# CURRICULUM VITAE – September 23, 2016 NICOLE MARGUERITE CAMERON

Updated information is highlighted

# **CONTACT DATA**

Departments of Psychology and Biology Behavioral Neuroscience Program

**Binghamton University** 

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# **EDUCATION**

1989-94 **B.Sc. in Biology** 

Université du Québec à Montréal, Montréal, QC, CANADA

Course credits were also obtained from classes taken at San Francisco State University.

1996-2003 Ph.D. in Neuroscience

Boston University, Boston, MA, USA

Dissertation: Adrenal Modulation of Prolactin and Pseudopregnancy and Inputs of the

*Noradrenergic system.* Advisor: Mary S. Erskine

#### POSITIONS HELD

1989-1991 Research Assistant

Micropaleonthology

GEOTOP, University of Montreal Montreal, Quebec, Canada

1997-2002 Research Assistant

Biology

**Boston University** 

Boston, Massachusetts, USA

2003-2009 Postdoctoral Fellow in the laboratory of Michael Meany

Developmental Neuroendocrinology Laboratory and McGill Program for the

Study of Behaviour, Genes and Environment

Departments of Psychiatry and Neurology & Neurosurgery, McGill University Douglas Mental Health University Institute

Montreal, Quebec, Canada

2009-present Assistant Professor

Department of Psychology Binghamton University Binghamton, NY, USA

2013-present Research Fellow

Kinsey Institute for Research in Sex, Gender & Reproduction

Bloomington, IN, USA

#### AWARDS AND HONORS

1999 Travel Award

Gender Differences in Brain and Behavior

Official Satellite Symposium of the 8th Annual meeting of the International Behavioral

Neuroscience Society (IBNS), Nancy, France

2002 Travel Award

11<sup>th</sup> Annual meeting of the International Behavioral Neuroscience Society (IBNS)

Capri, Italy

2004 Young Investigator Award

8<sup>th</sup> Annual meeting of the Society for Behavioral Neuroendocrinology (SBN)

Lisbon, Portugal

#### **GRANT SUPPORT**

#### ACTIVE RESEARCH SUPPORT

R21AA023072 (PIs: Cameron; Nizhnikov) 2/5/16-1/31/18

Source: NIH/NIAAA

Title: Transgenerational effect of gestational alcohol exposure.

Role/Effort: Lead Investigator, 1.5 months effort

Total \$: 399,372/281,968 direct cost

The focus of this project is to investigate the epigenetic mechanisms responsible for the transgenerational effects of gestational alcohol exposure. Although the experimental design was a collaboration, all animal testing and tissue collection are performed in my laboratory.

#### COMPLETED RESEARCH SUPPORT

P50AA017823 (PI: Spear) Developmental Exposure Alcohol Research Center 8/1/2014-7/30/16

Source: NIH/NIAAA

Title: Pilot 1 - Maternal care influence in offspring ethanol sensitivity and consumption.

Role/Effort: Lead Investigator, 1.0 months effort

Total \$: 60,000 direct cost

This pilot project investigates the effect of maternal care on alcohol consumption and sensitivity to alcohol during adolescence and adulthood.

Research Collaboration Pilot Grant (PI: Mattson) 1/1/2014-12/30/15

Source: State University of New York, Research Foundation

Title: The Interplay of genetic, neurobiological, and developmental factors in the association

between social support in marriage and physical and mental health: toward an integrated

model.

Role/Effort: Co-Investigator, 1.5 months effort Total \$: 100.000/60.000 direct coast

This study investigates the interplay of genetic, early life environment and hormonal response during couple interaction and the association between social support in marriage and physical and mental health. My contribution includes experimental design, sample collection, data analysis, and future manuscript preparation.

Individual Development Awards (PI: Cameron) 3/2016

Source: United University Personnel, Binghamton University

Description: Support to cover attending the New York Academy of Science Conference

Total \$: 500

Individual Development Awards (PI: Cameron)

1/2015

Source: United University Personnel, Binghamton University

Description: Support to cover the cost for training in the laboratory of Luke Remage-Healey at

University of Massachusetts.

Total \$: 1,000

Binghamton University

10/2013-9/2014

Source: Psychology Department

Title: Maternal effects on female offspring mood

Role: Lead Investigator

Total \$: 6,000

Binghamton University

10/2013-9/2014

Source: Center for development and Behavioral Neuroscience

Title: Maternal effects on the GABA system

Role: Lead Investigator

Total \$: 6,000

Pilot Project Grant, Developmental Exposure Alcohol Research Center

9/1/2012-8/30/2014

Source: State University of New York

Title: Effects of early environment and adolescent ethanol exposure on negative mental health

outcomes.

Role/Effort: Lead Investigator/1.5 months

Total \$: 30,000

This pilot project investigates the effect of maternal care and adolescent alcohol exposure on anxiety/depression-like behavior in males.

Binghamton University/ Upstate Medical University Collaborative Neuroscience. 9/1/2012-8/30/2014

Source: State University of New York

Title: Epigenetic effects of maternal care on puberty onset in female rats.

Role/Effort: Co-Principal Investigator/ 1.5 months effort

Total \$: 18,500

This pilot grant investigated the mechanisms involved in the effect of maternal care on puberty onset.

**EVoS Small Grant Proposal** 

2/24/2011-9/1/2011

Source: EVoS Program

Title: The biology of female social bonds: A rodent model of central and peripheral oxytocin

release under varied social context.

Role: Lead Investigator

Total \$: 2,500

**EVoS Small Grant Proposal** 

2/24/2011-9/1/2011

Source: EVoS Program

Title: The biology of female social bonds: Validating a urinary assay of oxytocin in female

bonobos.

Role: Lead Investigator

Total \$: 2,500

Individual Development Awards

6/2010

Source: United University Personnel, Binghamton University

Description: Support to attend the XII European Congress on Perinatal Medicine, Granada, Spain.

