu

Education:

2002 – 2006 **Ph.D. Biology**, *Boston University, Boston, MA*
2000 – 2001 **M.S. Biology**, *University of California, San Diego, CA*
1996 – 2000 **B.S. Biology – Ecology, Behavior, and Evolution**, *University of California, San Diego, CA*
2005 **Molecular Evolution Course**, *Marine Biological Laboratory, Woods Hole, MA*
1998 **University of California Tropical Biology Course**, *Monteverde, Costa Rica*

Research Experience:

Postdoctoral Research Fellow, 2007 - present

Harvard University, Department of Organismic and Evolutionary Biology

I am investigating the intensity of sperm competition in deermice (*Peromyscus*) with divergent mating systems and working to identify the underlying genetic basis of traits involved in sperm competition. This work examines the role of post-mating sexual selection in shaping male behavioral and physiological reproductive traits (advisors Dr. Hopi E. Hoekstra and Dr. Jerry A. Coyne).

Postdoctoral Research Fellow, 2006 - 2007

Texas A&M University, Department of Biology and Boston University, Department of Biology

I used molecular techniques to characterize recent hybridization in swordtail fishes (*Xiphophorus*) and found the contribution of maternal and paternal species to be asymmetric. I also investigated the phylogeography of the *X. birchmanni* species complex (advisors Dr. Gil G. Rosenthal and Dr. Michael D. Sorenson).

Doctoral Dissertation Research, 2002 - 2006

Boston University, Department of Biology

I examined the evolution of sexually-selected traits and mechanisms of reproductive isolation in a swordtail fish, *Xiphophorus birchmanni*. In particular, I investigated the role of the social, trophic, and physical environment on sexual and competitive communication. I found that recent hybridization of *X. birchmanni* and *X. malinche* is likely due to communication breakdown from anthropogenic disturbance (advisor Dr. Gil G. Rosenthal).

Research Assistant in Psychophysics, 2001 - 2002

University of California, San Diego, Department of Psychology

I assisted in designing and performing experiments on visual perception, with data analysis, and with manuscript preparation (advisor Dr. Donald A.I. MacLeod).

Master's Thesis Research, 1999 - 2001

University of California, San Diego, Division of Biology

I investigated the use of chemical communication in an endangered primate, the pygmy loris (*Nycticebus pygmaeus*), and its role in mate choice. I found that females use scent to discriminate between mates and select males with the highest perceived competitive ability indicated by the chemical cues (advisors Dr. Karen E. Marchetti and Dr. Ronald R. Swaisgood).

Research Assistant in Conservation, 2000

Conservation and Research for Endangered Species, San Diego Zoological Society

I assisted in establishing captive breeding protocols for Asian prosimians.

Assistant to the Curator, 1999 - 2000

Benthic Invertebrate Collection, Scripps Institute of Oceanography

I assisted the curator with the identification and accessioning of marine specimens.

Research Assistant in Behavioral Ecology, 1999

University of California, San Diego and Guanacaste National Park, Costa Rica

As a laboratory and field assistant, I recorded avian vocalizations, conducted song analysis, and netted and banded live songbirds (advisors Dr. Laura Molles and Dr. Sandra L. Vehrencamp).

Teaching Experience:**Graduate Teaching Fellow**

Boston University, Department of Biology

Spring 2004	Population Dynamics (with Dr. Paul H. Barber)
Fall 2003	Molecular Evolution (with Dr. Paul H. Barber)
Spring 2003	Animal Communication (with Dr. Gil G. Rosenthal)
Fall 2002	Sensory Biology (with Dr. Jelle Atema)

Graduate Teaching Assistant

University of California, San Diego, Division of Biology

Spring 2002	Animal Communication (with Dr. James C. Nieh)
Fall 2001	Conservation and the Human Predicament (with Dr. Shirley C. Strum and Dr. David S. Woodruff),

*Outstanding Teaching in Biology Award (2001)

Undergraduate Teaching Assistant

University of California, San Diego, Division of Biology

Fall 2000	Laboratory in Behavioral Ecology (with Dr. Catherine E. deRivera)
Summer 2000	Behavioral Ecology (with Dr. Karen E. Marchetti)
Fall 1999	Biometry (with Dr. Jeff Moorehead)

Published Manuscripts:

