

CURRICULUM VITAE

STEVEN M. PHELPS

Fall 2006

Assistant Professor, September 2002-present.

B30 Bartram Hall

Department of Zoology

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EDUCATION:

NSF Center for Behavioral Neuroscience, Emory University 2000-2002

Position: Postdoctoral fellow

Topic: Neurobiological and genetic mechanisms of monogamy.

Sponsors: Drs. Larry J. Young and Thomas R. Insel.

Smithsonian Tropical Research Institute 1999-2000

Position: Postdoctoral fellow

Topic: Cognitive models of mate choice in túngara frogs.

Sponsor: Dr. A. Stanley Rand.

U. Texas, Austin, Ph.D. in zoology/integrative biology 1994-1999

Position: Postdoctoral fellow

Dissertation: Historical influences on receiver biases -- neural network simulations and behavioral studies of call recognition in the túngara frog.

Supervisors: Drs. Michael J. Ryan and Walter Wilczynski.

U. Illinois, Urbana-Champaign, M.S. in biology, 1993-1994

Thesis: *In vivo* and *in vitro* studies of a putative neurotrophic factor, Dopamine-Releasing Protein.

Supervisor: Dr. Victor D. Ramirez.

U. Illinois, Urbana-Champaign, B.S. in physiology 1988-1992

GRANTS:

P.I., National Science Foundation, \$200,000 2006-2008

“Integrative biology of vocal communication”

P.I., National Science Foundation, \$20,000 2006

“RNAi approaches for non-model systems” (supplement)

P.I., National Geographic, \$20,000 2006

“Historical biogeography of the singing mice”

P.I., National Science Foundation, \$16,000 2005

“Workshop on rodents as models for integrative study of social behavior”

P.I., National Science Foundation, \$280,000 2003-2006

“Behavioral and neuroendocrine variation in mammalian mating systems.”

Selected as “leading edge” grant by National Science Foundation.

HONORS AND AWARDS:

University of Florida CLAS teaching award nominee	2006
NSF Center for Behavioral Neuroscience Postdoc. Fellow	2000-2002
Smithsonian Postdoctoral Fellow	1999
University of Texas Continuing Fellow nominee, declined	1999
University of Texas Tuition Fellowship	1998, 1999
Dorothea Bennet Travel Fellowship, U.T. Dept. Zoology	1996, 1998
Smithsonian Predoctoral Fellow	1998
Dorothea Bennet Research Fellowship, U.T. Dept. Zoology	1995, 1998
National Research Service Award, National Institutes of Health	1995-1998
Endowment for Excellence Fellowship, U.T. Dept. Zoology	1997
Bruton Award, U.T. Graduate School	1996
Sigma Xi Grants-in-Aid	1996
Gaige Award, American Society of Ichthyologists and Herpetologists	1996
National Science Foundation Undergrad. Research Fellowship	1992

PUBLICATIONS:

S.M. Phelps, A.S. Rand and M.J. Ryan. 2006. The mixed-species chorus as public information: male túngara frogs eavesdrop on a heterospecific. In press in *Behavioral Ecology*.

S.M. Phelps. 2006. Sensory ecology and the evolution of perceptual allocation. In press in *Philosophical Transactions of the Royal Society*.

S.M. Phelps. 2006. The integrative biology of social behavior: Rodents as extended model systems. *National Science Foundation Workshop Report*.

S.M. Phelps, A.S. Rand and M.J. Ryan. 2006. The cognitive architecture of mate choice and species recognition. *American Naturalist* 167:28-42.

S.M. Phelps. 2004. Appraising the brain's utility. *Trends in Ecology and Evolution* [book review].

S.M. Phelps and L.J. Young. 2003. Extraordinary diversity in vasopressin (V1a) receptor expression in wild prairie voles: Patterns of variation and covariation. *Journal of Comparative Neurology* 466:564-576.

M.J. Ryan, W. Rand, P.C. Hurd, **S.M. Phelps** and A.S. Rand. 2003. Generalization in response to mate recognition signals. *American Naturalist* 161:380-294.

S.M. Phelps. 2002. Like minds: Evolutionary convergence in nervous systems. *Trends in Ecology and Evolution* 17(4):157-158. [meeting summary]

S.M. Phelps, M.J. Ryan and A.S. Rand. 2001. Vestigial preferences in neural networks and túngara frogs. *Proceedings of the National Academy of Sciences* 98(23):13161-13166.

E.J. Yang, **S.M. Phelps**, D. Crews and W. Wilczynski. 2001. The effects of social experience on aggressive behavior in the green anole lizard (*Anolis carolinensis*). *Ethology* 107:777-793.

S.M. Phelps. 2001. History's lessons: a neural network approach to receiver biases and the

evolution of communication. In *Anuran Communication*, (M.J. Ryan Ed.) Smithsonian Press, pp. 167-180.

M.J. Ryan, **S.M. Phelps** and A. S. Rand. 2001. How evolutionary history shapes recognition mechanisms. *Trends in Cognitive Science* 5:143-148.

