

Jordyn M. Wilcox, Ph.D.

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ACADEMIC APPOINTMENT:

2023- present **Assistant Teaching Professor**, Department of Psychology, College of Arts and Letters, Neuroscience and Behavior affiliated faculty, University of Notre Dame, Notre Dame, IN

EDUCATION:

2021 Ph.D., Neuroscience, Vanderbilt University, Nashville, TN
GPA 4.0

2015 B.A., Neuroscience and Biochemistry, Colorado College, Colorado Springs, CO
Distinction in Neuroscience, GPA 3.91, *Cum laude*

TEACHING EXPERIENCE:

Developed all course content for lectures, workshops and review sessions given. Refer to Teaching Portfolio for additional information.

Undergraduate Level

2023- present **Assistant Teaching Professor**, Department of Psychology, College of Arts and Letters, Neuroscience and Behavior (NSBH) affiliated faculty, University of Notre Dame
Fall 2023 courses PSY 30160: Methods for Behavioral Sciences and PSY 30510: Behavioral Genetics

2022-2023 **Assistant Professor of Neuroscience**, Department of Psychological Science and Neuroscience, College of Science and Mathematics, Belmont University
PSY1150: Scientific Psychology (with lab), PSY4240: Learning and Conditioning (with lab), NEU3895: Developmental Neuroscience

2021 Invited **Lecturer**, Department of Medicine, Vanderbilt University Medical Center
“How to read a scientific paper” and “Statistics in the biomedical sciences” delivered for the Undergraduate Student Summer Research Academic Bootcamp, 12 students

2021 Visiting **Assistant Professor**, Department of Psychology, Colorado College
PY296: Functional Neuroscience, Summer Block A, 11 students
Development and delivery of 16 synchronous virtual lectures complimented by asynchronous virtual course content, including modified laboratory exercises, class discussions and examinations. Taught on the rigorous block plan (single course at a time for 3.5 weeks, meets daily).

2020 Visiting **Lecturer**, Department of Psychology, Colorado College
PY100: Introduction to Psychology, Summer Block A, 26 students (*max. enrollment*)
Created and delivered 15 lectures adapted to an abbreviated and virtual format, designed modified laboratory assignments, class discussions, and examinations. Block Plan.

- 2014-2015 Teaching Assistant, Organic Chemistry, Colorado College
- 2014-2015 Teaching Assistant, Exercise Physiology, Colorado College
- 2014-2015 Teaching Assistant, Psychology Research Design (Statistics and Methods), Colorado College

Graduate Level

- 2019-2021 Invited **Lecturer**, Neuroscience Graduate Program, Vanderbilt University
“Murine Neurobehavior”, NURO8352: Methods and Experimental Design in Neuroscience Research, 5-10 students per year
- 2019 Teaching Assistant, Neuroscience Graduate Program, NURO8345: Cellular and Molecular Neuroscience, Vanderbilt University
- 2019 Workshop leader, Vanderbilt Brain Institute’s NSO Academic Committee, Statistics in the Biosciences Workshop created for and delivered to pre-doctoral students preparing for PhD candidacy exams, Vanderbilt University

Other Teaching

- 2019 Trainer, Surgical training for implantation of a wireless EEG/EMG recording device in mice, Vanderbilt University
- 2014-2015 Peer Tutor, Quantitative Reasoning Center (QRC), Colorado College
- 2013-2014 Peer Tutor, Psychology Department, Colorado College

Research Supervision

- 2022-2023 Hands-on training, experimental design and planning, oversight and revision of research posters, contact time ~5 hour per week during academic year and ~40 hours per week during summer sessions, Belmont University

@ indicates work was presented by student(s) at national conferences

Josie Arant@	2023	Neuroscience, Belmont University
Karly Kamman@	2023	Neuroscience, Belmont University
Sarah Headapohl	2023	Neuroscience, Belmont University
Ellis Stafford	2023	Neuroscience, Belmont University
Zanko Jalal	2023	Neuroscience, Belmont University
Emelie McKenzie	2023	Neuroscience, Belmont University
Kristie Stephens	2023	Neuroscience, Belmont University
Gavin Khamphouvong	2022- 2023	Neuroscience, Belmont University
Husna Nabi ‘23	2022- 2023	Neuroscience (B.S.), Belmont University
Teel Walters@ ‘23	2022- 2023	Neuroscience (B.S.), Belmont University
Kathryn Cooke@	2022- 2023	Neuroscience, Belmont University