Total \$: 1,000

#### **PEER REVIEWED PUBLICATIONS** (\*=graduate students, \*\*=undergraduate students)

Link to publication list on My NCBI:

https://www.ncbi.nlm.nih.gov/sites/myncbi/1DaGerLCzdckl/bibliography/40571852/public/?sort=date&direction=ascending

- 1. **Cameron, N** and Erskine, M.S. (2003). C-fos expression in the forebrain after mating in the female rat is altered by adrenalectomy. *Neuroendocrinology*, 77(5): 15-23
- 2. **Cameron, N**, Ha, G.K. and Erskine, M.S. (2003). Effect of adrenalectomy on mating-induced prolactin surges and pseudopregnancy in the female rat. *Neuroendocrinology*, 78(5)138-146
- 3. Erskine, M.S., Lehmann M.L., **Cameron, N.M**. and Polston, E (2004). Co-regulation of sexual behaviour and pregnancy induction: an exploratory synthesis. *Behav Brain Res*, 153(2):295-315
- 4. **Cameron, N.M.**, Ha, G.K. and Erskine, M.S. (2004). Fos expression after mating in noradrenergic cells of the A1 and A2 areas of the medulla is altered by adrenalectomy. *J Neuroendocrinol*, 16(9):750-757.
- 5. **Cameron, N.M.**, Carey, P.S. and Erskine, M.S. (2004). Medullary noradrenergic neurons release norepinephrine in the medial amygdala in females in response to mating stimulation sufficient for pseudopregnancy. *Brain Res*, 1022 (1-2):137-147.
- 6. **Cameron, N.M.**, Champagne, F.A., Parent C. Fish, E.W. Ozaki-Kuroda, K. and Meaney, M.J. (2005) The programming of individual differences in defensive responses and reproductive strategies in the rat through variations in maternal care. *Neurosci Biobehav Rev*, 29(4-5)843-865
- 7. **Cameron, N.M.**, Fish, E.W. and Meaney, M.J. (2008) Maternal influences on the sexual behavior and reproductive success of the female rat. *Horm Behav*. 54(1):178-184
- 8. **Cameron, N.M.**, Del Corpo, A., Diorio, J., McAllister, K., Sharma S. and Meaney, M.J. (2008) Maternal programming of sexual behavior and hypothalamic-pituitary-gonadal function in the female rat. *PLoS One*. 3(5): e2210.
- 9. **Cameron, N,** Shahrokh, D., Del Corpo, A., Dhir, S., Szyf, M., Champagne, F.A. and Meaney, M.J. (2008) Epigenetic programming of phenotypic variations in reproductive strategies in the rat through maternal care. *J. Neuroendocrinol*. 20(6):795-801.

#### PUBLICATIONS SINCE ARRIVING AT BINGHAMTON UNIVERSITY

- 1. **Cameron, N.M.**, \*E. Soehngen and Meaney, M.J. (2011) Variations in maternal care influences ventromedial hypothalamus activation in the rat. *J. Neuroendocrinol*. 23(5):393-400. Study conception and design: N.M.C., M.M.J.; Acquisition of data: N.M.C. & E.S.; Analyse and interpretation of data: N.M.C.; writing manuscript: N.M.C.
- 2. **Cameron, N.M.** (2011) Maternal programming of reproductive function and behavior in the female rat. *Front Evol Neurosci*. 3:10. Review written at Binghamton requested by Special Issue Guest Associate Editor, Melanie Shoup-Knox
- **3.** \*Borrow, A.P. and **Cameron N.M.** (2012). The role of oxytocin in mating and pregnancy. *Horm Behav*. 61(3):266-276. Review written at Binghamton and requested by L. Young & L.M. Flanagan-Cato.
- 4. Parent, C., Del Corpo, A., Cameron, N.M. and Meaney, M.J. (2012). Maternal care associates with play dominance rank among adult female rats. *Dev Psychobiol*. 55(7):745-756. Study

