

**Melissa Cavallin Johnson, Ph.D.**  
Maiden Name: Melissa Ann Cavallin

**Contact Information**

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**Education**

Ph.D.	Medical College of Georgia, Department of Physiology Dissertation: <i>Macrophage Recruitment Signals Following Unilateral Chorda Tympani Nerve Degeneration</i> Advisor: Dr. Lynnette P. McCluskey	2002-2007
B.A.	LaGrange College Major: Biology Minor: Chemistry Summa Cum Laude (highest GPA in class)	1998-2002

**Professional Experience**

Professor & Biology Undergraduate Program Coordinator Biology Program, University of West Georgia Certified UWG Online Course Developer (2016-present)	2023-present
Professor & Biology Graduate Program Coordinator Biology Program, University of West Georgia Certified UWG Online Course Developer (2016-present)	2021-2022
Associate Professor & Biology Graduate Program Coordinator Biology Program, University of West Georgia	2015-2021
Assistant Professor Department of Biology, University of West Georgia Certified UWG Online Course Developer (2016-present)	2009-2015
NIH Postdoctoral Fellow, Supervisor of Undergraduate Directed Individual Study Students, & Instructor Department of Biological Sciences, Program in Neuroscience The Florida State University	2007-2009
Graduate Research Assistant & NIH Predoctoral Fellow Department of Physiology, Medical College of Georgia	2002-2007
Laboratory Assistant Department of Chemistry, LaGrange College	2001-2002

Howard Hughes Summer Research Internship 2001  
Department of Microbiology, Miami University (Oxford, OH)  
Advisor: Dr. Luis A. Actis

### **Honors**

Wall of Outstanding Alumni, LaGrange College 2011-2012  
Ernest J. Polak Travel Award for AChemS XXXI Annual Meeting, AChemS 2009  
Travel Award for AChemS XXVII Annual Meeting, AChemS 2005  
Excellence in Research Award-Physiology, Medical College of Georgia 2004  
Gonfalon Bearer at Graduation (Honor for highest GPA), LaGrange College 2002  
Omicron Delta Kappa Member 2001-present  
Gonfalon Bearer at Convocation (Honor for highest GPA), LaGrange College 2001  
Arthur Hicks Organic Chemistry Award, LaGrange College 2001  
Atlanta Panhellenic Association Scholarship, LaGrange College 2001  
Shibley-Hicks Biology Scholarship, LaGrange College 2000-2002  
Sun Trust Bank Scholarship, LaGrange College 2000-2001  
CRC Press LLC Freshman Chemistry Achievement Award, LaGrange College 2000  
All-Conference Academic Team for Softball, LaGrange College 1999  
Governor's Honor Scholarship-Valedictorian, LaGrange College 1998-2002  
Hope Scholarship, LaGrange College 1998-2002  
Cunningham Scholarship, LaGrange College 1998-2002  
Dean's List, LaGrange College 1998-2002  
Omicron Delta Kappa Scholar, LaGrange College 1998-2002

### **Professional Affiliations**

Georgia Academy of Science (current member)  
Association for Chemoreception Sciences (AChemS)  
The American Physiological Society  
Society for Neuroscience  
Omicron Delta Kappa [Chapter Co-President (2001-2002)]

### **Teaching**

#### **Courses Taught:**

**University of West Georgia** (note: course numbers and titles reflect current listings):

BIOL 1107: Principles of Biology I (S23, F23)  
BIOL 1107L: Principles of Biology I Lab (F23-2 sections)  
BIOL 2252L: Anatomy & Physiology II Lab (S24)  
BIOL 3134: Cell and Molecular Biology (S24, Su23-online, S23, F22, Su22-online, S22, F21, Su21-online, S21, Su20-online, F11, F10)  
BIOL 3513/6513: Human Physiology (F22, F20-dual modality COVID, F19, F18, F17, F16, F15, F14, F13-online, F12, F11, F10, F09)  
BIOL 3526/6526: Vertebrate Histology (S24, S22, S21, S20-online half semester COVID, S19, S18, S17, S16, S15, S14, S13, S12, S11, S10)  
BIOL 4503/6503: Biological Perspectives: Biochemistry (S24, F23, Su23-online)  
BIOL 4734/6985: Neuroscience (Su22-online, F21, Su21-online, F20-dual modality COVID, Su20-online, F19, Su19-online, F18, Su18-online, F17, Su17-online, F16, Su16-online, F15)  
BIOL 4981: Independent Study (F21-Honor's Thesis, Su20-online: Principles of Olfaction, F2015: Prion Diseases, S11: Development of the Nervous System, F10: Taste Physiology, F09: Pathophysiology)

BIOL 4983: Senior Biology Research (F22, Su22, S22, F21, S21, F20, S20-online half semester COVID, F19, S19, F18, F17, F15, Su15, S15, F14, Su14, F13, F12, Su12, S12, F11)

BIOL 4984: Senior Seminar (F21, F20, S20-online half semester COVID, F19, S19, S18, S17, S16, S15, S14)

BIOL 4986: Biological Internship (S18, S17, S14, S13, F12, S12)

BIOL 6981: Independent Study (F22: Graduate Seminar; S22: Histopathology, Vertebrate Anatomy, & COVID Pathology; F21: Pathology of Diabetes; Su21-online: Graduate Internship & Genetics in Oral Health, S21: Graduate Internship, S21-online: Graduate Seminar, F20: Graduate Internship, F19: Neuroscience of Active Learning, F18: Neuroscience Clinical Cases, Su18-online: Muscle Hypertrophy, S18: Cancer Biology, Su16: Graduate Seminar, F15: Emerging Plagues Graduate Seminar, S15: Cancer Biology, F14: Molecular Biology, Su14: Graduate Seminar, S13: Neurophysiology, F12: Human Pathophysiology, S10: Biology Simulations)

