

Samantha M. Fortin, Ph.D. (she/her)

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Education

2012-2017 **Doctor of Philosophy (Ph.D.) in Neuroscience** | University of Illinois at Chicago | Chicago, IL
2006-2010 **Bachelor of Science (B.S.) in Biology** | Ursinus College | Collegeville, PA

Research Experience & Employment

2017- **Postdoctoral Fellow** | University of Pennsylvania, Dept. of Psychiatry
Mentor: Dr. Matthew Hayes
2012-2017 **Graduate Student** | University of Illinois at Chicago, Dept. of Psychology
Mentor: Dr. Mitchell Roitman
2010-2012 **Research Technician** | University of Pennsylvania, Dept. of Psychology
Mentor: Dr. Harvey Grill
2009-2010 **Honors Undergraduate Researcher** | Ursinus College, Dept. of Biology
Mentor: Dr. Rebecca Lyczak

Funding and Research Support

2019-2021 **F32 NRSA Postdoctoral Fellowship– DK120211**
Agency: National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)
2019-2022 **NIH Loan Repayment Program Award**
Agency: National Institute of Health Division of Loan Repayment (DLR)
2018-2019 **T32 Training Grant– MH014654-41** (PI: Wade Berrettini)
Agency: National Institute of Mental Health (NIMH)
2016-2017 **Dean’s Scholar Fellowship**
Agency: University of Illinois at Chicago
2013-2014 **Chancellors Graduate Research Award**
Agency: University of Illinois at Chicago
2012-2013 **University Fellowship**
Agency: University of Illinois at Chicago

Teaching Experiences and Employment

2022 **Visiting Professor** | Clinical Psychopharmacology, Villanova University, Master of Science in Psychology Program
2022 **Visiting Professor** | Clinical Psychopharmacology, Haverford College
2021 **Visiting Professor** | Clinical Psychopharmacology, University of Pennsylvania
2020 **Visiting Professor** | Biopsychology, Villanova University
2018 **Visiting Professor** | Biopsychology, Villanova University
2017 **Seminar Coordinator** | Neurobiology, University of Illinois at Chicago
2015-2017 **Guest Lecturer** | Neurobiology, University of Illinois at Chicago
2014-2015 **Teaching Assistant** | Laboratory in Behavioral Neuroscience, University of Illinois at Chicago
2013 **Teaching Assistant** | Behavioral Neuroscience, University of Illinois at Chicago
2009-2010 **Instructor** | Supplemental Biology Course, Ursinus College
2007-2010 **On Campus Tutor** | Biology, Ursinus College

Mentoring Experiences

2022- **Independent Study Mentor** | Haverford College
2019-2020 **Farmington High School Capstone Program Mentor** | University of Pennsylvania
2018 **Smith College Praxis Summer Internship Mentor** | University of Pennsylvania

2018-2014-2015 **Graduate Student Mentor** | University of Pennsylvania
Supervisor of The College of Liberal Art and Science Undergraduate Research Initiative Award Project | University of Illinois at Chicago

2011-2010- **Supervisor of Research Technicians** | University of Pennsylvania | 2011-2012, 2017-present
Supervisor of Undergraduate Student Researchers
University of Pennsylvania | 2010-2012; 2017- present
University of Illinois at Chicago | 2013-2016

2009-2010 **Peer Advisor** | Ursinus College

Peer-Reviewed Publications (* denotes mentored researcher)