- conception and design: N.M.C., M.M.J., C.P.; Acquisition of data: A. D.C., N.M.C., P.C..; Analysis and interpretation of data: C.P., N.M.C.; writing manuscript: C.P., N.M.C., M.J.M.
- 5. \*Prior, K.M., Meaney, M.J., and **Cameron, N.M**. (2012). The effect of maternal care on female rat reproductive behavior in a group mating environment. *Dev Psychobiol* 55(8):838-848. Study conception and design: N.M.C.; Acquisition of data: K.M.P., N.M.C.; Analysis and interpretation of data: K.M.P., N.M.C; Writing manuscript: K.M.P, N.M.C.; Critic of the manuscript: M.J.M. This was K.M.P Master's Thesis.
- McCormick, C.M., Green, M.R., Cameron, N.M., Nixon, F., \*\*Levy, M.J. and \*\*Clark, R.A. (2013). Deficits in male sexual behavior in adulthood after social instability stress in adolescence in rats. *Horm Behav*, 63(1):5-12. Study conception and design: C.M.M., N.M.C.; Acquisition of data: M.R.G., F.N., M.J.L., R.A.C.; Analysis and interpretation of data: C.M.M., N.M.C, R.A.C; Writing manuscript: C.M.M., N.M.C.
- 7. \*Borrow, A.P., \*\*Levy, M.J., \*Soehngen E.P. and **Cameron, N.M.** (2013). Maternal care and perinatal testosterone exposure modulate female puberty onset. *J Neuroendocrinol*. 25(6): 528-536. Study conception and design: N.M.C., A.P.B..; Acquisition of data: A.P.B., M.J.L., E.P.S..; Analysis and interpretation of data: N.M.C., A.P.B.; Writing manuscript: A.P.B., E.P.S., C.P., N.M.C. This is A.P.B. Master's Thesis.
- 8. \*Borrow, A.P., and **Cameron, N.M.** (2014) Estrogenic mediation of serotoninergic and neurotrophic systems: implications for female mood disorders. *Prog Neuropsychopharmacol Biol Psychiatry*, 54(3): 13-25. Review written at Binghamton.
- 9. \*Popoola. D.O., \*Borrow. A.P., \*\*Sanders, J.E. Nizhnikov, M.E. and **Cameron, N.M.** (2015) *Physiol Behav*. Can low-level ethanol exposure during pregnancy influence maternal care? An investigation using two strains of rat across two generations. 148:111-21. Study conception and design: N.M.C., M.E.N.; Acquisition of data: D.O.P., A.P.B., J.E.S.; Analysis and interpretation of data: N.M.C., J.E.S; Writing manuscript: D.O.P., A.P.B., N.M.C.
- 10. Nizhnikov, M.E., \*Popoola. D.O. and **Cameron, N.M.** (2016) Trans-generational transmission of the effect of gestational ethanol exposure on ethanol use-related behavior. *ACER*, 40(3), 497-506. Study conception and design: N.M.C., M.E.N.; Acquisition of data: D.O.P., M.E.N.; Analysis and interpretation of data: M.E.N, D.O.P., N.M.C; Writing manuscript: D.O.P., A.P.B., N.M.C. This is part of D.O.P. Master's Thesis. (see Media Coverage below)
- 11. \*Borrow, A.P., and **Cameron, N.M.** (accepted pending review) Maternal care and affective behavior in female offspring: Implication of the neurosteroid/GABAergic system. Study conception and design: N.M.C., A.P.B..; Acquisition of data: A.P.B.; Analysis and interpretation of data: N.M.C., A.P.B.; Writing manuscript: A.P.B., N.M.C. This is part of A.P.B. Ph.D. Dissertation.
- 12. \*Borrow, A.P, Fivecoat, H., and Cameron, N.M. (submitted, in revision) Parent-child communication or family background: their association with risky sexual behavior and alcohol use in college students. Study conception and design: N.M.C.; Acquisition of data: A.P.B., N.M.C.; Analysis and interpretation of data: A.P.B., H.F., N.M.C.; Writing manuscript: A.P.B., H.F., N.M.C.

# **BOOK CHAPTERS**

1. **Cameron. N.M.** and Garcia J.R. (2013) Maternal effect and offspring development. In Fisher, M., Garcia, J.R., Chang, R.S., Strout, S.L.(Eds), *Evolution's Empress: Darwinian Perspectives on the Nature of Women.* (Oxford University Press, New York). pp. 133-154.

# **IN PREPARATION**

- 1. \*Popoola. D.O., Nizhnikov, M.E. and **Cameron, N.M.** (to be submitted before 9/30/2016) Strain-specific programming of transgenerational effects of gestational ethanol exposure. Requested by G.E. Homanics and R. Miranda for a special issue in "Epigenetic Effects of Alcohol" to be published in Alcohol.
- 2. **Cameron N.M.**, Thompson M., Cumming, M., Hodges, T.E. \*Langett, M. McCormick, C.M., (in preparation) The sexual preference of female rats is influenced by males' adolescent social stress history and social status.
- \*Borrow, A.P. and Cameron, N.M. (in preparation) Maternal care influence on mood through neurosteroid modulation.
- 4. \*Langett, M. and Cameron, N.M. (in preparation) Effect of mating in oxytocin peripheral and central levels in female rats.
- 5. \*Popoola, D.O. and **Cameron, N.M.** (in preparation) Maternal care programing of sex-difference in alcohol preference.
- 6. Kappeler, L., Parent, C.I., Portella, A.K., Silveira, P.P., Cottrell E.C., **Cameron, N.M.,** Diorio, J., Seckl, J.R., Meaney, M.J. (in preparation) The prenatal maternal phenotype and variations in postnatal maternal care mediate the risk for obesity and metabolic syndrome in the adult rat.
- 7. \*Soenhgen, E., \*Borrow, A.P., Werner, D.F. and **Cameron, N.M.** (in preparation). Maternal care programming of onset of puberty: implication of kisspeptin.

#### INVITED LECTURES AND SYMPOSIA

Workshop on Attachment: Causes and Consequences Centre for Studies in Behavioral Neurobiology Concordia University, Montréal, Québec, Canada. March 31<sup>st</sup> 2006

"Like mother, like daughter; reproductive strategies in the rat."

Institut Fernand Séguin, Montréal, Québec, Canada. May 29<sup>th</sup> 2006

"Effets des soins maternels sur la réponse au stress et la reproduction chez le rat." (Effects of maternal care on stress response and reproduction in the rat).

International Behavioural Neuroendocrinology Meeting Rio Janeiro, Brazil

June 2007

"Maternal programming of sexual behavior and hypothalamic-pituitary-gonadal function in the female rat."

#### INVITED LECTURES SINCE ARRIVING AT BINGHAMTON UNIVERSITY

Binghamton University (SUNY), Neuroscience Club October 2009

"Like Mother, Like Daughter; Maternal Influence on Reproductive Function"

Binghamton University (SUNY), Biology Department

February 2010

"Maternal programming of reproductive function and behavior in the female rat."

XXII European Congress of Perinatal Medicine

Granada, Spain

May 2010

"Maternal Programming of the Reproductive System of the Offspring"

Society for Behavioral Neuroendocrinology

Toronto, Canada

July 2010

"Effects of maternal care on paced mating behavior and reproductive success of the female rat."

Science Cabaret

Binghamton, NY

August 2010

"Some Things You Never Knew About How Parents Influence the Sexual Behavior of Their Children"

Neuroscience Club

Binghamton, NY

April 2012

"Mother's Touch: A source of individual variation in daughter's reproduction"

EvoS

Binghamton, NY

April 2012

"Mother's Touch: A source of individual variation in daughter's reproduction"

Common Themes in Reproductive Diversity (CTRD) and Center for the Integrative Study of Animal Behavior (CISAB),

Indiana University, Bloomington.