BIOL 6982: Directed Readings (S21: Electrophysiology, S21-online: Oral Function & Histology, Su18-online: Exercise & Neurogenesis, Su16: Oral Histology and Physiology, S16: Learning in the Classroom, S16: Cancer Biology, S12)

BIOL 6983: Graduate Research (F21, S21, S19, F18, F13, S13, S11, F10, Su10)

BIOL 6984: Graduate Seminar (F21, F12: Science Careers, S10: Channelopathies)

BIOL 6995: Comprehensive Exam (F22, S22, F21, F19, S19, F18, Su18, S18, F17, S17, Su16, S16, S15, S14, S13, S12, S11)

**The Florida State University:**

BSC2010: Introductory Biology I (Assistant Instructor; F08)

BSC4900/5900: Directed Individual Study (Supervisor of undergraduate and graduate; Su09, S09, F08, Su08, S08, F07)

BSC4970: Honor's Thesis (Supervisor; Su09, S09, F08, Su08, S08, F07)

**LaGrange College:**

CHEM 1101: General Chemistry I (Laboratory Teaching Assistant; F01)

CHEM 1102: General Chemistry II (Laboratory Teaching Assistant: S02)

INTM 3326: Lab Course in Biotechnology (Laboratory Teaching Assistant; January 02)

**Mentoring:**

**Advanced Academy (High School) Research Student:**

Adarsha Mella (S12)

**Undergraduate Research Students (abstracts & publications in Professional Growth & Development section):**

Alayna Lisbon Georgia-Alabama Louis Stokes Alliance for Minority Participation (GA-AL LSAMP) (F23-present)	Aramide Olorunfemi (F17-Su19)
Raymond Eyo (Sp23-present)	Eliza Sambu (F17-Su19)
Nonso Nwanye: Georgia-Alabama Louis Stokes Alliance for Minority Participation (GA-AL LSAMP) Fellowship (F22-present)	Kardeem Joseph: Georgia-Alabama Louis Stokes Alliance for Minority Participation (GA-AL LSAMP) Fellowship (F17-S19)
Heidi Perez Georgia-Alabama Louis Stokes Alliance for Minority Participation (GA-AL LSAMP) (F22-present)	Madison Gregory (S17-Su17)
Morgan Hicks (F22)	Allison Harrell (S17-Su17)

Destiny Gray (F22)	Tiffani Lambert (F15-S16)
Dakota Patterson (S22-F22)	Brandi Bagwell (F15)
Nicole Branum (S22)	Tyler Thomas (Su15-S16)
Sophia Ortiz (S22)	Laura Krick (Su15-F15)
Mileinys Ovalles-Reina (F21)	Christopher Johnson (Su15-F15)
Cassie Palma (S21-S22)	Maya Odugunwa (S15)
Amanda Clay: Georgia-Alabama Louis Stokes Alliance for Minority Participation (GA-AL LSAMP) Fellowship & Honor's Thesis (S20-Su22)	Christiana Gentry (S15)
Oddesy Allen (S20-S21)	Christiana Anuforo (Su14-F14)
Taylor Burrell (S20)	Toluope Odugunwa (Su14-S15)
Courtney Pauls-Washington (F19)	Christina Lark (S13-S14)
Tyler Combs (S19-Su20)	Melissa Williams (Su12-F12)
Jessica Miller (S19-Su20)	Kaneka Covington (Su12)
Janet Ligeon (S19-F19)	Lisa Smith (Su12-S13)
Aliyah Dean (S19)	Sandy Woods (S12-S13)
Ekemini Udom (S19-S20)	Courtney Hylton (F11-S12)
Joyce Onwuchekwa (F18)	Heidi Lilley (F11)
Grace Onwuchekwa (F18)	Kim Loberbaum-Fears (S11-S12)
Amber Tatham Smith: Honor's Thesis (F18-S19)	Carlos Cano: Student Research Assistant Program (F10-S12)
Brionna Schaeffer (F17-S18)	Surangi Perera (S10)
Ashleigh Walker (F17-S18)	

**Graduate Research Students (abstracts & publications in Professional Growth & Development section):**

Taylor Burrell (S21-F21)	Thomas Parks (F12-S14)
Jaeda Miles (F18-S19)	Adam Wharton (F12-S13)
Kristina Andrews (F12-F13)	Tanielle Brew (S10-S11)

