

Mary K. Holder

**CURRICULUM VITAE**

Business address: Neuroscience Institute, Georgia State University  
P.O. Box 5030, Atlanta, GA 30302-5030

Phone: 404-413-5891  
email: [mconklin@gsu.edu](mailto:mconklin@gsu.edu)

Home address: 1401 W Paces Ferry Rd NW, 4208  
Atlanta, GA 30327

Phone: 404-277-4631

**EDUCATION**

*Degree:* Doctor of Philosophy, Neuro and Cognitive Sciences

*Advisor:* Jessica A. Mong, Ph.D.

*Institution:* The University of Maryland, Baltimore, Baltimore, MD (2004-2011)

*Dissertation:* Interactions of Catecholamines and Progesterone Receptors in the Medial Amygdala Enhance Female Sexual Motivation

*Degree:* Bachelor of Sciences, Applied Psychology (with High Honor)

*Advisor:* Paul M. Corballis, Ph.D.

*Institution:* The Georgia Institute of Technology, Atlanta, GA (2000-2004)

**EXPERIENCE**

*Position:* Postdoctoral Research Associate

*Advisor:* Geert J. deVries, Ph.D.

*Institution:* The Georgia State University, Atlanta, GA (2014-present)

*Position:* Postdoctoral Research Fellow

*Advisor:* Jeffrey D. Blaustein, Ph.D.

*Institution:* The University of Massachusetts, Amherst, Amherst, MA (2011-2014)

*Position:* Research Assistant (Rotation)

*Advisor:* Richard Traub, Ph.D.

*Institution:* The University of Maryland, Baltimore, Baltimore, MD (2004)

*Position:* Research Assistant (Rotation)

*Advisor:* Istvan Mercenthaler, Ph.D.

*Institution:* The University of Maryland, Baltimore, Baltimore, MD (2005)

*Position:* Research Assistant

*Sponsor:* Paul M. Corballis, Ph.D.

*Institution:* The Georgia Institute of Technology, Atlanta, GA (2002-2004)

**FELLOWSHIPS & GRANTS**

- Ruth L. Kirschstein National Research Service Award (F31 DA-02493; 2009-2011)
- Cellular and Integrative Neuroscience Training Grant (T32 DE-1407404; 2004-2006)

## PUBLICATIONS

M.J. Paul, N.V. Peters, **M.K. Holder**, A. M. Kim, J. Whylings, J. I. Terranova, & G.J. deVries (2016). Atypical social development in vasopressin-deficient Brattleboro rats. *eNeuro*. 3 (2) e0150-15.2016 1-15.

J.D. Blaustein, N. Ismail, & **M.K. Holder** (2016). Puberty as a time of remodeling the adult response to ovarian hormones. *The Journal of Steroid Biochemistry and Molecular Biology*. 160, 2-8.

**M.K. Holder**, S. S. Veichweg, & J. A. Mong (2015). Methamphetamine-Enhanced Female Sexual Motivation is Dependent on Dopamine and Progesterone Signaling in the Medial Amygdala. *Hormones & Behavior* 67, 1-11.

**M.K. Holder** & J. D. Blaustein. (2014). Puberty and Adolescence as a Time of Vulnerability to Stressors that Alter Neurobehavioral Processes. *Frontiers in Neuroendocrinology*. 35(1), 89-110.

T. Blustein, M.A. Castello, S. S. Veichweg, M. M.Hadjimarkou, J.A. McQuail, **M. Holder**, L.P.Thompson, & J.A. Mong (2013). Differential Response of Hippocampal Neurons and Astrocytes to Nicotine and Hypoxia in the Fetal Guinea Pig. *Neurotoxicity Research*. 24(1), 80-93.

**M.K. Holder** & J.A. Mong. (2010). Methamphetamine Enhances Paced Mating Behavior and Neuroplasticity in the Medial Amygdala. *Hormones & Behavior*. 58(3), 519-25.