March 2012

"Mother's Touch: A source of individual variation in daughter's reproduction"

The Kinsey Institute for Research in Sex, Gender, and Reproduction,

Indiana University, Bloomington.

March 2012

"Oxytocin: Is it really the "Love Hormone"?"

Nanosymposium in Alcohol and Adolescence

Society for Neuroscience Meeting, San Diego

November 2013

"Trans-generational Effect of Prenatal Ethanol Exposure in Rats - Preweanling Alcohol Consumption and Adolescent Sensitivity to Ethanol's Sedative-Hypnotic Effect"

University of Massachusetts

Amherts, Massachusetts

January 2015

"Maternal care influence on mood through gonadal modulation"

# **ORAL PRESENTATIONS** (\*=graduate students, \*\*=undergraduate students)

- 1. **Cameron, N.** and Erskine, M.S. (1999). Norepinephrine infusion into the medial amygdala of the proestrous rat induces acyclicity. International Behavioral Neuroscience Society. Nancy, France
- 2. **Cameron, N** and Erskine, M.S. (2002). Fos expression in the forebrain after mating is altered by adrenalectomy. International Behavioral Neuroscience Society. Capri, Italy.

- Cameron N.M., Fish E.W., Meaney M.J. (2004). Variation in maternal care influences reproductive strategy. Douglas Hospital Research Center Annual Research Day. Verdun, QC, Canada
- Cameron N.M., Parent C.I., Dhir S.K., Sharma S., Meaney M.J. (2006). Effects of variations in maternal care on corticosterone, luteinizing hormone and reproduction in female rats. Society for Neuroscience 36<sup>th</sup> Annual Meeting. Atlanta, GA, USA

#### ORAL PRESENTATIONS SINCE ARRIVING AT BINGHAMTON UNIVERSITY

- 1. **Cameron, N.M.** (2011). Maternal Care Effect on Female Reproductive Behavior. Northeastern Evolutionary Psychology Society (NEEPS). Binghamton, NY, USA
- 2. \*\*Levy M.J., \*Borrow, A.P., \*Soehngen E., \*\*Lugo M., Cameron N.M. (2011). Mother care Effects on Daughter reproduction. North Eastern Evolutionary Psychology Society (NEEPS). Binghamton, NY, USA
- 3. Moscovice, L.R., \*Borrow, A.P., Garcia, J., Cameron N.M. (2011). The Biology of Female Social Bonds: Developing a Rodent Model of Central and Peripheral Oxytocin Release under Varied Social Contexts. North Eastern Evolutionary Psychology Society (NEEPS). Binghamton, NY, USA
- 4. \*\*Levy, M.J., Garcia, J.R., **Cameron N.M.** (2012) Sex difference in distraction during mating: was Kinsey right? North Eastern Evolutionary Psychology Society (NEEPS). Plymouth, NH, USA
- Cameron N.M. (2012) Maternal licking and grooming influence the Neuroendocrine control of affiliative and sexual behaviors in female rat offspring. Society for Social neuroscience (S4SN). New Orleans, LA, USA
- McCormick, C.M., Green, M.R., Cameron, N.M. \*\*Levy, M.J., \*\*Clark, R.A. (2013) Deficits in male sexual behavior in adulthood after social instability stress in adolescence in rats. Society for Research in Child Development (SRCD) Biennial Meeting. Seattle, Washington, USA.
- 7. \*Popoola. D.O., Nizhnikov, M.E. \*\*Sanders, J.E. and Cameron, N.M. (2013) Strain effect and gestational ethanol's strain-dependent effect on early-life maternal care in rats. International Society for Developmental Psychobiology (ISDP). San Diego, CA, USA
- 8. \*Borrow, A.P. and **Cameron, N.M.** (2014) A natural model of gonadal steroid effects on emotional lability and risky behavior in females. 8<sup>th</sup> International Conference on Hormones, Brain and Behavior (ICHBB) Liège, Belgium
- 9. \*Borrow, A.P. and Cameron N.M. (2014). Maternal care programs estrous cycle-mediated affective behaviors in the female rat. International Society for Developmental Psychobiology (ISDP). Washington, DC, USA
- \*Popoola, D., Nizhnikov, M., Spear, N. and Cameron N.M. (2014) Molecular and transgenerational behavioral effects of prenatal ethanol exposure. International Society for Developmental Psychobiology (ISDP). Washington, DC, USA
- 11. Borrow, A.P. and **Cameron, N.M**. (2015). Low maternal care programs dysregulation of the neurosteroid/GABAergic system in female offspring: An animal model for premenstrual dysphoric disorder. Society for Neuroscience, Chicago IL, USA.
- 12. Borrow, A.P. and **Cameron, N.M.** (2015). Low maternal care programs dysregulation of the neurosteroid/GABAergic system in female offspring: Implications for affective disorders. International Neuroendocrine Workshop, Mendoza, Argentina.
- 13. Borrow, A.P. and **Cameron, N.M.** (2015). Parental Influence on Offspring Behavior: Insight from Research in Humans and in the Rodent. Universidad de Chile, Santiago, Chile.
- 14. Borrow, A.P. and **Cameron, N.M.** (2015) Parenting Programs Emotionality in the Female Long Evans Rat. Evo-Group, Cornell University, Ithaca, NY, USA.

15. \*Popoola. D.O., **Cameron, N.M.** (2015). Early-life Maternal Care Modulates Alcohol Dependence. International Society for Developmental Psychobiology, San Sebastian, Spain.