**Graduate Student Committees:**

Sydney Edgar thesis (present)	Abigail Johnson non-thesis (Chair; S17 graduation)
Emma Young thesis (S23 graduation)	Blake Conner non-thesis (Chair; S17 graduation)
Taylor Burrell non-thesis (Chair; S22 graduation)	Lacey Avery M.A. Psychology (F16 graduation)
Aramide Olorunfemi non-thesis (Chair; S22 graduation)	Devan Rediger non-thesis (Chair; Su16 graduation)
Kysis Pinto non-thesis (S22 graduation)	Kim Loberbaum-Fears non-thesis (Chair; Su16 graduation)
Chelsea Odom non-thesis (F21 graduation)	Leah Le thesis (S16 graduation)
Antasia Parks non-thesis (Chair; F21 graduation)	Kelsie Decker-Pulice thesis (S16 graduation)
Logan Howell non-thesis (Chair; F21 graduation)	David Shoemaker non-thesis (S16 graduation)
Roni Blackmon non-thesis (Chair; F21 graduation)	Daniel Brooks non-thesis (F15 graduation)
Amanda Nyuma non-thesis (F20 graduation)	Caycee Creamer non-thesis (S15 graduation)
Ben McArthur non-thesis (F20 graduation)	Erica Rowe non-thesis (Chair; S15 graduation)
Bridget Piatt thesis (F20 graduation)	Thomas Parks non-thesis (Chair; S14 graduation)
Keith Dreyer non-thesis (Chair; F19 graduation)	Melissa Hill non-thesis (S14 graduation)
Amber Acree non-thesis (Chair; S19 graduation)	Shannea Carlton non-thesis (Chair; S14 graduation)
Jaeda Miles non-thesis (Chair; S19 graduation)	Miriam Arroyo thesis (F13 graduation)
Mary Manders non-thesis (Chair; F18 graduation)	Kristina Andrews thesis (Chair; hardship withdrawal F13)
Justin Smith non-thesis (Chair; Su18 graduation)	Derek Duran non-thesis (S13 graduation)

Matthew Stilley non-thesis (Chair; S18 graduation)	Randi-Lynn Korn non-thesis (Chair; S13 graduation)
Zachary Frechette non-thesis (Chair; S18 graduation)	Adam Wharton non-thesis (Chair; S13 graduation)
Autumn Gavora non-thesis (F17 graduation)	Charity Hack non-thesis (Chair; S12 graduation)
Shelby Phan non-thesis (Chair; F17 graduation)	Dee Rivers non-thesis (S11 graduation)
Amanda Stapleton non-thesis (F17 graduation)	Chadrick Ogden non-thesis (S11 graduation)
Chelsea Whittle non-thesis (Chair; S17 graduation)	Tanielle Brew non-thesis (Chair; S11 graduation)
John Winters non-thesis (Chair; S17 graduation)	

### **Honor's Theses:**

Isabella Pitts (present): Neurogenesis.

Daenecia Hines (present): Glycogen storage diseases.

Tayte Fuqua (Su23): Cosmetic surgery: biological and societal implications.

Amanda Clay (Su22): Testing the validity of a linear correlation model through OSN number estimates.

Alane Rogers (S22): The relationship between hypothalamic-pituitary-adrenal axis functioning and the development of anxiety disorders as a result of stress.

Natalie Hobbs (S22): Antibiotic resistance of *Neisseria gonorrhoeae* and the effects of comprehensive sexual education of reducing infection rates in young adults.

Amber Tatham Smith (S19): Toward an understanding of consciousness and body perception: Exploring sensory perception and its involvement with our conception of reality.

Martena Williams (S18): The histology and physiology of the neuromuscular junction.

### **Student Fellowships & Grants (Serve as Research Advisor; ~\$22,000 total funding):**

Alayna Lisbon (F23-present): Georgia-Alabama Louis Stokes Alliance for Minority Participation (GA-AL LSAMP) Fellowship Program. \$2000/semester student stipend.

Heidi Perez (F23-present): Georgia-Alabama Louis Stokes Alliance for Minority Participation (GA-AL LSAMP) Fellowship Program. \$2000/semester student stipend.

Nonso Nwanye (S22-present): Georgia-Alabama Louis Stokes Alliance for Minority Participation (GA-AL LSAMP) Fellowship Program. \$2000/semester student stipend.

Amanda Clay (S20-F21): Georgia-Alabama Louis Stokes Alliance for Minority Participation (GA-AL LSAMP) Fellowship Program. \$2000/semester student stipend.

Kardeem Joseph (F17-S19): Georgia-Alabama Louis Stokes Alliance for Minority Participation (GA-AL LSAMP) Fellowship Program. \$2000/year student stipend.

### **Teaching Certification:**

Certified UWG Online Course Developer (2015-present): Completed Quality Matters 3 course training series Designing Your Online Course, Applying the Quality Matters Rubric Course, and Peer Reviewer Course.

### **Professional Growth & Development**

#### **Research Interests:**

I am interested in the mechanisms involved in intercellular and intracellular signaling in the field of chemical senses (taste and olfaction). My doctoral work focused on the intercellular signaling between degenerating taste receptor cells and cells of the immune system to understand how regeneration of the nerves innervating taste buds occurs. I switched gears to look at intracellular signaling within olfactory

sensory neurons and mitral cells during my postdoctoral work, which allowed me to observe anatomical circuitry changes as well as electrophysiological changes in response to changes in the intracellular signaling pathway controlling the voltage-gated potassium channel (Kv1.3). I am now exploring the modulation of Kv1.3 by tyrosine phosphatases in the olfactory bulb in response to insulin stimulation. Intranasal delivery of insulin in mice or bath application in primary cell culture will be used to monitor electrical excitability of mitral cell neurons in response to changes in the intracellular signaling pathways. This work has implications not only for understanding normal olfactory function, but also the role of the olfactory system in controlling metabolic state and fending off obesity.

**Fellowships & Grants (\$909,480 total requested; \$393,980 total funded; this review period: \$461,000 total requested; \$8,500 total funded):**

**External Applications (\$861,980 total requested: \$376,980 total funded; this review period: \$450,000 requested; \$0 total funded):**

U.S. Department of State (2022) Building capacity for medical shadowing abroad: A new experiential learning activity for pre-med majors. PI: Anne Gaquere-Parker; Co-PIs: Melissa Johnson, Gregory Payne, and Vickie Geisler. \$35,000 requested.