- 1) **Fortin SM**, Chen J*, Lopez M*, Petticord M*, Applebey S*, Hayes MR. A role for locus coeruleus glucagon like peptide-1 signaling in food intake control. In preparation.
- 2) **Fortin SM**, Chen J*, Hayes MR. A role for locus coeruleus calcitonin receptors in food intake control. In preparation.
- 3) Cui QN, Stein LM, **Fortin SM**, Hayes MR. The role of glia in the physiology and pharmacology of GLP-1: Implications for obesity, diabetes, and neurodegenerative processes including glaucoma. *British Journal of Pharmacology*. 2021 Sept 14. Epub ahead of print.
- 4) Borner T, Geisler CE, **Fortin SM**, Cosgrove R, Alsina-Fernandez J, Dogra M, Doebley S, Sanchez-Navarro MJ, Leon RM*, Gaisinsky J*, White A*, Bamezai A*, Ghidewon MY*, Grill HJ, Crist RC, Reiner BC, Ai M, Samms RJ, De Jonghe BC, Hayes MR. GIP Receptor Agonism Attenuates GLP-1 Receptor Agonist Induced Nausea and Emesis in Preclinical Models. *Diabetes*. 2021 Aug 11. Epub ahead of print.
- 5) Stein LM, McGrath LE*, Lhamo R*, Koch-Laskowski K*, **Fortin SM**, Skarbaliene J, Baader-Pagler T, Just R, Hayes MR, Mietlicki-Baase EG. The long-acting amylin/calcitonin receptor agonist ZP5461 suppresses food intake and body weight in male rats. *Am J Physiol Regul Integr Comp Physiol*. 2021 Aug 1;321(2):R250-R259.
- 6) **Fortin SM**, Chen J*, Hayes MR. The Mesencephalic Trigeminal Nucleus Controls Food Intake and Body Weight via Hindbrain POMC Projections. *Nutrients*. 2021 May 24; 13 (5),1642.
- 7) Borner T, Workinger JL, Tinsley IC, **Fortin SM**, Stein LM, Chepurny OG, Holz GG, Wierzbica AJ, Gryko D, Nexo E, Shaulson ED*, De Jonghe BC, Hayes MR, Doyle RP. Corination of a GLP-1 receptor agonist for glycemic control without emesis. *Cell Reports*. 2020 June 16; 31(11):107768.
- 8) **Fortin SM**, Lipsky R, Lhamo R*, Chen J*, Kim E*, Borner T, Schmidt HD, Hayes MR. GABA neurons in the nucleus tractus solitarius express GLP-1 receptors and mediate the anorectic effects of liraglutide in rats. *Sci Transl Med*. 2020 Mar 4; 12(533).
- 9) **Fortin SM**, Chen J*, Hayes MR. Hindbrain melanocortin $\frac{3}{4}$ receptors modulate the food intake and body weight suppressive effects of the GLP-1 receptor agonist, liraglutide. *Physiol Behav*. 2020 Mar 14; 220:112870.
- 10) **Fortin SM** and Roitman MF. Challenges to body fluid homeostasis recruit mesolimbic signaling in a need-specific manner. *J Neurosci*. 2018 Aug 1;38(31):6841-6853.
- 11) **Fortin SM** and Roitman MF. Central GLP-1 receptor activation modulates cocaine-evoked phasic dopamine release in the nucleus accumbens core. *Physiology and Behavior*. 2017 July 1;176:17- 25.
- 12) **Fortin SM** and Roitman MF. Physiological state tunes mesolimbic signaling: lessons from sodium appetite and inspiration from Randall R. Sakai. *Physiology and Behavior*. 2017 Sept 1;178:21-27.
- 13) Cone JJ, **Fortin SM**, McHenry JA, Stuber GD, McCutcheon JE, Roitman MF. Physiological state gates acquisition and expression of mesolimbic reward prediction signals. *PNAS*. 2016 Feb 16; 113(7):1943-8.
- 14) **Fortin SM**, Chartoff EH, Roitman MF. The Aversive Agent Lithium Chloride Suppresses Phasic Dopamine Release Through Central GLP-1 Receptors. *Neuropsychopharmacology*. 2016 Feb; 41(3):906-15.
- 15) Kanoski SE, Ong ZY, **Fortin SM**, Schlessinger ES*, Grill HJ. Liraglutide, leptin and their combined effects on feeding: additive intake reduction through common intracellular signaling mechanism. *Diabetes Obes Metab*. 2015 Mar;17(3):285-93.
- 16) **Fortin SM**, Cone JJ, Ng-Evans S, McCutcheon JE, Roitman MF. Sampling phasic dopamine signaling with fast-scan cyclic voltammetry in awake, behaving rats. *Curr Protoc Neurosci*. 2015 Jan 5; 70:7.25.1-7.25.20.
- 17) McCutcheon JE, Cone JJ, Sinon CG*, **Fortin SM**, Kantak PA, Witten IB, Deisseroth K, Stuber GD, Roitman MF. Optical Suppression of drug-evoked phasic dopamine release. *Front. Neural Circuits*. 2014 Sept 17; 8:114.
- 18) Kanoski SE, Alhadeff AL, **Fortin SM**, Gilbert JR*, Grill HJ. Leptin signaling in the medial nucleus tractus solitarius reduces food seeking and willingness to work for food. *Neuropsychopharmacology*. 2014 Feb;39(3):605-13.
- 19) Kanoski SE, **Fortin SM**, Ricks KM*, Grill HJ. Ghrelin signaling in the ventral hippocampus stimulates learned and motivational aspects of feeding via PI3K-Akt signaling. *Biol Psychiatry*. 2013 May 1;73(9):915-23.