# <u>POSTER PRESENTATIONS</u> (\*=graduate students, \*\*=undergraduate students, += Bridges to Baccalaureate students)

- 1. **Cameron, N**. and Erskine, M.S. (1999). Norepinephrine infusion into the medial amygdala of the proestrous rat mimics mating-induced pseudopregnancy. Society for Neuroscience. Miami Beach, FL, USA
- 2. **Cameron, N.** and Erskine, M.S. (2000). The role of the adrenal gland in the release of prolactin after mating. Symposium on Developmental Neuroendocrinology, Amherst, MA, USA.
- 3. Normandin, J. **Cameron, N**. and Erskine, M.S. (2001). Effects of propanolol and diethyldithiocarbamate on female sexual behavior and induction of pregnancy/pseudopregnancy. Symposium on Developmental Neuroendocrinology, Amherst, MA, USA.
- 4. **Cameron, N** and M.S. Erskine. (2001). Adrenalectomy enhances the acute prolactin surge induced by mating in ovariectomized estrogen treated rats, and causes early onset of the nocturnal surge. Society for Behavioral Neuroendocrinology, Scottsdale, AZ, USA.
- 5. **Cameron, N.**, Ha G. and Erskine, M.S. (2001). Colocalization of Fos immunoreactive cells after mating in noradrenergic neurons projecting to the medial amygdala is altered by adrenalectomy. Society for Neuroscience. San Diego, CA, USA
- Cameron, N, Carey, P.S. and Erskine, M.S. (2002). Forebrain and brainstem activation after noradrenergic lesions caused by anti-dopamine-β-hydroxylase-saporine in the medial amygdala. The 5<sup>th</sup> International Congress of Neuroendocrinology. Bristol, UK.
- Cameron, N. and Erskine, M.S. (2002). Adrenalectomy increases mating-induced Fos expression in forebrain areas involved in stress and reproduction. 4<sup>th</sup> World Congress on Stress. Edinburgh, Scotland.
- 8. **Cameron, N**. and Erskine, M.S. (2002). Norepinephrine release in the medial amygdala after mating. Society for Neuroscience. Oreland, USA
- 9. **Cameron N.M.**, Sharma S. and Meaney, M.J. (2004). Effect of maternal care and stage of estrus on neuroendocrine response to stress. International Behavioral Neuroscience Society. Key West, USA
- 10. **Cameron N.M.**, Fish E.W. Sharma, S. and Meaney M.J. (2004). Natural variation in maternal care influences the reproduction of the female rat. 35<sup>th</sup> ISPNE Conference. Glasgow, Scotland, UK
- 11. **Cameron N.M.**, Fish E.W. and Meaney M.J. (2004). Variation in maternal care influence mating preference of the female rats. Society for Neuroscience. 34<sup>th</sup> Annual Meeting. San Diego, CA, USA
- 12. Meaney M.J., **Cameron N.M.**, Fish E.W. and Diorio J.C. (2004). Effect of variation in maternal care on reproductive strategy. Society for Neuroscience 34<sup>th</sup> Annual Meeting. San Diego, CA, USA
- 13. Champagne D.L., Gaudreau H., **Cameron N**., Diorio J., Oitzl M., de Kloet R.E., and Meaney M.J. (2004) Early-life adversity and differential wiring of the limbic hypothalamo-pituitary-adrenal axis circuitry. Society for Neuroscience 34<sup>th</sup> Annual Meeting. San Diego, CA, USA
- 14. **Cameron N.M.**, Robitaille M., Sharma S., and Meaney M.J. (2005) Effect of maternal care and estrus cycle on c-fos expression in response to acute stress. 36<sup>th</sup> ISPNE Conference. Montreal, OC, Canada
- 15. **Cameron N.M.**, and Meaney M.J. (2005) Variation in maternal care and neonatal anogenital distance in rats. Society for Neuroscience, 35<sup>th</sup> Annual Meeting. Washington, DC, USA
- 16. Shahrokh D., **Cameron N.M.**, and Meaney M.J. (2005) Oxytocin projections from the medial preoptic area to the ventral tegmental area in high and low licking/grooming female rats. Society for Neuroscience 35<sup>th</sup> Annual Meeting. Washington, DC, USA
- 17. **Cameron N.M.**, Dhir SK, and Meaney M.J. (2006) Effect of maternal care and ovariectomy on sexual behavior and c-Fos activity in the female rat. 6<sup>th</sup> International Congress in Neuroendocrinology (ICN). Pittsburgh, PA, USA

- 18. **Cameron N.M.**, Dhir SK, and Meaney M.J. (2006) Maternal Influence on Female Offspring Sexual Behavior: A Cross-Fostering Study. Society for Behavioral Neuroendocrinology. Pittsburgh, PA, USA
- 19. **Cameron N.M.**, Dhir SK, and Meaney M.J. (2006) Effect of variation in maternal care and gonadal hormones on sexual behaviors. The Endocrine Society's 88<sup>th</sup> Meeting. Boston, MA, USA.
- Silveira PP, Portella AK, Dhir S, Cameron N, McAllister K, Hellstrom I, and Meaney MJ.
  (2006). Maternal care influences growth and metabolism at different ages. Developmental Origins of Health and Disease (DOHAD). Utrecht, Netherlands
- Parent C.I., Del Corpo A., Cameron N.M., and Meaney M.J. (2006) Dominance status in the female rat is influenced by natural variations in maternal care. International Society for Developmental Psychobiology (ISDP) Society for Neuroscience, 36<sup>th</sup> Annual Meeting. Atlanta, GA. USA
- 22. **Cameron NM**, Silveira PP, Del Corpo A, Sharma, S. and Meaney MJ. (2007) Effect of natural variation in maternal care on estrogen, progesterone and luteinizing hormone in the proestrus female rat. The Endocrine Society's 89<sup>th</sup> Meeting. Toronto, ON, Canada
- 23. **Cameron NM**, Del Corpo A, and Meaney MJ. (2007) Variation in maternal care and ovariectomy influence sexual behaviors and brain C-fos activity in the female rat. Society for Behavioral Neuroendocrinology. Carmel, CA, USA
- 24. **Cameron NM**, Caldji C, Diorio J, and Meaney MJ. (2008) Effect of maternal care on the female offspring phosphorylated estrogen receptor activation in the rat. Canadian Association for Neuroscience. Montreal, QC, Canada
- 25. **Cameron NM**, Del Corpo A, Portella, AK, Sharma, S, and Meaney MJ. (2008) Maternal care, endocrine system development and mounting behavior in the female rat. Society for Behavioral Neuroendocrinology. Gronigen, Netherlands.
- 26. **Cameron NM**, Sharma S, and Meaney, MJ. (2009) Maternal Care and the Control of LH Pulsatility in the Female Rat Offspring. Endocrine Society. Washington DC, USA
- 27. **Cameron NM**, and Meaney, MJ (2009) Natural Variations in Maternal Care Are Associated with Variations in VMH Activity and receptor Expression. Society for Behavioral Neuroendocrinology. East Lansing, MI, USA