Whitehall Foundation Research Grant (2019) Role of phosphorylation in mitral cells for olfactory behaviors. \$225,000 requested; not funded.

Whitehall Foundation Research Grant (2017) Role of phosphatases in olfactory signaling in mitral cells. \$225,000 requested; not funded.

NIH AREA R15 Application (2011-2015 with no cost extension) Phosphatase regulation of olfactory bulb mitral cell activity. \$250,000 requested; funded Grant Number 1R15DC011923-01.

NIH National Research Service Award Institutional Training Grant Postdoctoral Fellowship (2007-2009) Chemosensory Training Program. \$85,436 requested; funded (to FSU) Grant Number 5-T32-DC00044. Mentor: Dr. Debra A. Fadool.

NIH Ruth L. Kirschstein National Research Service Award Predoctoral Fellowship (2006-2007) Adhesion Molecules and Chemokines in the Taste System. \$41,544 requested; funded Grant Number 1-F31-DC008263. Mentor: Dr. Lynnette P. McCluskey.

**Internal Applications (\$47,500 total requested: \$17,000 total funded; this review period: \$11,000 requested; \$8,500 total funded):**

Faculty Research Grant Program (2021FY) Phosphatase expression in organs for sense of smell. \$5,000 requested; funded.

Graduate School Recruitment Grant (2019FY) M.S. in Biology Advertising & Printed Recruitment Materials. \$1,000 requested; funded.

Faculty Research Grant Program (2016FY) Mitogen-activated protein kinase phosphatase-1 (MKP-1) regulation of olfactory system function. \$5,000 requested; \$2,500 funded.

Student Research Assistant Program (2012-2013) Phosphatase expression in the olfactory epithelium and olfactory bulb. \$2,000 student salary requested; funded.

COSM Research Initiative Award (2011-2012) Phosphatase expression in the olfactory bulb and olfactory epithelium. \$2,500 student salary requested; funded.

Student Research Assistant Program (2011-2012) Phosphatase expression in the olfactory epithelium and olfactory bulb. \$2,000 student salary requested; funded.

Tech Fee Proposal (2011) Human physiology lab equipment. \$30,000 requested; not funded.

Student Research Assistant Program (2010-2011) Phosphatase expression in the olfactory epithelium and olfactory bulb. \$2,000 student salary requested; funded.

**Publications (underline indicates undergraduate and graduate student authors):**

**Johnson, M.C.**, C. Cano, K. Loberbaum-Fears, A. Wharton, and T. Parks. (2024) Tyrosine phosphatase expression in the mouse olfactory bulb and epithelium. **In preparation.**

Thiebaud, N., **M.C. Johnson**, J.L. Bultler, G.A. Bell, K.L. Fergusson, A.R. Fadool, J.C. Fadool, A.M. Gale, D.S. Gale, and D.A. Fadool. (2014) Hyperlipidemic diet causes loss of olfactory sensory neurons, reduces odor discrimination, and disrupts odor-reversal learning. **J. Neurosci.** 34:6970-6984. (Figure selected as cover illustration.)

\*\*6 UWG students included in acknowledgements for their effort toward the publication.

\*\*Article selected as a Highlight in *Nature Reviews Neuroscience* 15:428-429 "Eat well to improve smell?" (2014)

\*\*Article highlighted in *ARY News* (July 5, 2018) "Side effect of eating high-fat foods: You could lose your sense of smell."

**Johnson, M.C.**, K.C. Biju, J. Hoffman, and D.A. Fadool. (2013) Odor enrichment sculpts the abundance of olfactory bulb mitral cells. **Neurosci. Lett.** 541:173-178.

Tucker, K., **M.A. Cavallin**, P. Jean-Baptiste, K.C. Biju, J.M. Overton, P. Pedarzani, and D.A. Fadool. (2010) The olfactory bulb: a metabolic sensor of brain insulin and glucose concentrations via a voltage-gated potassium channel. **Results Probl Cell Differ** 52:147-157.

**Cavallin, M.A.**, K. Powell, K.C. Biju, and D.A. Fadool. (2010) State-dependent sculpting of olfactory sensory neurons is attributed to sensory enrichment, odor deprivation, and aging. **Neurosci. Lett.** 483:90-95.

Marks, D.R., K. Tucker, **M.A. Cavallin**, T.G. Mast, and D.A. Fadool. (2009) Awake intranasal insulin delivery modifies protein complexes and alters memory, anxiety, and olfactory behaviors. **J. Neurosci.** 29: 6734-6751.

Colley, B.S.\* , **M.A. Cavallin\***, K.C. Biju, and D.A. Fadool. (2009) Brain-derived neurotrophic factor modulation of Kv1.3 channel is dysregulated by adaptor proteins Grb10 and nShc. **BMC Neurosci.** 10: 8. (\*These two authors contributed equally to this publication.)

**Cavallin, M.A.** and L.P. McCluskey. (2007) Upregulation of the chemokine monocyte chemoattractant protein-1 following unilateral nerve injury in the peripheral taste system. **Neurosci. Lett.** 413: 187-190.

**Cavallin, M.A.** and L.P. McCluskey. (2007) Upregulation of intracellular adhesion molecule (ICAM)-1 and vascular adhesion molecule (VCAM)-1 after unilateral nerve injury in the peripheral taste system. *J. Neurosci. Res.* 85: 364-372.