**M.K. Holder**, M.M. Hadjimarkou, S.L. Zup, R. Benham, T. Blustein, M.M. McCarthy, J.A. Mong. (2010) Methamphetamine Facilitates Female Sexual Behavior and Enhances Neuronal Activation in the Medial Amygdala and Ventromedial Nucleus of the Hypothalamus. *Psychoneuroendocrinology*. 35(2), 197-208.

M.M. Hadjimarkou, R.Benham, J.M. Schwartz, **M.K. Holder**, J.A. Mong (2008) Estradiol Suppresses Rapid Eye Movement Sleep and Activation of Sleep-Active Neurons in the Ventrolateral Preoptic Area. *European Journal of Neuroscience*. 27 (7), 1780-1792.

## AWARDS & HONORS

- Society for Behavioral Neuroendocrinology Travel Award (2013)
- Graduate Student Poster Award (Third Prize), Society for Behavioral Neuroendocrinology (2011)
- NIDA Early Career Investigator (2010)
- Society for Behavioral Neuroendocrinology Travel Award (2009)
- Florence P. Haseltine Award for Best New Investigator, Organization for the Study of Sex Differences (2008)
- Inclusion in Society for Neuroscience Media Book Publication (2008, 2006)
- Biomedical/Basic Science Research Poster Award (2006)

## ORAL PRESENTATIONS

Neuroscience Institute Breakfast Lecture. "Alternation of the Brain and Hormone-regulated Behaviors by Drugs and Stress." Atlanta, GA (2014)

Hormones for Breakfast. "The potential role of microglia in pubertal LPS-induced alteration in hormone-responsive affective behaviors." Amherst, MA (2012).

11<sup>th</sup> Annual Center for Reproductive Studies Retreat. "Methamphetamine Enhances Motivated Sexual Behaviors in the Female Rat." Baltimore, MD (2009)

Neuroendocrinology Research Day. "Methamphetamine-enhanced Motivation for Female Sexual Behavior." Philadelphia, PA (2008)

Graduate Research Day. "Methamphetamine Enhances Motivation for Female Sexual Behavior." Baltimore, MD (2008)

8<sup>th</sup> Annual Center for Reproductive Studies Retreat. "Methamphetamine Facilitates Female Sexual Behavior" Oella, MD (2006)

### **POSTER PRESENTATIONS & PUBLISHED ABSTRACTS**

**M.K. Holder**, B. Chassaing, N.V. Peters, J. Whylings, A. Gewirtz, G.J. deVries. Sex differences in the effects of dietary emulsifiers on physiology and behavior in mice. Philadelphia, PA: Organization for the Study of Sex Difference, 2016.

**M.K. Holder**, N.V. Peters, A. Castillo-Ruiz, M.D. Mosley, B. Chassaing, A.T. Gewirtz, N.G. Forger, G.J. deVries. Development of microglia of germ free and conventionally colonized mice. Chicago, IL: Society for Neuroscience, 2015.

A. Silva-Gotay, W. Vargas, **M.K. Holder**, H.N. Richardson. Effect of voluntary binge drinking on microglial activation in the medial prefrontal cortex of male and female rats. Chicago, IL: Society for Neuroscience, 2015.

**M.K. Holder** & J.D. Blaustein. Differential activation of microglia in the mouse brain following an immune challenge may contribute to vulnerability to stressors during puberty. Program No. 547.12 2014 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2014.

**M.K. Holder** & J. D. Blaustein. Morphological differences in microglia in the mouse brain through development may contribute to vulnerability to stressor during puberty. Program No. 276.03 2013 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2013.

**M.K. Holder** & J. D. Blaustein. Microglia Display Different Morphologies During the Pubertal Period and Adulthood. Program No. P3.67 2013 SBN Program Book. Atlanta, GA: Society for Behavioral Neuroendocrinology, 2013.