- 20) Kanoski, SE, Rupprecht L, **Fortin SM**, De Jonghe BC, Hayes MR. Body weight and food intake suppression by glucagon-like-peptide-1 receptor agonists, exendin-4 and liraglutide, may require nausea. *Neuropharmacology*. 2012 Apr; 62(5-6):1916-27.
- 21) Hayes MR, Kanoski SE, De Jonghe BC, Lechner TM, Alhadeff AL, **Fortin SM**, Arnold M, Langhans W, Grill HJ. The common hepatic branch of the vagus is not required to mediate the glycemic and food intake suppressive effects of glucagon-like-peptide-1. *Am J Physiol Regul Integr Comp Physiol*. 2011 Nov; 301(5):R1479-85.
- 22) Kanoski SE, **Fortin SM**, Arnold M, Grill HJ, Hayes MR. Peripheral and central GLP-1 receptor populations mediate the anorectic effects of peripherally administered GLP-1 receptor agonists, liraglutide and exendin-4. *Endocrinology*. 2011 Aug; 152(8):3103-12.
- 23) Kanoski SE, Hayes MR, Greenwald HS, **Fortin SM**, Gianessi CA*, Gilbert JR*, Grill HJ. Hippocampal leptin signaling reduces food intake and modulates food-related memory processing. *Neuropsychopharmacology*. 2011 Aug; 36(9):1859-70.
- 24) **Fortin SM**, Marshall SL, Jaeger EC, Greene PE, Brady LK, Isaac RE, Schrandt JC, Brooks DR, Lyczak R. The PAM-1 aminopeptidase regulates centrosome positioning to ensure anterior-posterior axis specification in one-cell *C. elegans* embryos. *Dev Biol*. 2010 Aug 15;344(2):992- 1000.

Conference and Symposia Presentations (all presenting author)

- 2022 **Contribution of presynaptic locus coeruleus glucagon-like peptide-1 receptors to feeding behavior** | Keystone Symposium on Neuronal Control of Appetite. Banff, AB.
- 2022 **Expanding the neuroanatomical distribution of GLP-1 regulation of food intake control: A role for the locus coeruleus** | Winter Conference on Brain Research. Snowmass, CO.
- 2021 **Atypical Neural Circuitry in the Control of Feeding and Obesity** | The Obesity Society. Virtual.
- 2021 **Activation of presynaptic glucagon-like peptide-1 receptors in the locus coeruleus suppress food intake** | Society for the Study of Ingestive Behavior. Virtual.
- 2019 **POMC Projections from the NTS to the Mesencephalic Trigeminal Nucleus Control Food Intake** | The Obesity Society. Las Vegas, NV
+ UPenn Biomedical Postdoctoral Research Symposium. Philadelphia, PA
- 2019 **POMC projections from the nucleus tractus solitarius to the locus coeruleus control food intake.** | Society for the Study of Ingestive Behavior. Utrecht, Netherlands
- 2018 **GLP-1 Receptors in the NTS Mediate the Food Intake and Bodyweight-Suppressive Effects of Liraglutide.** | The Obesity Society. Nashville, TN
- 2018 **Differential contributions of NTS and AP GLP-1R populations in mediating the food intake-suppressive effects of liraglutide.** | Society for the Study of Ingestive Behavior. Bonita Springs, FL
- 2018 **Physiological need gates taste-selective phasic dopamine responses in the nucleus accumbens.** | Monitoring Molecules in Neuroscience. Oxford, UK
- 2017 **Physiological state modulates real time dopamine responses to taste stimuli.** | Chicago Society for Neuroscience. Chicago, IL
+ Graduate Program in Neuroscience Student Symposium. Chicago, IL
- 2016 **Nucleus accumbens dopamine responds to fluid balance- restoring stimuli in a state-dependent manner.** | Society for Neuroscience. San Diego, CA
- 2016 **Challenges to body fluid homeostasis recruit mesolimbic signaling to fluid ingestion in a need-specific manner.** | Society for the Study of Ingestive Behavior. Porto, Portugal
+ Society for Neuroscience. San Diego, CA
+ Graduate Program in Neuroscience Student Symposium. Chicago, IL
- 2016 **Central GLP-1 receptor activation mediates cocaine-evoked phasic dopamine release in the nucleus accumbens core.** | Brain Research Foundation Neuroscience Day. Chicago, IL
- 2014-2015 **Central glucagon-like peptide-1 receptor activation mediates lithium chloride-induced dopamine suppression in the nucleus accumbens.**
+ Graduate Program in Neuroscience Student Symposium. Chicago, IL | 2015
+ Invited Talk at Loyola University. Chicago, IL
+ Brain Research Foundation Neuroscience Day. Chicago, IL | 2015
+ Society for Neuroscience. Washington, DC | 2014
- 2013-2015 **GLP-1 receptor activation mediates LiCl induced dopamine suppression in the nucleus accumbens.** | Society for the Study of Ingestive Behavior. Seattle, WA | 2014
+ Brain Research Foundation Neuroscience Day. Chicago, IL | 2014
+ Chicago Brain Bee. Chicago, IL | 2014, 2015