#### POSTER PRESENTATIONS SINCE ARRIVING AT BINGHAMTON UNIVERSITY

- 1. \*\*Levy, M.\*\* Lugo, M.\* Borrow, A.P. and **Cameron, N.M.** (2010). Maternal Effects on the Development of the Reproductive System. Psi Chi Research Fair, Binghamton University. Binghamton, NY, USA
- +Iroakazi, E., \*Borrow, A.P. and Cameron, N.M. (2010). Testosterone and Maternal Care Affect Male-Typical Sexual Behavior. Bridges to Baccalaureate Presentation Day, Binghamton University. Binghamton, NY, USA
- 3. \*Prior K., and **Cameron N.M.** (2010) Effects of Maternal care on Group Mating Behavior in Rats. Society for Behavioral Neuroendocrinology. Toronto, ON, Canada
- 4. \*Borrow A.P., \*\*Levy M., \*\*Lugo M.L., and **Cameron N.M**. (2010) Maternal Effects on the Development of the Reproductive System. Society for Behavioral Neuroendocrinology. Toronto, ON, Canada
- \*Soehngen, E., and Cameron, N.M., (2011). Effect of maternal care on adolescent pregnancy outcome and maternal care. Sexual Behavior. Society for Behavioral Neuroendocrinology. Oueretaro, Mexico
- \*Borrow, A. P., Moscovice, L.R., \*Soehngen, E., and Cameron, N.M. (2011) Maternal Effects on Peripheral Oxytocin Levels in the Rat. Society for Behavioral Neuroendocrinology. Queretaro, Mexico
- 7. \*\*Levy, M.J., Garcia, J.R., \*\*Shanker, L., \*Soehngen, E., and **Cameron, N.M.** (2011) Environmental Condition on Mating Motivation in Rat. Society for Behavioral Neuroendocrinology. Queretaro, Mexico
- 8. Green, M., \*Borrow, A.P., **Cameron, N.M.,** and McCormick, C.M. (2011) Social Instability Stress in Adolescence and Adult Male Sexual Behavior. Society for Behavioral Neuroendocrinology. Queretaro, Mexico

- 9. \*Borrow, A.P., and **Cameron N.M.** (2012) Is oxytocin the "Love Hormone"? The answer coming from both human and animal research. North Eastern Evolutionary Psychology Society (NEEPS). Plymouth, NH, USA
- \*Borrow, A.P., and Cameron N.M. (2012) Prenatal testosterone exposure effects on female sexual behavior in High and Low licking/grooming offspring. Society for Behavioral Neuroendocrinology (SBN). Madison, WI, USA
- 11. \*Soehngen, E.P. Werner, D.F. Tamashiro, K.L. and **Cameron, N.M.** (2012) Maternal Care effects on onset of puberty. Society for Behavioral Neuroendocrinology (SBN). Madison, WI, USA
- 12. \*Borrow, A.P., and **Cameron N.M.** (2012) Natural variations in maternal care modulate effects of prenatal testosterone exposure on pubertal development and sexual behavior. Organisation for the Study of Sex Differences (OSSD). Baltimore, MD, USA
- 13. \*Soehngen, E.P. Werner, D.F. Tamashiro, K.L. and **Cameron, N.M.** (2012) Effects of maternal care on the development of estrogen-kisspeptin signaling. International Society for Developmental Psychobiology (ISDP). New Orleans, LA, USA
- \*Borrow, A.P., and Cameron N.M. (2012) Natural variations in maternal care modulate effects of prenatal testosterone exposure on pubertal development and sexual behavior. Society for Neuroscience (SFN) New Orleans, LA, USA
- 15. \*Soehngen, E.P. Werner, D.F. Tamashiro, K.L. and Cameron, N.M. (2012) Maternal Care effects on onset of puberty. Society for Neuroscience (SFN) New Orleans, LA, USA
- 16. +Pinnock, M. L., \*Popoola, D. O., and **Cameron, N.M.** (2013) Maternal care, GABAA receptor and ethanol in the rat brain. Bridges to Baccalaureate Program, Binghamton University, Binghamton, NY, USA.
- 17. +Gallegos, J. C., \*Borrow, A.P. and **Cameron, N.M.** (2013). Maternal care, brain derived neurotrophic factor (BDNF) and estrogen receptor alpha in the estrous cycle. Bridges to Baccalaureate Presentation Day, Binghamton University. Binghamton, NY, USA.
- 18. Borrow, A.P., \*Rametta, S. and **Cameron N.M.** (2013) Maternal care and estrous cycle effects on locomotor activity in the rat. Society for Behavioral Neuroendocrinology (SBN), Atlanta, GA, USA
- 19. \*Borrow, A.P., \*\*Stolow, M. and Cameron N.M. (2013) The effect of maternal care on depressive-like behaviors. Society for Neuroscience (SFN) San Diego, CA, USA
- 20. \*Popoola. D.O., Nizhnikov, M.E. Spear. N. and **Cameron, N.M.** (2014) Trans-generational Effect of Prenatal Ethanol Exposure in Rats on Ethanol Consumption and Sensitivity. Gordon Conference on Alcohol & Nervous System. Galveston, TX, USA
- 21. \*Borrow, A.P. and **Cameron N.M.** (2014) A novel model of premenstrual affecting disorders in the cycling rat. Organisation for the study of sex differences (OSSD). Minneapolis, MN, USA
- 22. \*\*Champagne K., \*\*Paul, D. \*Popoola, D.O. and **Cameron, N.M**. (2014) Prenatal alcohol exposure region-specifically alters expression of GABAA receptor α1, α4, and β2 subunits in the brain: A transgenerational effect. Undergraduate Research Conference. Binghamton University. Binghamton, NY, USA
- 23. \*\*Levin, D.G. \*Popoola. D.O. and **Cameron, N.M**. (2014) Early-life maternal care influences sensitivity to ethanol's sedation-hypnosis in an age and dose dependent manner. Undergraduate Research Conference. Binghamton University. Binghamton, NY, USA
- 24. \*\*Sidhu, N., \*\*Bien, E., +Sanders, J., \*Borrow, A.P. and **Cameron, N.M.** (2014) An interaction between allopregnanolone and natural variation in maternal care on elevated plus maze behavior. Psi Chi Research Fair, Binghamton University. Binghamton, NY, USA
- +Gordon, G., \*Langett, M., and Cameron, N.M. (2014) The use of Immunofluorescence double labeling to show peripheral projection of a centrally produced hormone. Bridges to Baccalaureate Program, Binghamton University. Binghamton, NY, USA.
- 26. +Simmons, N. A., \*\*Raparia, C., \*Popoola, D. O., and **Cameron N. M.** (2014). Moderate prenatal ethanol exposure alters synaptosomal GABAA receptor—subunit expression in the cerebral cortex. Bridges to Baccalaureate Program, Binghamton University, Binghamton, NY, USA.
- 27. \*Borrow, A.P. and **Cameron N.M.** (2014) Interacting effects of maternal care and allopregnanolone on anxious behavior in the female rat. Society for Neuroscience (SFN) Washington, DC, USA