**Cavallin, M.A.** and L.P. McCluskey. (2005) Lipopolysaccharide-induced up-regulation of activated macrophages in the degenerating taste system. *J. Neurosci. Res.* 80: 75-84. (Figure selected as cover illustration).

**Abstracts (underline indicates undergraduate and graduate student authors):**

Fuqua T and **Johnson MC.** (2023) Physicians perform elective surgeries like breast augmentation which violates their code of ethics. UWG Scholars' Day Undergraduate Research Conference, Carrollton, GA.

Nnwanje N, Perez H, Eyo R, Patterson, and **Johnson MC.** (2023) Can we use a linear correlation model to substitute for individually counting olfactory sensory neurons expressing the M72 odor receptor? UWG Scholars' Day Undergraduate Research Conference, Carrollton, GA.

Nnwanje N and **Johnson MC.** (2023) Can we use a linear correlation model to substitute for individually counting olfactory sensory neurons expressing the M72 odor receptor? LSAMP Symposium, UWG, Carrollton, GA.

Clay A, Palma C, Branum N, Ortiz S, Patterson D, and **Johnson MC.** (2022) Determining olfactory sensory neurons expressing the M72 odor receptor by testing the validity of a linear correlation model. UWG Undergraduate Research Day, Carrollton, GA.

Hobbs N and **Johnson MC.** (2022) Antibiotic resistance of *Neisseria gonorrhoeae* and the effect of comprehensive sexual education of reducing infection rates in young adults. UWG Undergraduate Research Day, Carrollton, GA.

Rogers L and **Johnson MC.** (2022) Relationship between hypothalamic-pituitary-adrenal axis functioning and development of anxiety disorders as a result of stress. UWG Undergraduate Research Day, Carrollton, GA.

Rogers L and **Johnson MC.** (2022) Relationship between hypothalamic-pituitary-adrenal axis functioning and development of anxiety disorders as a result of stress. Georgia Undergraduate Research Collective Event, State Capital, Atlanta, GA.

Clay A and **Johnson MC.** (2022) Testing the validity of a linear correlation model to determine olfactory sensory neurons expressing the M72 odor receptor. Georgia Undergraduate Research Collective Research Event, State Capital, Atlanta, GA.

Hobbs N and **Johnson MC.** (2021) Antibiotic resistance of *Neisseria gonorrhoeae* and the effects of comprehensive sexual education of reducing infection rates in young adults. Georgia Undergraduate Research Conference (virtual), University of West Georgia, Carrollton, GA.

Clay A and **Johnson MC.** (2021) Testing the validity of a linear correlation model to determine olfactory sensory neurons expressing the M72 odor receptor. Georgia Undergraduate Research Conference (virtual), University of West Georgia, Carrollton, GA.

- Clay A, Allen O, Combs T, Palma C, and **Johnson MC**. (2021) Testing the validity of a linear correlation model to determine olfactory sensory neurons expressing the M72 odor receptor. LSAMP Symposium (virtual), Clark Atlanta University, Atlanta, GA. (A. Clay won 1<sup>st</sup> place Poster Presentation in Biological & Life Sciences Division.)
- Clay A, Allen O, Combs T, Palma C, and **Johnson MC**. (2021) Testing the validity of a linear correlation model to determine olfactory sensory neurons expressing the M72 odor receptor. UWG Undergraduate Research Day (virtual), University of West Georgia, Carrollton, GA.
- Miller J, Allen O, Burrell T, Combs T, Udom E, and **Johnson MC**. (2020) Assessing a linear correlation model to predict glomerular volume given the total number of olfactory sensory neurons expressing one odor receptor type. UWG Undergraduate Research Day (Online abstracts only due to COVID), University of West Georgia, Carrollton, GA.
- Joseph K, Olorunfemi A, Miles J, Smith A, and **Johnson MC**. (2019) Using linear correlation model to predict glomerular volume based on the total number of olfactory sensory neurons expressing the M72 odor receptor. LSAMP Symposium, Clark Atlanta University, Atlanta, GA.
- Joseph K, Olorunfemi A, Miles J, Smith A, and **Johnson MC**. (2019) Using linear correlation model to predict glomerular volume based on the total number of olfactory sensory neurons expressing the M72 odor receptor. UWG Undergraduate Research Day, University of West Georgia, Carrollton, GA.
- Williams M and **Johnson M**. (2018) The histology and physiology of the neuromuscular junction. Honor's Thesis Project. UWG Undergraduate Research Day, University of West Georgia, Carrollton, GA.
- Joseph K, Olorunfemi A, Sambu E, Walker A, and **Johnson MC**. (2018) Viability of an alternative methodology to quantify olfactory sensory neurons in mice. LSAMP symposium, University of West Georgia, Carrollton, GA.
- Joseph K, Olorunfemi A, Sambu E, Walker A, and **Johnson MC**. (2018) Viability of an alternative methodology to quantify olfactory sensory neurons in mice. UWG Undergraduate Research Day, University of West Georgia, Carrollton, GA.
- Johnson MC**, Cano C, Loberbaum-Fears K, Wharton A, and Parks T. (2018) Role of phosphatases in olfactory signaling in mitral cells. Georgia Academy of Science 2018 Annual Meeting, University of West Georgia, April 13-14, 2018.
- Thomas T and **Johnson MC**. (2016) Theoretical biology: the molecular pathology and radical mechanisms of hPrP associated with fatal familial insomnia. Big Night, University of West Georgia, Carrollton, GA. (based on independent study research paper)
- Fadool DA, Thiebaud N, **Johnson MC**, Ferguson KL, Bell GA, Gale DS. (2014) Hyperlipidemic diet causes loss of olfactory sensory neurons, reduces olfactory discrimination, and disrupts odor-reversal learning. European Chemoreception Organization (ECRO) XXIV, Dijon, France. September 7-11, 2014.

