

Megan M. Mahoney

Assistant Professor

University of Illinois
Department of Comparative Biosciences
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EDUCATION

**Ph.D. Dual degrees in Zoology and Ecology,
Evolutionary Biology and Behavior (EEBB)** 2003

Michigan State University

“Sex, surges, and circadian rhythms: the timing of
reproductive events in a diurnal rodent”

Advisor: Dr. Laura Smale

Bachelor of Arts in Biology 1995

Bates College

Thesis High Honors, GPA 3.7, magna cum laude

Advisor: Dr. Cheryl M. McCormick

RESEARCH POSITIONS

Assistant Professor 2008-current

University of Illinois

Comparative Biosciences

Assistant Research Scientist 2006-2008

University of Michigan

Department of Psychology

Postdoctoral Research Fellow 2005-2006

University of Michigan

Toxicology Program

Department of Pediatrics

Advisor: Dr. Vasantha Padmanabhan

Postdoctoral Research Fellow 2003-2005

University of Michigan

Reproductive Sciences Program
 Department of Psychology
 Advisor: Dr. Theresa Lee

Graduate Assistant 1997-2003
Michigan State University
 Department of Zoology, Psychology
 Advisor: Dr. Laura Smale

Research Assistant 1995-1997
The Children's Hospital
Harvard Medical School
 Joint Program in Neonatology
 Supervisor: Dr. Kenneth Huttner

Undergraduate Honors thesis research 1994-1995
Bates College
 Department of Biology
 Advisor: Dr. Cheryl M. McCormick

Experimental Techniques

- Small animal surgery (stereotaxic surgery, gonadectomy)
- Behavioral testing
- Telemetry: wheel running, general cage activity and temperature (Minimitter)
- Neuronal tract-tracing
- Immunocytochemistry (double and triple label, DAB and fluorescence)
- *in situ* hybridization
- Histology
- Microscopy (light, confocal, digital imaging, and photomicrography)
- Radioimmunoassay
- Molecular biology (rt-PCR, cloning in situ probes, PCR, restriction enzyme digests)

HONORS AND RECOGNITIONS

Young Investigator Award, Society for Behavioral Neuroendocrinology 2006

National Research Service Award: Environmental Toxicology Training Grant 5T32ES007062-23 2005-2006

National Research Service Award: Reproductive Endocrinology Training Grant 5T32HD007048-32 2003-2005

Conference on Neural Control of Behavior full travel award 2004

Graduate School dissertation completion fellowship 2002

Vessa Notchev Fellowship from Graduate Women in Science	2002
NIMH-Society for Behavioral Neuroendocrinology travel award	2001
Society for Research on Biological Rhythms student travel award	1998
EEBB Program Michigan State University, Research Award	1997-2002
Zoology Department Michigan State University, Research Award	1997-2002
College of Natural Sciences Recruiting Fellowship	1997

RESEARCH SUPPORT

Morris Animal Foundation First Award for Small Companion Animals (\$50,000)	2010
University of Illinois Campus Research Board (\$3,000)	2010
Arnold O. Beckman Research Award (\$16,000)	2008
Sigma Xi Grants-in-Aid of Research award	2000

TEACHING EXPERIENCE AND AWARDS

Excellence-in-Teaching Citation	2003
University level award given to 6 graduate students (out of 7000+) each year <i>Michigan State University</i>	
Excellence-in-Teaching Citation	2003
<i>Michigan State University</i> College of Natural Science	

Visiting Instructor

<i>Laboratories in Biopsychology</i>	Fall. 2006
University of Michigan	Spring 2007
Dept. of Psychology (55 students)	Fall 2007
<i>Biological Rhythms and Behavior</i>	Fall 2006
University of Michigan	Spring 2008
Dept. of Psychology (50 students)	
<i>Hormones and Behavior</i>	Fall 2005
University of Michigan	Spring 2007
Dept. of Psychology (50 students)	Fall 2007
<i>Animal Behavior</i>	Fall 2003
University of Michigan	
Dept. of Psychology (150 students)	

Animal Behavior
 Michigan State University
 Dept. of Zoology (40 students)

Summer 2002

Professional Memberships

Society for the Study of Reproduction	2008-current
Society for Neuroscience	1998-current
Society for Research on Biological Rhythms	1998-current
Society for Behavioral Neuroendocrinology	1998-current