**M.K. Holder**, S.S. Veichweg, R.D. Burke, & J.A. Mong. Medial amygdala (MePD) catecholamines mediate methamphetamine-enhanced proceptive sexual behaviors. Program No. 714.13. 2011 Neuroscience Meeting Planner Washington, D.C. 2011.

**M.K. Holder**, & J.A. Mong. A Role for the Medial Amygdala (MeA) in Female Sexual Motivation. Program No. P1.42 2011 SBN Program Book. Queretaro, MX: Society for Behavioral Neuroendocrinology, 2011.

**M.K. Holder**, S.S. Veichweg, & J.A. Mong. Methamphetamine augments progesterone action in the mediaamygdala (MeA): A potential mechanism for drug-enhanced female sexual behavior. San Diego, CA:

NIDA Mini-Convention: Frontiers in Addiction Research Early Career Investigator Poster Session. 2010.

**M.K. Holder**, & J.A. Mong. Methamphetamine augments progesterone action in the medial amygdala (MeA): A potential mechanism for drug-enhanced female sexual behavior. San Diego, CA: Society for Neuroscience. Program No. 595.2, 2010 Neuroscience Meeting Planner 2010.

**M.K. Holder**, & J.A. Mong. Methamphetamine augments progesterone action in the medial amygdala (MeA): A potential mechanism for drug-enhanced female sexual behavior. Toronto, ON, CA: Society for Behavioral Neuroendocrinology. Program No. P1.69, 2010 SBN Program Book 2010.

**M.K. Holder**, & J.A. Mong. Methamphetamine enhances paced mating behavior. Chicago, IL: Society for Neuroscience. Program No. 465.8, 2009 Neuroscience Meeting Planner 2009.

**M.K. Holder**, & J.A. Mong. Methamphetamine enhances paced mating behavior. East Lansing, MI: Society for Behavioral Neuroendocrinology. Program No. P1.02, 2009 SBN Program Book 2009.

**M.K. Holder**, & J.A. Mong. Medial amygdala activation may underlie methamphetamine-induced facilitation of female sexual behavior. Program No. 866.9, 2008 Neuroscience Meeting Planner Washington, DC: Society for Neuroscience, 2008.

**M.K. Holder**, M.M. Hadjimarkou, S. L. Zup, M. M. McCarthy, J. A. Mong. Methamphetamine facilitates female sexual behavior and activates the neuronal circuitry underlying motivation. Program No. B13 OSSD Program Book. New Orleans, LA: Organization for the Study of Sex Differences. 2008.

**M.K. Holder**, M.M. Hadjimarkou, C.A., Cornil, G.F. Ball, M.M. McCarthy, J.A. Mong. Methamphetamine activation of the neural circuitry involved in female sexual behavior. Program No. 84.5, 2007 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2007.

**M.K. Holder**, M.M. Hadjimarkou, C.A., Cornil, G.F. Ball, M.M. McCarthy, J.A. Mong. Methamphetamine activation of the neural circuitry involved in female sexual behavior. Program No. P3.57, 2007 SBN Program Book. Pacific Grove, CA: Society for Behavioral Neuroendocrinology, 2007.

**M. K. Holder**, M. M. Hadjimarkou, S. L. Zup, R. Benham, M. M. McCarthy, J. A. Mong. Methamphetamine facilitates female sexual behavior. University of Maryland Aging and Women's Health Research Poster Day. University of Maryland, Baltimore, March 2007.

**M. K. Holder**, S. L. Zup, R. Benham, M. M. McCarthy, J. A. Mong. Methamphetamine facilitates female sexual behavior. Program No. 259.15. Neuroscience Meeting Planner. Atlanta, GA: Society for Neuroscience, 2006.

R. Benham, **M. K. Holder**, M. M. Hadjimarkou, J. A. Mong. Estradiol activation of sleep active neurons in the ventrolateral preoptic area (VLPO) is dependent on circadian timing. Program No. 661.1. 2006 Neuroscience Meeting Planner. Atlanta, GA: Society for Neuroscience, 2006.