- Thiebaud N, **Johnson MC**, Gale DS, Butler J, Fadool DA. (2012) Hyperlipidemic diet induces apoptosis-dependent loss of olfactory sensory neurons and decreases olfactory acuity in mice. SfN, New Orleans, LA.
- Cano C, Loberbaum K, Lilley H, Johnson MC, (2012) Tyrosine phosphatase expression in the mouse olfactory bulb and epithelium. COSM Research Day and Big Night, University of West Georgia, Carrollton, GA.
- Thiebaud N, **Johnson MC**, Gale DS, Butler JL, Fadool DA. (2012) High-fat diet causes loss of olfactory sensory neurons and their projections while concomitantly impairing olfactory learning and discrimination in mice. International Symposium on Olfaction and Taste (ISOT) XVI, Poster 230, Stockholm, Sweden.
- Thiebaud N, **Johnson MC**, Gale AM, Fadool DA. (2012) High-fat diet or genetically-induced obesity reduces the number of olfactory sensory neurons and their axonal projections. AChemS XXXIV, Poster P95, Huntington Beach, CA.
- Johnson MC**, Cano CA, Brew TL, Loberbaum K, Lilley H. (2012) Protein tyrosine phosphatase expression in the main olfactory epithelium and olfactory bulb. AChemS XXXIV, Poster P93, Huntington Beach, CA.
- Fadool DA, Cho S-H, Thiebaud N, Tucker K, Marks DR, **Johnson MC**, Butler J, Overton JM, Pedarzani P. (2012) Kv1.3 ion channel as a therapeutic target for diet-induced obesity and diabetes? Life Science Symposium, Florida State University College of Medicine, Tallahassee, FL.
- Cano CA, Brew TL, and **Cavallin MA**. (2011) Src homology-2 phosphatase expression in mouse olfactory bulb and epithelium. Research Day and Big Night, University of West Georgia, Carrollton, GA.
- Tucker KR, **Cavallin M**, Jean-Baptiste P, Overton JM, and Fadool DA. (2010) Ion channel in the olfactory bulb subserves as a metabolic sensor. AChemS XXXII, Poster, St. Petersburg, FL.
- Fadool DA, Tucker K, Marks DM, **Cavallin MA**, Overton JM, and Pedarzani P. (2010) The olfactory bulb as a metabolic sensor via insulin modulation. AChemS XXXII, Symposium, St. Petersburg, FL.
- Tucker K, **Cavallin M**, Jean-Baptiste P, Overton JM, and Fadool DA. (2010) A potassium channel expressed in the olfactory bulb subserves as a metabolic sensor. Southeastern Nerve Net (SENN), Atlanta, GA. (I was presenting author.)
- Tucker K, **Cavallin M**, Overton JM, and Fadool DA. (2009) Diet-induced obesity resistance of the *Kv1.3*-null mouse is inhibited by olfactory bulbectomy. Society for Neuroscience (SfN), Chicago, IL.
- Cavallin MA**, Powell K, Biju KC, and Fadool DA. (2009) Sculpting of odorant receptor-identified sensory neurons by odor enrichment/deprivation, aging, and diet. Southeastern Nerve Net (SENN), Jacksonville, FL.

Tucker KR, **Cavallin MA**, Overton JM, and Fadool DA. (2009) Resistance to obesity following Kv1.3-gene targeted deletion is inhibited by olfactory bulbectomy. AChemS XXXI, Abstract P78, Sarasota, FL. *Chemical Senses* 34: A45.

Jean-Baptiste P, Powell K, **Cavallin M**, and Fadool D. (2009) Sensory environment affects the abundance of olfactory sensory neurons in the main olfactory epithelium of mice. TriBeta Undergraduate Research Poster Competition at Florida State University.

**Cavallin MA**, Colley BS, Biju KC, and Fadool DA. (2008) Modulation of the voltage-gated potassium channel, Kv1.3, by the adaptor proteins Grb10 and nShc in the olfactory bulb. International Symposium on Olfaction and Taste (ISOT), Abstract P102, San Francisco, CA. *Chemical Senses* 33: S65.

Montgomery L, **Cavallin M**, Biju KC, Carlson S, Ramos E, Godbey SJ, and Fadool DA. (2008) Prolonged odorant stimulation sculpts olfactory sensory neurons. Southeastern Nerve Net (SENN), Atlanta, GA.

Carlson S, Ramos E, Montgomery L, **Cavallin MA**, Godbey SJ, Biju KC, and Fadool DA. (2007) Prolonged odorant stimulation sculpts olfactory sensory neurons. TriBeta Undergraduate Research Poster Competition at Florida State University.

