**Megan M. Mahoney**

Associate Professor

University of Illinois

Department of Comparative Biosciences

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***EDUCATION***

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

*Michigan State University*

**Bachelor of Arts in Biology** 1995

*Bates College (1993-1995)*

*Smith College (1991-1993)*

***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** 2003-2006

*University of Michigan*

**Graduate Assistant** 1997-2003

*Michigan State University*

**Research Assistant** 1995-1997*The Children’s Hospital  
Harvard Medical School*

***HONOR AND RECOGNITIONS***

Dr. Gordon and Mrs. Helen Kruger All-Round Excellence Award 2020

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***

***Current***

1R01ES032163-01 8/17/2020-5/31/2024

*NIH*

Gender and sex differences in phthalate-induced toxicity in the reproductive system

**This project examines the mechanisms by which a phthalate mixture impacts male and female reproductive physiology and behaviors.**

**Role: co-PI**

*Center for Social and Behavioral Science Small Grant Program***7/31/2020-7/31/2021**

*University of Illinois at Urbana Champaign*

The influence of depression and modifiable lifestyle factors on sleep in menopausal women

**Role: co-PI**

*Companion Animal Research Grant Program* 1/2020-4/2021

The Association of Urinary Phthalate Metabolites with Feline Hyperthyroidism

$9,312

Role: PI

*Carle Illinois Collaborative Research Seed Funding Program* 8/2017-8/2021

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

$50,000

Role:PI

***Completed***

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

Arnold O. Beckman Award: This project determined 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  
This research profiled 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

***Service***

**Graduate College Executive Committee, UIUC** 2020-current

**Admissions Committee Chair, Neuroscience Program** 2019-current

**Executive Committee, Neuroscience Program** 2019-current

**Seminar Committee Chair, Neuroscience Program** 2019-current

**Director of Graduate Studies, Comparative Biosciences** 2019-current

**Chair, Educational Policy Committee, College of Veterinary Medicine** 2019-2021

**Educational Policy Committee, Department of Comparative Biosciences** 2009-current

**Educational Policy Committee, College of Veterinary Medicine** 2009-2015, 2016-2021

**Faculty Course Coordinator VM 602: Structure and Function I** 2009-current

**Faculty Course Coordinator VM 604: Structure and Function III** 2017-current

**Comparative Biosciences Department Seminar Coordinator (Spring)** 2017-current

**Neurotoxicology** 2021

University of Illinois Urbana Champaign Department of Comparative Biosciences

Graduate level course taught in the Spring of odd years

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

University of Illinois Urbana Champaign Department of Comparative Biosciences

College of Veterinary Medicine (130+ first year students) Every fall and spring semester since 2009

**Structure and Function I:** Clinical Correlations 2009-current

University of Illinois Urbana Champaign Department of Comparative Biosciences

College of Veterinary Medicine (130+ first year students) Every fall 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 finished 2020
* 1 Ph.D. student to finish 2022

**Undergraduate Research Mentor** Ongoing

University of Illinois Urbana Champaign

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

* Of 26 graduated students: 6 in medical school, 3 in veterinary school, 11 in graduate school

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

**Undergraduate Research Advisor**

* 3 students all matriculated to Ph.D programs

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

Research Advisor

***OUTREACH***

***Project NEURON*** 2010-2016 ***(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 KM, Smith RL, Chiang C, Li Z, Flaws JA, Mahoney MM. Associations of phthalate exposure and endogenous hormones with self-reported sleep disruptions: results from the Midlife Women's Health Study. Menopause. 2020. Epub 2020/08/03. doi: 10.1097/GME.0000000000001614. PubMed PMID: 32740484.
2. Balachandran RC, Hatcher KM, Sieg ML, Sullivan EK, Molina LM, Mahoney MM, Eubig PA. Pharmacological challenges examining the underlying mechanism of altered response inhibition and attention due to circadian disruption in adult Long-Evans rats. Pharmacol Biochem Behav. 2020;193:172915. Epub 2020/04/01. doi: 10.1016/j.pbb.2020.172915. PubMed PMID: 32224058.
3. Dailey, M.J. and M.M. Mahoney, Circadian Changes in Gut Peptide Levels and Obesity, in Neurological Modulation of Sleep: Mechanisms and Function of Sleep Health, R.R. Watson and V.R. Preedy, Editors. 2020, Academic Press.
4. Hatcher KM, Royston SE, Mahoney MM. Modulation of circadian rhythms through estrogen receptor signaling. Eur J Neurosci. 2020;51(1):217-28. Epub 2018/10/03. doi: 10.1111/ejn.14184. PubMed PMID: 30270552.
5. Hatcher, K. M., Willing, J., Chiang, C., Rattan, S., Flaws, J. A., & Mahoney, M. M. (2019). Exposure to di-(2-ethylhexyl) phthalate transgenerationally alters anxiety-like behavior and amygdala gene expression in adult male and female mice. Physiol Behav, 207, 7-14. doi: 10.1016/j.physbeh.2019.04.018
6. 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.
7. 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.
8. 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
9. 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).
10. Blattner MS, Mahoney MM. 2015. Changes in estrogen receptor signaling alters the timekeeping system in male mice. Behav Brain Research 294:43-49.
11. 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.
12. Blattner, M. S. and M. M. Mahoney. 2014. Estrogen receptor 1 modulates circadian rhythms in adult female mice. Chronobiology International 31(5): 637- 644
13. 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
14. 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.
15. 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.
16. 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.
17. 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.
18. 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.
19. 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.
20. 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.
21. 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.
22. Mahoney, M.M. 2010. Shift work, jet lag, and female reproduction. International Journal of Endocrinology. Epub 2010 March 8.
23. 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.
24. 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.
25. 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.
26. 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.
27. 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.
28. 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.
29. 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
30. 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
31. 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.
32. 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.
33. 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.
34. 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.
35. 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.
36. 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.
37. 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.
38. 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.
39. 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