- 28. \*Popoola, D., Nizhnikov, M., Spear, N. and **Cameron N.M.** (2014) Possible contributions of GABAA and kappa opioid receptor in transgenerational effects of prenatal exposure. Society for Neuroscience (SFN) Washington, DC, USA
- 29. \*Popoola, D., Nizhnikov, M., Spear, N. and **Cameron N.M.** (2014) Possible contributions of GABAA and kappa opioid receptor in transgenerational effects of prenatal exposure. 2nd Workshop on France-USA Collaborative Initiatives in Addiction. Washington, DC, USA
- 30. \*Borrow, A.P. and **Cameron, N.M**. (2014). A novel model of premenstrual affective disorders in the cycling rat. Organization for the Study of Sex Differences, Minneapolis, Minnesota, USA.
- 31. +Sanders, J.E., \*Langett, M.L., **Cameron, N.M.** (2015). Central and peripheral oxytocin release in the ovariectomized female rodent during mating. Psi Chi Undergraduate Research Fair, Binghamton, NY. USA.
- 32. +Elkhidir, M.A., \*Langett, M.L., **Cameron, N.M.** (2015). Peripheral oxytocin release and sexual behavior analysis in ovariectomized experience vs. inexperienced female rat. Bridges to the Baccalaureate Program, Binghamton, NY. USA.
- 33. +Elkhidir, M.A., \*Langett, M.L., Cameron, N.M. (2015). Peripheral and central oxytocin release and sexual behavior analysis in ovariectomized experience vs. inexperienced female rats. McNair Scholars Research Conference, Niagara Falls, NY. USA.
- 34. \*Langett, M.L., **Cameron, N.M**. (2015). Brain and plasma oxytocin levels under basal and mating conditions in the female rat. North American Society for Comparative Endocrinology, Ottawa, ON. CA.
- 35. \*Langett, M.L., **Cameron, N.M.** (2015). Hypothalamic and peripheral oxytocin in the female rat and the effect of mating experience. Society for Neuroscience, Chicago, IL. USA.
- 36. \*Popoola, D.O., Cameron, N.M. (2015). Maternal Care Sex-Dependently Modulates Ethanol-Use Related Behaviors. Society for Neuroscience, Chicago, IL. USA.
- 37. Popoola, D.O. and **Cameron, N.M.** (2016). Natural variations in maternal care sex- and age-dependently modulates ethanol-use related behaviors. Poster presentation for "The Addicted Brain and new Frontiers: Sixth Annual Aspen Brain Forum", NYAS, New York, NY.
- 38. \*\*Van Loan, E, +Natera, A., \*Popoola, D.O., **Cameron, N.M.** (2016). Maternal care programming of ethanol consumption in female rats is mediated by gonadal hormones. Psi Chi Undergraduate Research Fair, Binghamton, NY. USA.
- 39. +Cordoba, G. +Wang, V.\*Popoola, D.O., **Cameron, N.M.** (2016). Maternal Care Programs Sensitivity to Ethanol-Induced Sedation-Hypnosis, GABA<sub>A</sub> and Glucocorticoid Receptor Expression. Psi Chi Undergraduate Research Fair, Binghamton, NY. USA.
- 40. \*Popoola, D.O., Cameron, N.M. (2016). Maternal Care Sex-Dependently Modulates Ethanol-Use Related Behaviors. Research Society on Alcoholism Annual Conference, New Orleans, LA. USA.
- 41. +Green C., \*\*Bernhardt R., +Gordon G., \*Popoola D.O., and **Cameron N. M**. (2016): Saccharine and Sucrose Consumption in Male and Female Adolescent Rats. University of Buffalo National McNair Conference, Buffalo, New York, USA.
- 42. \*\*Van Loan E., +Natera A., \*Popoola D.O., and **Cameron N. M.** (2016): Maternal Care Programming of Ethanol Consumption in Female Rats is Mediates by Gonadal Hormones. Binghamton University Research Day, Binghamton, New York, USA.
- 43. \*\*Van Loan E., +Natera A., \*Popoola D.O., and **Cameron N. M.** (2016): Maternal Care Programming of Ethanol Consumption in Female Rats is Mediates by Gonadal Hormones. Society for Behavioral Neuroendocrinology (SBN). Montreal, QC, Canada.
- 44. +Green C., \*Popoola D.O., and **Cameron N. M.** (2016) Sex Differences in sucrose and saccharin consumption in adolescent rats. Annual Biomedical Research Conference for Minority (ABRCMS). Tampa, FL.
- 45. +Gordon, G., \*Popoola D.O., Nizhnikov, M. and **Cameron N. M.** (2016) Ethanol use behavior following late gestational low dose ethanol exposure. Annual Biomedical Research Conference for Minority (ABRCMS). Tampa, FL.