**M. K. Holder**, S.L. Zup, R. Benham, M.M. McCarthy, J.A. Mong. Methamphetamine facilitates female sexual behavior. Program No. 37 (Mon). 2006 SBN Program Book. Pittsburgh, PA: Society for Behavioral Neuroendocrinology, 2006.

R. Benham, **M. K. Holder**, J. A. Mong, Estradiol activation of sleep active neurons in the ventrolateral preoptic area (VLPO) is dependent on circadian timing. Program No. 87 (Sun), 2006 SBN Program Book. Pittsburgh, PA: Society for Behavioral Neuroendocrinology, 2006.

P. M. Corballis, N. A. Parks, **M. K. Holder**, & A. G. Shapiro. (2005). Identification of luminance and contrast modulation signatures in the steady-state visual evoked potential [Abstract]. *Journal of Vision*, 5(8):488, 488a, <http://journalofvision.org/5/8/488/>, doi:10.1167/5.8.488.

### **TEACHING & MENTORSHIP**

- Invited Lecturer
  - Hormones and Behavior, Georgia State University, “Female Reproductive Behavior” (Fall, 2016)
  - Physiological Psychology, Georgia State University, “Sexual Behavior” (Spring, 2016)
  - Adolescent Development, University of Massachusetts, Amherst, Summerfuel Program “Puberty” (Summer, 2014)
  - Behavioral Neuroendocrinology Honors, University of Massachusetts, Amherst, “Sexual Behavior in the Female: Ovulatory Cycles” (Spring 2014)
  - Principles of Biology for Psychology Students, University of Massachusetts, Amherst, “Neuron Function III: Neurotransmitters” (Fall 2013)
- Mentor
  - Georgia State University Undergraduates (laboratory of Geert deVries)
    - Krishna Mehta, Brains & Behavior Undergrad Scholar
    - Kristen Jackson, Institute on Neuroscience, Summer Scholar
    - Mary Mendelsohn, Institute on Neuroscience, Summer Scholar
    - Amari Parham
    - Grace Signiski
  - University of Massachusetts, Amherst Undergraduates (laboratory of Jeff Blaustein)
    - Sam Fountain, Undergraduate Honors Thesis, winner Outstanding Thesis Award
    - Catherine Havemann, Undergraduate Honors Thesis
    - Anna Rock, Undergraduate Honors Thesis
    - Andrew Michalak, Undergraduate Honors Thesis
  - University of Maryland, Baltimore (laboratory of Jessica Mong)
    - Linley Redwood, University of Maryland Scholars Summer Research Program
    - Hannah Fink, Toxicology laboratory rotation
    - Richard Burke, Toxicology laboratory rotation

### **PROFESSIONAL SERVICE**

- Ad hoc reviewer for *Brain, Behavior, and Immunity*, *Hormones and Behavior*, *Journal of Neuroendocrinology*, *Behavioral Processes*
- Center for Neuroendocrine Studies, Hormones for Breakfast, organizer (2013-2014)
- Center for Neuroendocrine Studies Annual Symposium, organizer (2012-2014)
- Graduate Student Association, Program in Neuroscience representative (2007-2009)
- Neuroendocrine Journal Club, coordinator (2009)

### **COMMUNITY SERVICE**

- Informal Science Education Consultant for Atlanta Science Festival (March 2016)
- Science Educator for Atlanta Science Festival (March 2016)

- Participant in Classroom Visits Program of the Atlanta Chapter of the Society for Neuroscience (March 2016)

#### **PROFESSIONAL MEMBERSHIP**

- Society for Neuroscience
- Society for Behavioral Neuroendocrinology
- Organization for the Study of Sex Differences

#### **RESEARCH INTERESTS**

- Neuroendocrinology
- Neuroinflammation
- Behavioral Neuroscience
- Psychopharmacology
- Social & Sexual Behaviors