S.M. Phelps and M.J. Ryan. 2000. History influences signal recognition: Neural network models of túngara frogs. *Proceedings of the Royal Society B* 267:1633-1639.

S.M. Phelps, J. Lydon, B.W. O'Malley and D. Crews. 1998. Regulation of male sexual behavior by progesterone receptor, sexual experience, and androgens. *Hormones and Behavior* 34:294-302.

S.M. Phelps and M.J. Ryan. 1998. Neural networks predict response biases of female túngara frogs. *Proceedings of the Royal Society B* 265:279-285.

S.M. Phelps and V.D. Ramirez. 1994. Unilateral deficits induced in rats by MPP+ are markedly reduced by an N-terminal peptide fragment of dopamine-releasing protein. *Brain Research* 666:117-119.

L.M. Page and **S.M. Phelps**. 1994. Speciation and phylogenetic resolution. *Trends in Ecology and Evolution* 9:298.

Manuscripts submitted or in preparation:

A.G. Ophir, A.B. Sorin, **S.M. Phelps** and J.O. Wolff. Selection for social but not genetic monogamy in prairie voles. Submitted to *Animal Behavior*.

D. Blondel, J. Pino and **S.M. Phelps**. The social system of the Chiriqui singing mouse, *Scotinomys xerampelinus*. Submitted to *Journal of Mammalogy*.

A.G. Ophir, A.B. Sorin, **S.M. Phelps** and J.O. Wolff. Population variation in behavior, morphology and brains of prairie voles. Submitted to *Journal of Mammalogy*.

A.G. Ophir, J.O. Wolff and **S.M. Phelps**. "Monogamous" brains and the persistence of intraspecific variation. In preparation for submission to *Proceedings of the National Academy of Sciences*.

S.M. Phelps, A.G. Ophir and J.O. Wolff. The generalist index: an information theoretic measure of sexual, social and ecological interactions. In preparation for submission to *American Naturalist*.

D. Blondel and **S.M. Phelps**. Resident-intruder tests of the Chiriqui singing mouse, *Scotinomys xerampelinus*. In preparation for *Journal of Mammalogy*.

S.M. Phelps, M.M. Lim, and L.J. Young. Individual differences in vasopressin (V1a) receptors, medial amygdala and paternal care. In preparation for submission to *Hormones and Behavior*.

S.M. Phelps and M. Schweder. Phylogenetic footprinting of the murid vasopressin (V1a) receptor reveals novel putative regulatory regions. In preparation for *Molecular Biology and Evolution*.

Published abstracts:

A.G. Ophir, **S.M. Phelps** and J. O. Wolff. 2006. Selection for social but not genetic monogamy in the prairie vole. Paper presentation at the Society for Integrative and Comparative Biology (SICB) international conference, Orlando, Florida, January 2006.

A.G. Ophir, **S.M. Phelps** and J. O. Wolff. 2005. Defining mating system using information theory: space use and parentage in the prairie vole. Paper presentation at the Animal Behavior Society (ABS) annual meeting, Snowbird, Utah, August 2005.

D. Blondel and **S.M. Phelps**. 2004. Assessing the social systems of the singing mice (genus *Scotinomys*). *Animal Behavior Society*.

S.M. Phelps. 2004. A psychophysics of mate choice: insights from signal detection theory. *Animal Behavior Society*.

S.M. Phelps. 2004. Computational models of mate choice: insights into the evolution of brain and behavior. *Fourth International Congress on Ecological Informatics*.

S.M. Phelps, K.M. Sharer, and L.J. Young. 2002. Individual differences in vasopressin V1a receptor expression, promoter structure and social behavior. *Society for Neuroscience Abstracts*.

S.M. Phelps, T.R. Insel and L.J. Young. 2001. Individual differences and the origins of behavioral diversity. *J.B. Johnston Club* (comparative neuroscience).

S.M. Phelps, M.J. Ryan and A.S. Rand. 2001. A psychophysical approach to mate choice in female túngara frogs, *Physalaemus pustulosus*. *Animal Behavior Society*.

S.M. Phelps, K.M. Sharer, T.R. Insel and L.J. Young. 2001. Individual differences in neuropeptide receptor expression and promoter structure in wild prairie voles. *Sixth International Congress of Neuroethology*.

S.M. Phelps, S. Wooley, J. Lydon, B.W. O'Malley and D. Crews. 1998. Sexual behavior deficits in male PRKO mice: effects of sexual experience and testicular androgens. *Society for Neuroscience Abstracts*.

S.M. Phelps and M.J. Ryan. 1998. Evolutionary history shapes receiver biases: Artificial neural network models of call recognition in the túngara frog, *Physalaemus pustulosus*. *Fifth International Congress of Neuroethology*.

S.M. Phelps, J. Lydon, B.W. O'Malley and D. Crews. 1997. Progesterone receptor enhances reinstatement of male sexual behavior by testosterone: evidence from mice heterozygous for a progesterone receptor knockout. *Society for Neuroscience Abstracts*.

S.M. Phelps, M.J. Ryan and W. Wilczynski. 1996. The evolution of biases in mate choice: modeling call recognition in the túngara frog with neural networks. *Society for Neuroscience Abstracts*.