- + Biology and Control of Nausea and Vomiting. Pittsburgh, PA | 2013
- 2012 **Leptin signaling in the nucleus tractus solitarius suppresses motivation to obtain rewarding food.** | Society for the Study of Ingestive Behavior. Zurich, Switzerland
- 2009-2010 **The PAM-1 aminopeptidase regulates centrosome positioning to ensure anterior posterior axis specification in one-cell C. elegans embryos.**
 - + Honors talk | Ursinus College Celebration of Student Achievement. Collegeville, PA | 2010
 - + American Society for Cell Biology Meeting. San Diego, CA | 2009
 - + Undergraduate Research Symposium at Haverford College. Haverford, PA | 2009
 - + Sigma Xi Research Symposium at St. Joseph's University. Philadelphia, PA | 2009
 - + Ursinus College Celebration of Student Achievement. Collegeville, PA | 2009

Awards/Honors

- 2019 **The Society for the Study of Ingestive Behavior New Investigator Travel Award** | Utrecht, Netherlands
- 2018 **The Obesity Society Ethan Sims Young Investigator Award** | Nashville, TN
- 2018 **Outstanding Thesis and Dissertation Award** | University of Illinois at Chicago | Chicago, IL
- 2018 **Monitoring Molecules in Neuroscience Travel Award** | Oxford, UK
- 2017 **UIC Neuroscience Graduate Student Symposium, 1st Place** | Chicago, IL
- 2017 **Graduate Student Symposium, 2nd Place** | The Chicago Chapter of SFN | Chicago, IL
- 2016 **Randal R. Sakai New Investigator Travel Award** | Society for the Study of Ingestive Behavior, Porto, Portugal
- 2013 **Provost Award for Graduate Research** | University of Illinois at Chicago
- 2014 **LAS PhD Student Travel Award** | University of Illinois at Chicago
- 2014 **GSC Student Travel Award** | University of Illinois at Chicago
- 2013 **LAS PhD Student Travel Award** | University of Illinois at Chicago
- 2013 **GSC Student Travel Award** | University of Illinois at Chicago
- 2012 **Biology and Control of Nausea and Vomiting Travel Award** | Pittsburgh, PA

Volunteer Work

- 2022- **UPenn Biomedical Postdoctoral Council Outreach Committee Organizer** | Philadelphia, PA
- 2019- **New Investigator Board Member** | Society for the Study of Ingestive Behavior
- 2019 **Moder Patshala Community Center** | Philadelphia, PA
- 2018 **Society for the Study of Ingestive Behavior 2018 Session Chair** | Bonita Springs, FL
- 2018 **Monitoring Molecules in Neuroscience 2018 Session Chair** | Oxford, UK
- 2016- 2017 **Graduate Program in Neuroscience Executive Committee** | University of Illinois at Chicago
- 2016- 2017 **Neuroscience Spring Symposium Organizing Committee** | University of Illinois at Chicago
- 2016- 2017 **Expanding Your Horizons (EYH) Organizing Committee** | Chicago Chapter | 2016
- 2016 **Neuroscience Symposium Data Blitz Facilitator** | University of Illinois at Chicago
- 2016 **Non-Academic Career Day Organizing Committee** | University of Illinois at Chicago
- 2014- 2016 **Chicago Brain Bee** | University of Illinois at Chicago
- 2014- 2017 **Expanding Your Horizons (EYH)** | Chicago Chapter
- 2013 **Brain Awareness Week** | Ludwig van Beethoven Elementary School, Chicago, IL
- 2013- 2017 **Graduate Student Council Representative** | University of Illinois at Chicago
- 2008 **Mosaic International Institute Intern** | Ursinus College Study Abroad Semester in Madrid, Spain