**Megan M. Mahoney**

Associate Professor

University of Illinois

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***EDUCATION***

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

*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 (1993-1995)*

Thesis High Honors, magna cum laude Advisor: Dr. Cheryl M. McCormick

*Smith College (1991-1993)*

Biology Major

***EDUCATION***

**Associate Professor** 2016-current

*University of Illinois*

Comparative Biosciences, Program in Neuroscience  
  
**Assistant Professor** 2008-2016

*University of Illinois*

Comparative Biosciences, Program in Neuroscience

**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

***HONOR AND RECOGNITIONS***

Arnold O. Beckman Award for Research Excellence, University of Illinois 2012

Research Academy Member, College of ACES, 2012  
University of Illinois: 2 semester intensive program for junior faculty

Arnold O. Beckman Award for Research Excellence, University of Illinois 2008

Young Investigator Award, Society for Behavioral Neuroendocrinology 2006

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

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

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***

*Carle Illinois Collaborative Research Seed Funding Program* 8/2017-8/2018

Impact of hormonal changes and environmental chemicals on sleep disruptions in a population of menopausal women

$50,000

Role:PI

*University of Illinois Campus Research Board* 1/2013-12/2013

Arnold O. Beckman Award: This project determines the developmental period when estradiol modifies circadian rhythms

$23,244

Role:PI

*University of Illinois Campus Research Board* 1/2011-12/2012

This project determined the role of ovarian hormones on the development and expression of circadian rhythms

$9,250

Role:PI

*Morris Animal Foundation First Investigator Award* 10/2010-10/2011

This research examines metabolic, immune and endocrine rhythms in cats housed in light:dark and constant light environments.

$50,000

Role:PI

*University of Illinois Campus Research Board* 1/2011-12/2011  
The goal of this project was to profile miRNA expression in the hearts of mice which cannot produce estradiol (aromatase deficient) and wildtype animals

$3,800

Role: Co-PI Bunick (PI)

*University of Illinois Campus Research Board* 9/2008Arnold O. Beckman Award: To examine the role of estrogen in the regulation of vasoactive intestinal polypeptide receptor expression on gonadotropin releasing hormone neurons.

$16,000

Role: PI

***TEACHING AWARDS AND EXPERIENCE***

***Awards***

**Kuhlenschmidt Innovative Teaching Award** Fall 2017

College of Veterinary Medicine

**Dr. Erwin Small Teaching Excellence Award in Veterinary Medicine** Spring 2016

**Faculty Mentor for Teaching** Fall 2012-current

Nominated to mentor faculty in their teaching careers College of Veterinary Medicine

**Outstanding Instructor Award** Spring 2012

Chicago Veterinary Medical Association

**List of Teachers Ranked as Excellent** Every Fall and Spring

*University of Illinois, must achieve a 4.4/5 pt scale* ***2010-current***

**Excellence-In-Teaching Citation** 2003

University level award given to 6 graduate students (out of 7000+) each year

*Michigan State University*

**Excellence-in-Teaching Citation** 2003

*Michigan State University*

College of Natural Science

***Experience***

**Structure and Function I, II, III: Neurobiology material** 2009- current

University of Illinois Urbana Champaign Department of Comparative Biosciences

College of Veterinary Medicine (120+ first year students) Every fall and spring semester since 2009

**Graduate Research Mentor** Ongoing

University of Illinois Urbana Champaign

* 1 Ph.D. student finished 2012
* 1 Ph.D. student finished 2014
* 1 Ph.D. student to finish 2020

**Undergraduate Research Mentor** Ongoing

University of Illinois Urbana Champaign

Molecular and Cellular Biology, Integrative Biology and Animal Science students (>20 total)

* Of 19 graduated students: 3 in medical school, 3 in veterinary school, 8 in graduate school

**Summer Research Opportunity Program (SROP)** Summer 2012, 2011, 2009

**Undergraduate Research Advisor**

* 3 students all in Ph.D programs

**Merial Summer Research Training Program for Veterinary Students** Summer 2013, 2012, 2009

Research Advisor

**Biological Rhythms and Behavior** Spring 2008, Fall 2006

*University of Michigan*

Dept. of Psychology (50 students)

**Hormones and Behavior** Spring and Fall 2007, Fall 2005

*University of Michigan*

Dept. of Psychology (50 students)

**Animal Behavior** Fall 2003

*University of Michigan*

Dept. of Psychology (150 students)

**Animal Behavior** Summer 2002

*Michigan State University*

Dept. of Zoology (50 students)

***OUTREACH***

***Project NEURON*** 2010-current ***(Novel Education for Understanding Research on Neuroscience)***

NSF SEPA funded project develops online interactive lessons, high school curricula, and professional development for participating high school teachers.