**Cavallin MA** and McCluskey LP. (2006) Expression and regulation of lingual vascular adhesion molecules following unilateral chorda tympani nerve section. Abstract 86. AChemS XXVIII. *Chemical Senses* 31:A25. (Also presented at Medical College of Georgia Graduate Research Day)

**Cavallin MA** and McCluskey LP. (2005) Upregulation of lingual chemokines and adhesion molecules following unilateral chorda tympani nerve section. Abstract 359. AChemS XXVII. *Chemical Senses* 30:A228. (Also presented at Medical College of Georgia Graduate Research Day)

**Cavallin M** and McCluskey LP. (2003) Upregulation of immune function increases the number of lingual macrophages after chorda tympani nerve section: a cellular substrate for neurophysiological plasticity? Abstract 594.2. Washington, DC: Society for Neuroscience (SfN). (Also presented at Medical College of Georgia Graduate Research Day)

#### **Seminars and Talks:**

**Johnson, M.C.** (2017) Phosphatase Expression in the Olfactory System. Department of Biology, University of West Georgia.

**Johnson, M.C.** (2015) Life at a Regional Teaching University: Pitfalls to Avoid. Department of Biology, The Florida State University.

**Johnson, M.C.** (2014) Popular Lectures on 2014 Nobel Prizes: Physiology and Medicine. Townsend Center, University of West Georgia.

**Johnson, M.C.** (2013) Popular Lectures on 2013 Nobel Prizes: Physiology and Medicine. Townsend Center, University of West Georgia.

- Cavallin, M.A.** (2010) The olfactory bulb as a metabolic sensor: regulation of the phosphorylation state of the voltage-gated potassium channel Kv1.3. CMB Club, University of West Georgia.
- Cavallin, M.A.** (2010) State-dependent sculpting of olfactory sensory neurons is attributed to sensory enrichment, odor deprivation, and aging. EEOB Club, University of West Georgia.
- Cavallin, M.A.** (2009) Sculpting of odorant receptor-identified sensory neurons by odor enrichment/deprivation, aging, and diet. Southeastern Nerve Net (SENN), Jacksonville, FL.
- Cavallin, M.A.** (2009) Regulation of the Kv1.3 ion channel in the olfactory system. University of West Georgia, Carrollton, GA.
- Cavallin, M.A.** (2008) Regulation of the Kv1.3 ion channel in the olfactory system. University of South Alabama, Mobile, AL.
- Cavallin, M.A.** (2008) Regulation of the Kv1.3 ion channel in the olfactory system. Centre College, Danville, KY.
- Cavallin, M.A.** (2007) Novel roles for adhesion molecules and chemokines in the degenerating peripheral taste system. Howard Baker Seminar Series, Florida State University, Tallahassee, FL.
- Cavallin, M.A.** (2006) Novel roles for adhesion molecules and chemokines in the degenerating peripheral taste system. Department of Biology, Georgia State University, Atlanta, GA.
- Cavallin, M.A.** (2006) Novel roles for adhesion molecules and chemokines in the degenerating peripheral taste system. Department of Physiology Seminar Series, Medical College of Georgia, Augusta, GA.
- Cavallin, M.A.** (2005) The role of chemokines in macrophage recruitment in the degenerating peripheral taste system. Department of Physiology Seminar Series, Medical College of Georgia, Augusta, GA.

**Conferences & workshops attended:**

- Innovations in Pedagogy Conference, May 16-17, 2023. University of West Georgia, Carrollton, GA.
- Innovations in Pedagogy Conference, May 17-18, 2022. University of West Georgia, Carrollton, GA.
- Innovations in Pedagogy Conference, May 17-18, 2021. University of West Georgia, Carrollton, GA.
- Summer Grant Writing Workshop, July 2021. Office of Research & Sponsored Projects, University of West Georgia, Carrollton, GA. (Received \$1000 stipend to attend.)
- Innovations in Pedagogy Conference (virtual), May 18-19, 2021. University of West Georgia, Carrollton, GA.
- Innovations in Pedagogy Conference (virtual), May 12, 2020. University of West Georgia, Carrollton, GA.
- Innovations in Pedagogy Conference, May 14, 2019. University of West Georgia, Carrollton, GA.
- Innovations in Pedagogy Conference, May 15, 2018. University of West Georgia, Carrollton, GA.

Innovations in Pedagogy Conference. May 16, 2017. University of West Georgia, Carrollton, GA.  
Innovations in Pedagogy Conference. May 3, 2016. University of West Georgia, Carrollton, GA.  
Quality Matters Peer Reviewer Workshop. March 19-April 13, 2016. Quality Matters Online Training Website.  
Quality Matters Applying the Quality Matters Rubric Workshop. December 15, 2015. University of West Georgia, Carrollton, GA.  
UWG Online Super Skills Tuesday: Copyright by Dr. Thomas Tobin. November 10, 2015. University of West Georgia, Carrollton, GA.  
UWG Online Super Skills Tuesday: Hybrid Teaching by Dr. Thomas Tobin. November 10, 2015. University of West Georgia, Carrollton, GA.  
UWG Online Super Skills Tuesday: Improving your online course by Dr. Thomas Tobin. November 10, 2015. University of West Georgia, Carrollton, GA.  
Quality Matters Designing Your Online Class Workshop. November 5-19, 2015. Quality Matters Online Training Website.  
Innovations in Pedagogy Conference. April 28, 2015. University of West Georgia, Carrollton, GA.  
UWG Online Training Course: Development of online and blended courses and instruction on D2L software. Summer 2012. University of West Georgia, Carrollton, GA.  
USG Regional STEM Institute: Engaging the STEM student in and out of the classroom. February 19-20, 2010. University of West Georgia, Carrollton, GA.  
The Rushton Lecture Series. "I think, therefore ion. Voltage- and ligand-gated ion channels." November 7, 2009. Florida State University, Tallahassee, FL.