# **DEPARTMENTAL SERVICE**

- Science V, Group 3 committee, spring 2009
- Speaker at Neuroscience Club's Research Talk Oct. 28, 2009
- Key Note Speaker, Psi Chi new member induction ceremony, May 2010

- Search Committee, Tenure Track Faculty in Behavioral Neuroscience, 2009-2010
- Search Committee, Tenure Track Faculty in Cognitive Neuroscience, 2010-2011
- Award Committee, Psychology Department, 2010-2014
- Colloquium Committee, Psychology Department, 2011-2012
- Chair of Colloquium Committee, Psychology Department, 2012-2016
- Multiculturalism and Diversity Dean's Speaker Series Interim Director, Spring 2014
- Hosted Colloquia Speakers (2010-2014)

#### UNIVERSITY SERVICE

- University Undergraduate Curriculum Committee 2016-present
- Faculty Senate, fall 2012 and fall 2014-2016
- Member of the EvoS Executive Committee, 2012-present
- Member of the Education Policy and Priorities Committee, 2013- present
- Participated to the Binghamton/Upstate Neuroscience Collaboration Retreat, Oct. 26, 2011
- Speaker at Binghamton University Open House April 5, 2014
- Hosted Bridges to Baccalaureate Students (2010, 2013,2014, 2015,2016)
- Hosted Student from Hartwick College during Binghamton Link 2011

# **PROFESSIONAL ACTIVITIES**

#### Ad hoc Review Panel

- Natural Sciences and Engineering Research Canada (NSERC) granting Agency
- Economic and Social Research Council (ESRC) British granting Agency
- Mary S. Erskine Award Review Panel, 2009-2010

# Editorial Board Member

• Scientific Reports (2016-present). Impact Factor 2015: 5.228

#### Ad hoc Reviewer for the Following Journals:

- 1. Alcohol
- 2. Behavioral and Brain Sciences
- 3. Behavioural Processes
- 4. Brain Science
- 5. Drug and Alcohol Dependence
- 6. Endocrinology
- 7. Frontiers in Neuroendocrinology
- 8. Hormones
- 9. Hormones and Behavior
- 10. Hormone and Metabolic Research
- 11. Journal of Affective Disorders
- 12. Journal of Clinical Psychopharmacology
- 13. Journal of Development of Origin of Health and Disease
- 14. Journal of Neuroendocrinology
- 15. Journal of Neuroscience Research
- 16. Journal of Women's Health Care
- 17. Pharmacology, Biochemistry and Behavior
- 18. Philosophical transaction B
- 19. Physiological Report
- 20. Physiology & Behavior
- 21. PLoS One
- 22. Psychoneuroendocrinology

- 23. Social Psychiatry and Psychiatric Epidemiology
- 24. Zoology

# Ad hoc Book Reviewer

 Thomas Valone, Animal Behavior: Concepts, Processes, and Applications. Oxford University Press

# **Professional Committee Memberships**

- Northeastern Psychology Society, Organizing Committee, Conference, 2010-2011
- Society for Behavioral Neuroendocrinology, Public Education Committee, 2012-2016
- Society for Behavioral Neuroendocrinology, Hosting Committee Member, 2016 Montreal Conference

# Professional memberships:

- Society for Neuroscience (SFN)
- Society for Behavioral Neuroendocrinology (SBN)
- International Society for Developmental Psychobiology
- Research Society on Alcoholism (RSA)

# **Interdisciplinary Research Group:**

- Center for Developmental Psychobiology (CDBN), Binghamton University
- Evolutionary Studies (EvoS) at Binghamton University
- Developmental Exposure Alcohol Research Center (DEARC)

# Outside Examiner:

- Upstate Medical University, Laura Prestia (august 2014)
- Binghamton University, Biology, Tome Giardina (December 2015)

# **TEACHING EXPERIENCE**

#### **Binghamton University**

# **Undergraduate**

PSY 392 (various credits), Maternal Effects on Offspring, 08/09-present, Instructor

PSY 473, (4 credits), **Psychobiology of Sex and Reproduction**, 01/10-present, Instructor

PSY 363, (2 credits), **Behavioral Neuroscience Lab** (3 sections/semester), 08/10-present, Coordinator and Instructor

PSY 327, (4 credits), Evolution and Behavior, 01/14-present, Instructor

#### Graduate

PSY 573, (2 credits), Neurochemistry, 08/09-12/11, Instructor

PSY 592 (various credits), Maternal Effects on Offspring, 08/09-present-, Instructor

PSY 609B, (2 credits), Sex Difference in the Brain, 01/13-present, Instructor