***Brain Awareness Day*** 2012-current (Annually)

Interactive presentations on biological rhythms

Coordinator of Brain Awareness Day 2018, 2019

***PUBLICATIONS***

1. Hatcher, K. M., Royston, S. E., & **Mahoney, M. M**. 2018. Modulation of circadian rhythms through estrogen receptor signaling. *Eur J Neurosci*. doi: 10.1111/ejn.14184
2. Hatcher, K. M., & **Mahoney, M. M**. 2018. Circadian Rhythms-Male. In M. K. Skinner (Ed.), *Encyclopedia of Reproduction* (Vol. 1, pp. 436-441): Academic Press.
3. Smith, R. L., Flaws, J. A., and **Mahoney, M. M**. 2018. Factors associated with poor sleep during menopause: results from the Midlife Women's Health Study. Sleep Med, 45, 98-105.
4. Robertson AL, Balachandran RC, **Mahoney MM**, Eubig PA. 2017. Circadian disruption affects initial learning but not cognitive flexibility in an automated set- shifting task in adult Long-Evans rats. Physiol Behav 179:226-234
5. Royston SE, Bunick D, **Mahoney MM**. 2016. Oestradiol exposure early in life programs daily and circadian activity rhythms in adult mice. Journal of Neuroendocrinology 28(1).
6. Blattner MS, **Mahoney MM**. 2015. Changes in estrogen receptor signaling alters the timekeeping system in male mice. Behav Brain Research 294:43-49*.*
7. Royston, S. E., A. G. Kondilis, S. V. Lord, N. Yasui, J. A. Katzenellenbogen and **M. M. Mahoney**. 2014. ESR1 and ESR2 differentially regulate daily and circadian activity rhythms in female mice. Endocrinology **155**(7): 2613-2623.
8. Blattner, M. S. and M**. M. Mahoney**. 2014. Estrogen receptor 1 modulates circadian rhythms in adult female mice. Chronobiology International **31**(5): 637- 644
9. Ayelet Ziv-Gal, A. Flaws, J.A., **Mahoney, M.**, Miller, S.R, Zacur, H.A. and L. Gallicchio. 2013. Genetic polymorphisms in the AHR signaling pathway and CLOCK may be associated with sleep disturbances in midlife women. Sleep Medicine 14(9) 883-7
10. Blattner, M. and **M. Mahoney**. 2013 Phase response curve and cellular activation in response to light-pulse in the suprachiasmatic nucleus of two strains of mice with impaired responsiveness to estrogens. Journal of Biological Rhythms 28(4), 291-300.
11. Blattner, M. and **M. Mahoney**. 2012. Circadian parameters are altered in two strains of mice with transgenic modifications of estrogen receptor subtype 1. Genes, Brain and Behavior. 11(7), 828-36.
12. Steinberg, G. Byron, J. and **M. Mahoney**. 2012. A retrospective study of circadian and seasonal presentations of dogs with congestive heart failure: 119 cases (1997-2009). Journal of Veterinary Emergency and Critical Care. 22(3): 341-6. Doi: 10.1111/j.1476-4431.2012.00748.x.
13. Colby, L.A., H.G. Rush, **Mahoney, M**, 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. 2012, Elsevier.
14. Mong, J.A., Baker, F.C., **Mahoney, M.M.**, Paul, K.N., Schwartz, M.D., Semba, K., Silver, R. 2011, Sleep, rhythms, and the endocrine brain: influence of sex and gonadal hormones. J Neurosci. 31, 16107-16.
15. Brockman, R., Bunick, D. and **M. Mahoney.** 2011. Estradiol deficiency during development modulates the expression of circadian and daily rhythms in male and female aromatase knockout mice. Hormones and Behavior. 60(4), p. 439- 47.
16. **Mahoney, M.M.** Rossi, B.V, Hagenauer, M. H. and T. Lee. 2011. Characterization of the estrous cycle in *Octodon degus*. Biology of Reproduction. 84(4):664-71.
17. **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.
18. **Mahoney, M.M.** 2010. Shift work, jet lag, and female reproduction. International Journal of Endocrinology. Epub 2010 March 8.
19. **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.
20. **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): 821-83.
21. 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.
22. **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.
23. 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.
24. 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.
25. **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
26. **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
27. 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.
28. **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.
29. **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.
30. 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.
31. **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.
32. **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.
33. 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.
34. 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.
35. 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