## **Service**

### **Professional Service:**

#### **External Reviewer for Promotion**

Dr. Nadja Spitzer, Application for Promotion to Full Professor, Department of Biological Sciences, Marshall University—Committee Chairperson  
Dr. Derrick Kolling, Department of Chemistry, Marshall University (December 2023-January 2024)

#### **Review of Manuscripts for Professional Journals:**

*Frontiers in Neurology* (2018, 2017)

*Journal of Neurology & Neuromedicine* (2016)

*Journal of Neuroscience and Behavioral Health* (2014)

#### **Review of Textbooks for Scientific Publishers:**

Jones-Bartlett (2021)

McGraw-Hill (2012)

#### **Professional Society Committee Membership:**

Association for Chemoreception Sciences (AChemS) Finance Committee (2015-2018)

#### **Regional Society Committee Membership:**

South East Nerve Net Annual Meeting Program Committee (2007)

#### **Reviewer for Conference Abstracts:**

Georgia Academy of Science Conference Biology Section Abstract Reviewer (2023)

**Community Service:**

Biomedical Project Consultant for Central Middle School Science Olympiad (2023-2024)  
Biomedical Representative SRB Committee for Carrollton High School Science Fair (2022-2023)  
Biomedical Project Advisor for Central Middle School Science Fair (2022-2023)  
Consultation to judge at West Georgia Regional Science & Engineering Fair (2024, 2023, 2022, 2021-virtual, 2020, 2019, 2018, 2017, 2016)  
Volunteer at UWG Pre-K for fall festival (2017)

**University Service:**

Chair of the UWG Institutional Animal Care and Use Committee (IACUC) (2013-present)  
Area D Core Assessment Grader for Biology (2021-present)  
College of Arts, Culture, & Scientific Inquiry (CACSI) representative to Graduate Advisory Committee in the Graduate School (2020-2021)  
College of Science & Mathematics (COSM) representative to Graduate Advisory Committee in the Graduate School (2016-2020)  
Member of M.A. in Psychology advisory committee for Lacey Avery in the Department of Psychology (2016)  
COSM representative on UWG Faculty Senate Intercollegiate Athletics Committee (2015-2017)  
Honorary Faculty Coach for the Day at UWG Women's Basketball Game (2012)  
COSM representative on Faculty Senate (2011-2012)  
Member Intercollegiate Athletics Committee Faculty Senate Subcommittee (2011-2012)  
Co-Advisor for UWG Mentor Program student organization (2010-2011)  
Volunteered at Annual Pie in Your Face Event sponsored by American Medical Student Association (2010)

**College Service:**

Biology representative on CACSI Graduate Committee (2020-2023; Chair 2020-2021)  
Biology representative on COSM Promotion & Tenure Committee (2016-2018)  
Participant in COSM Faculty Mentor Program—Mentor: Dr. Javier Hasbun (2011-2014)  
Member of COSM Research Steering Committee (2011-2014)

**Department/Program Service:****Administrative Service:**

Undergraduate Program Coordinator for B.S. in Biology (2023-present):  
Duties: Communicate program issues with Department Chair; approve WolfWatch petitions; work with advisors in the Advising Center to ensure accurate curriculum information is communicated to students; communicate with students about announcements and relevant information; approve requests for course equivalencies, study abroad syllabi, and transfer evaluations; maintain rotating lists for various jobs and program committees; follow up with progress of program committees; find volunteers for program, department, college, & university needs; annual student learning outcome & program assessment; modify/update curriculum; maintain catalog edits; attend recruitment events; participate in budget discussions with Department Chair & program colleagues; coordinate regular program meetings; communicate information to program faculty & staff

Graduate Program Coordinator for M.S. in Biology (2015-2022):

Duties: Recruitment of graduate students to program (successfully received internal funding in 2019FY to support this); organize incoming graduate student applications and

coordinate department approval of applicants 3 times per year; organize applications and coordinate department approval and hiring of Graduate Teaching Assistants 3 times per year; process all graduate student paperwork through the university; assign faculty advisors to graduate students; ensure that all students are meeting requirements for the program and for graduation; work with the Program in Biology Graduate Curriculum and Instruction Committee to evaluate, edit, and create policies and practices for the graduate program

**Other Service:**

Member of Biology Facilities & Technology Committee (2021-2024; Chair 2023-2024)

*Ex Officio* Member of Biology Graduate Curriculum & Instruction Committee (2015-2023)

Member of Biology Undergraduate Curriculum & Instruction Committee (2020-2023; Chair 2022-2023)

Member of Biology Scholarship & Awards Committee (2018-2021; Chair 2020-2021)

Member of Biology Finance Committee (2017-2020; Chair 2019-2020)

Biology representative at Preview Days (2019, 2016, 2010)

Member of Biology Ad Hoc Paid Leave Review Committee (2018)

Biology representative at Majors Fair (2018)

Member of Biology Personnel Committee (2015-2017; Chair 2016-2017)

Member of Biology Search Committee for Limited-Term Instructor/Lab Coordinator Position (2016)

Member of Biology Space Allocation Committee (2013-2016; Chair 2015-2016)

Member of Biology Graduate Curriculum & instruction Committee (2012-2015; Chair 2014-2015)

Member of Biology Search Committee for Tenure-Track Faculty Position (2013-2014)

Member of Biology Search Committee for Tenure-Track Comparative Animal Physiologist Faculty Position (2012-2013)

Member of Biology Undergraduate Curriculum & Instruction Committee (2009-2012; Chair 2011-2012)