S.M. Phelps 1996. The evolution of biases in mate choice. *American Society of Ichthyologists*

and Herpetologists.

V.D. Ramirez, **S.M. Phelps**, and S. Kim. 1994. Treatment with a synthetic peptide from the N-terminus of DARP partially restores DA levels in MPP+-lesioned rats and drastically reduces amphetamine-induced rotation, *Society for Neuroscience Abstracts*.

Invited presentations – symposia and national/international meetings:

S.M. Phelps. Intraspecific and interspecific variation in brain and behavior. Winter Animal Behavior Conference, January 2006.

S.M. Phelps. Computational models of mate choice: insights into the evolution of brain and behavior. **Keynote address**. Fourth International Congress on Ecological Informatics. Busan, Korea, October 2004.

S.M. Phelps. A psychophysics of mate choice: insights from signal detection theory. Animal Behavior Society, Oaxaca, Mexico, July 2004.

S.M. Phelps. Neuropeptide receptors and monogamy in voles. Gordon Conference on Genes and Behavior, February 2004.

Invited presentations – departmental seminars:

S.M. Phelps. Prospects for an evolutionary neurobiology: from computational models to monogamy molecules. North Carolina State University, Department of Biology, November 2004; again at the University of Florida Medical School, November 2004, University of Texas at Austin, April 2005.

S.M. Phelps. A cognitive framework for mate choice and species recognition. Indiana University, Department of Biology, April 2004; again at Boston University, March 2004, University of North Carolina, November 2004.

S.M. Phelps. Individual differences and the origins of behavioral diversity: Vasopressin and monogamy. Indiana University, Department of Biology, April 2004; again at Boston University, March 2004.

S.M. Phelps. Convergence in the evolution of nervous systems. International Conference on Molecular Mechanisms in Higher Brain Function. February 2004 (declined due to conflict).

S.M. Phelps. Individual differences and the evolution of social behavior: vasopressin and monogamy in voles. University of Florida, Department of Psychology, December 2003.

S.M. Phelps. Making aesthetic judgments: cognitive approaches to mate choice in túngara frogs. University of Memphis, Department of Biology, September 2001.

S.M. Phelps. Making reproductive decisions: from computational models to monogamy molecules. University of Florida-Gainesville, Department of Biology, February 2001.

S.M. Phelps. Decision mechanisms in mate choice. Emory University, Department of

Psychology, January 2001.

S.M. Phelps. Decision mechanisms in mate choice. Smithsonian Tropical Research Institute, December 1999.

S.M. Phelps. Evolutionary history and receiver biases. Stanford University, February 1999.

S.M. Phelps. Historical influences on species recognition: Neural network models of túngara frogs. Symposium on advances in anuran communication, in honor of Dr. A. Stanley Rand. *American Society of Ichthyologists and Herpetologists*, July 1998.

S.M. Phelps. The persistence of evolutionary memory: Receiver history in neural networks and the túngara frog. Smithsonian Tropical Research Institute, June 1998.

S.M. Phelps. The evolution of a communication system: Neural networks and call recognition in the túngara frog. University of California, Berkeley, November 1997.

Reviewer for the following journals and institutions:

National Science Foundation
American Naturalist
Behavioral and Brain Sciences
Behavioral Ecology
Chemical Senses
Evolution
Journal of Neurobiology
Journal of Theoretical Biology
Proceedings of the Royal Society
Trends in Ecology and Evolution

Teaching appointments:

University of Florida at Gainesville

Assistant professor: Introductory biology: Integrative principles	fall 2002-2006
Undergraduate course	
Evolution of brain size	spring 2006
Graduate course	
Communication and signaling: from cells to systems	fall 2003-2005
Intensive graduate module	
Mechanisms of behavior	spring 2005
Graduate/undergraduate course	
Evolution of gene regulation	spring 2005
Graduate seminar	
Historical readings in animal behavior	spring 2004
Graduate seminar	

University of Texas at Austin

Guest lecturer: Biopsychology	fall 1997 - spring 1999
Teaching assistant: Neurobiology and Behavior	fall 1998
Cellular and Molecular Biology	fall 1994, spring 1995

Grader: Comparative Physiology fall 1995, spring 1996
Animal Physiology fall 1996, spring 1997
Nerve and Muscle Physiology fall 1997

University of Illinois at Urbana-Champaign

Teaching assistant: Organismal Biology fall 1993, sum. 1994
Plant Biology spring 1993, 1994

Popular and scientific press:

Thesis work the subject of a review piece in *TREE* (2001). Vole work reviewed in *Science* (March 2004, January 2005), *Science News* (2005), *The Economist* (February 2004), and in Matt Ridley's *Nature via Nurture* (2003). Singing mouse project recently discussed in *La Prensa*, a national Panamanian newspaper (March 2004).

Outreach activities:

Took part in SPICE, a departmentally based K-12 outreach program. Included developing an instructional module on cloudforests, using singing mice to motivate student involvement. The module was presented to six classes (20-30 students each) at the sixth and seventh grade levels. The outreach took place at Westwood Middle School in Spring 2005.