PUBLICATIONS

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1. **Mahoney, M.M.**, Lee, AY, Brezinski-Caliguri, DJ, and KM Huttner. 1995. Molecular analysis of the sheep cathelin family reveals a novel antimicrobial peptide. *FEBS Letters* 377:519-522.
 2. Huttner, KM, Brezinski-Caliguri, DJ, **Mahoney, M.M.**, and G. Diamond. 1998. Antimicrobial expression is developmentally regulated in the ovine gastrointestinal tract. *Journal of Nutrition*, 128 (2 suppl.) 297S-299S
 3. Rose, S. Novak, C., **Mahoney, M.M.**, Nunez, A. and, L. Smale. 1999. Fos expression within vasopressin-containing neurons in the suprachiasmatic nucleus of diurnal compared to nocturnal rodents. *Journal of Biological Rhythms*, 14:37-46.
 4. Blanchong, J., McElhinny, T.L., **Mahoney, M.M.**, and L. Smale. 1999. Nocturnal and diurnal rhythms in the unstriped Nile rat, *Arvicanthis niloticus*. *Journal of Biological Rhythms*, 14: 364-377.
 5. **Mahoney, M.M.**, Nunez, A.A., and L. Smale. 2000. Calbindin and Fos within the suprachiasmatic nucleus and the adjacent hypothalamus of *Arvicanthis niloticus* and *Rattus norvegicus*. *Neuroscience*, 99(3):565-575.
 6. **Mahoney, M.M.**, Bult, A., and L. Smale. 2001. Phase response curve and light induced Fos expression in the suprachiasmatic nucleus and adjacent hypothalamus of *Arvicanthis niloticus*. *Journal of Biological Rhythms*, 16(2):149-162.
 7. Nunes, S., McElhinny, T.L., **Mahoney, M.M.**, and L. Smale. 2002. Effects of photoperiod on the reproductive condition of Nile grass rats from an equatorial population. *African Journal of Ecology*, 40:295-302.
 8. **Mahoney, M. M.** 2003. Sex, surges and circadian rhythms: the timing of reproductive events in a diurnal rodent. *Zoology*. East Lansing, Michigan State University: 111.

9. **Mahoney, M. M.**, C. L. Sisk, Ross, H. E. and L. Smale. 2004. Circadian regulation of gonadotropin-releasing hormone neurons and the preovulatory surge in luteinizing hormone in the diurnal rodent, *Arvicanthis niloticus*, and in a nocturnal rodent, *Rattus norvegicus*. *Biology of Reproduction*, 70(4):1049-54.
10. Lee, T.M., Hummer, D.L., Jechura, T.J and **Mahoney, M.M.** 2004. Pubertal Development of Sex Differences in Circadian Function: an Animal Model. *New York Academy of Sciences*, 1021:262-275.
11. **Mahoney, M.M.** and L. Smale. 2005. A daily rhythm in mating behavior in a diurnal murid rodent *Arvicanthis niloticus*. *Hormones and Behavior*. 47:8-13
12. **Mahoney, M.M.** and L. Smale. 2005. Arginine vasopressin and vasoactive intestinal polypeptide fibers make appositions with gonadotropin releasing hormone and estrogen receptor cells in the diurnal rodent *Arvicanthis niloticus*. *Brain Research*. 1049:156-164
13. Jechura, T.J., **Mahoney, M.M.**, Stimpson, C.D. and T. Lee. 2006. Odor specific effects on reentrainment following phase advances in the diurnal rodent *Octodon degus*. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*. 292(6):R1808-1816.
14. Hummer, DH, Jechura T., **Mahoney, M.M.**, and T. Lee. 2007. Gonadal Hormone Effects on Entrained and Free-Running Circadian Activity Rhythms in the Developing Diurnal Rodent, *Octodon degus*. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*. 292(1):R586-597.
15. **Mahoney, M.M.**, Ramanathan, C. and L. Smale. 2007. Tyrosine hydroxylase positive neurons and their contacts with vasoactive intestinal peptide-containing fibers in the hypothalamus of the diurnal murid rodent, *Arvicanthis niloticus*. *Journal of Chemical Neuroanatomy*. 33:131-139.
16. Gorton, L.M., **Mahoney, M.M.**, Magorien, J.E., Lee, T.M. and R.I. Wood. 2009. Estrogen receptor immunoreactivity in late-gestation fetal lambs. *Biology of Reproduction*. 80(6): 1152-1159.
17. **Mahoney, M.M.**, Smale L., and T. Lee. 2009. Daily immediate early gene expression in the suprachiasmatic nucleus of male and female *Octodon degus*. *Chronobiology International*. 26(5): 821-837
18. **Mahoney, M.M.**, Ramanathan, C., Hagenauer, M.H. Thompson, R. Lee, T., and L. Smale. 2009. Daily rhythms and sex differences in vasoactive intestinal polypeptide, VIPR2 receptor, and arginine vasopressin mRNA in the suprachiasmatic nucleus of a diurnal rodent, *Arvicanthis niloticus*. *European Journal of Neuroscience*. 30(8): 1537-43.
19. **Mahoney, M.M.** 2010. Shift work, jet lag, and female reproduction. *International Journal of Endocrinology*. Epub 2010 March 8.
20. **Mahoney, M.M.** and V. Padmanabhan. 2010. Developmental programming: Impact of fetal exposure to endocrine disrupting chemicals on gonadotropin-releasing hormone and estrogen receptor mRNA in sheep hypothalamus. *Toxicology and Applied Pharmacology*. 247(2):98-104.

21. **Mahoney, M.M.** Rossi, B.V, Hagenauer, M. H. and T. Lee. 2010.
Characterization of the estrous cycle in *Octodon degus*. *Biology of Reproduction*.
Accepted.
22. Colby, L.A., H.G. Rush, **M.M. Mahoney**, and T.M. Lee, *The Degu*, in *The Laboratory Rabbit, Guinea Pig, Hamster and Other Rodents*, M. Suckow, R.P. Wilson, and K.A. Stevens, Editors. 2010, Elsevier. In Press.