- Fabian, N.J., Albright, L.B., **Fisher, H.S.**, and G.G. Rosenthal. In press. Humic acid interferes with species recognition in zebrafish (*Danio rerio*). *Journal of Chemical Ecology*.
- Fisher, H.S.**, and G.G. Rosenthal. 2007. Male swordtails court with an audience in mind. *Biology Letters*. 3: 5-7.
- Fisher, H.S.**, and G.G. Rosenthal. 2006. Hungry females exhibit stronger mating preferences. *Behavioral Ecology*. 17: 979-981.
- Fisher, H.S.**, and G.G. Rosenthal. 2006. Female swordtail fish use chemical cues to select well-fed males. *Animal Behaviour*. 72: 721-725.
- Fisher, H.S.**, Wong, B.B.M., and G.G. Rosenthal. 2006. Alteration of the chemical environment disrupts communication in a freshwater fish. *Proceedings of the Royal Society of London, Series B*. 273: 1187-1193.
- Wong, B.B.M, **Fisher, H.S.**, and G.G. Rosenthal. 2004. Male mate choice for chemical cues in swordtail fish. *Behavioral Ecology*, 16: 818-822.
- Shady, S., MacLeod, D.I.A, and **Fisher, H.S.** 2004. Adaptation from invisible flicker. *Proceedings of the National Academy of Sciences, USA*, 101: 5170-5173.
- Fisher, H.S.**, R.R. Swaisgood, and H. Fitch-Snyder. 2003. Countermarking by male pygmy lorises (*Nycticebus pygmaeus*): do females use odor cues to select mates with high competitive ability? *Behavioral Ecology & Sociobiology*. 53: 123-130.
- Fisher, H.S.**, R.R. Swaisgood, and H. Fitch-Snyder. 2003. Odor familiarity and female preference for males in a threatened primate, the pygmy loris (*Nycticebus pygmaeus*). *Naturwissenschaften*. 11: 509-512.
- Shady, S., MacLeod, D.I.A, **Fisher, H.S.**, and Liang, J.Y. 2002. Adaptation from invisible luminance and chromatic flicker. *Journal of Vision*, 2: 68.

Grants and Fellowships:

2004-2006	Palmer-McLeod Research Fellowship
2005	Society for Integrative and Comparative Biology Grant
2005	Animal Behavior Society Student Research Grant
2005	E.O. Wilson Conservation Award
2004	Boston University Travel Grant
2002-2004	Boston University Graduate Teaching Fellowship
2001	Sigma Xi Student Research Grant
2000	Zoological Society of San Diego Conservation Grant
2000	Chancellors Undergraduate Research Fellowship
1999	Jeanne Messier Memorial Fund

Public Presentations:

- Evolution of sexual communication in a swordtail fish, *Xiphophorus birchmanni*.
Boston University, Boston MA. Mar. 2006
- Environmentally-mediated breakdown of species recognition in two hybridizing swordtail fishes, *Xiphophorus malinche* and *X. birchmanni*
Boston Behavior Club. Woods Hole, MA. Feb. 2005

- Love stinks: the sex lives of swordtail fishes
Nerd Nite, Boston, MA. Nov. 2004
- Environmentally-mediated breakdown of species recognition in two hybridizing swordtail fishes,
Xiphophorus malinche and *X. birchmanni*
Animal Behavior Society Meeting, Oaxaca, Mexico. June 2004.
- Evolution of a swordtail hybrid zone.
European Meeting of Poeciliid Biologists, Zurich, Switzerland. Dec. 2003.
- Dynamics of a hybrid zone between the swordtails *Xiphophorus birchmanni* and *X. malinche*
American Society of Ichthyology and Herpetology, Manaus, Brazil. July 2003.
- Love stinks: Female preference and chemical communication in two vertebrate species.
Boston University Seminar Series, Boston, MA. Apr. 2003.
- Female preference and chemical communication in two vertebrate species.
Boston Behavior Club. Woods Hole, MA. Feb. 2003.
- Chemical communication and female mate choice in the pygmy loris, *Nycticebus pygmaeus*.
Animal Behavior Society Meeting, Bloomington, IN. July 2002.
- Female preference and chemical communication in the pygmy loris, *Nycticebus pygmaeus*.
University of California, San Diego, Dec. 2001.
- Scent marking and its role in mate choice in the pygmy loris, *Nycticebus pygmaeus*.
The Center for Reproduction of Endangered Species, San Diego, CA. Nov 2001.

Media Coverage of Research:

- El Colombiano*, Colombia. Mar. 13, 2007. "Ella o Ellos: el dilema del pez"
- Smithsonian Magazine*, Jan. 2007. "Wild Things: Observed"
- Fox News Online*, MSNBC, LiveScience, Nov. 14, 2006 "Fish balance courtship with threats"
- Science ORF*, Austria, Nov. 12, 2006. "Schwertträgerfische balzen mächtig für die"
- The New York Times*, Nov. 7, 2006. "Courtship with a twist"
- The New York Times*, Feb. 28, 2006. "Alluring swordtail scent is lost in pollution"
- Neue Zürcher Zeitung*, Switzerland, Mar. 8, 2006. "Abwasser stört die Wahrnehmung von Schwertträger-Weibchen"
- The Conservation Behaviorist*, May 1, 2005. "Heidi Fisher, student at Boston University, receives E.O. Wilson Conservation Award"
- The Boston Globe*, Apr. 18, 2005. "At some local nightspots, nerds rule"

Service:

- Public Affairs Committee, Animal Behavior Society (2007 – present)
- Boston University Marine Program Student Association (Secretary 2002 – 2006)
- Weekly Seminar Organizer, Boston University Marine Program (2004 – 2005)
- Reviewer for National Science Foundation, *Proceedings of the Royal Society*, *Animal Behaviour*,
Behavioral Ecology, *Aquatic Toxicology*, *Ethology*, *Environmental Biology of Fishes*

Professional Memberships:

Animal Behavior Society

International Society of Behavioral Ecology

Graduate Women in Science

Harvard Graduate Women in Science and Engineering