2017-2022 Day-to-day mentoring of undergraduate students in Dr. Bowman and Dr. Harrison labs; including training, experimental oversight and revision of research papers, student contact time ~10-15 hours per week, Vanderbilt University

^ indicates published co-author

Undergraduate students

Ines Debbiche '22 ^	2019- 2021	Neuroscience (B.S.), Vanderbilt University
Zaynah Ajmal '21	2019	Psychology (B.A.), Vanderbilt University
Bianca Gardner '21	2019	Neuroscience (B.S.), Vanderbilt University
Timothy Halbesma '18 ^	2017-2018	Neuroscience (B.A., <i>Honors</i>), Vanderbilt University
Preethi Umashanker '18 ^	2017-2018	Neuroscience (B.A., <i>Honors</i>), Vanderbilt University

High School students

Nell Cox ^	2021- 2022	University School of Nashville Class of 2022
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Technical Skills

Computer software: Zoom (break out rooms, poll, Q & A function), Canvas (LMS), BlackBoard (LMS), Self-service Banner, Qualtrics (survey tool)

RESEARCH EXPERIENCE:

2022-2023	Assistant Professor, Department of Psychological Science and Neuroscience, Belmont University
2021-2022	Postdoctoral Fellow, Department of Medicine, Vanderbilt University Medical Center Mentor: Dr. Fiona E. Harrison
2016-2021	Graduate Student, Interdisciplinary Graduate Program and Vanderbilt Brain Institute, Vanderbilt University Mentors: Dr. Aaron B. Bowman and Dr. Fiona E. Harrison <i>Dissertation</i> : "Manipulating Brain Manganese and Behavior in Huntington's Disease"
2012-2015	Undergraduate Student, Behavioral Neurotoxicology Lab, Colorado College Mentor: Dr. Lori L. Driscoll <i>Thesis</i> : "Effects of brief postnatal polybrominated diphenyl ether (PBDE) exposure on GABA-dependent behaviors in the adult rat"

Laboratory Skills and Techniques

In vivo rodent work: Extensive murine behavioral testing, drug administration, survival surgery, EEG recording and analysis, transcatheter perfusions and microdissection of select brain regions

Molecular biology: High-performance liquid chromatography (HPLC), enzyme kinetic assays, western blot, tissue fixation, sectioning and immunohistological staining, cell culture (primary glia and immortalized cell lines), immunocytochemistry, training in live cell imaging

Computer software: NeuroScore (EEG analysis), Ponemah (EEG acquisition), ANY-Maze (rodent behavior tracking), Noldus EthoVision (video tracking), SPSS Statistics, GraphPad PRISM, ImageJ, ImageStudioLite™

PROFESSIONAL ACTIVITIES:

Professional Organizations

2023- present Member, Faculty for Undergraduate Neuroscience (FUN)

2023- present Member, Society for the Teaching of Psychology (STP), Division 2 of the American Psychological Association (APA)

2020-2023 Member, Society for Redox Biology and Medicine (SfRBM)

2019-2023 Member, Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment (ISTAART); Nutrition, Metabolism and Dementia PIA (Professional Interest Area); Alliance of Women Alzheimer's Researchers (AWARE) PIA

Intramural Service (University of Notre Dame)

2023 Committee Member, Committee on Appointments (CA), Department of Psychology

Intramural Service (Belmont University)

2023 Chair, Pre-Professional Interview (PPI) Committee for Belmont student Josie Arant

2023 Committee Member, Laboratory Oversight Committee

2022 Faculty Advisor, Student-led organization The Women's Network

2022 Volunteer, Carter Lawrence Visit, Neuroscience outreach program for local elementary school

2022 Faculty Search Committee Member, tenure-track Clinical/Counseling PhD search

2022 Recruiter, Belmont University Fall Preview Days

2022 Reviewer, Belmont Institutional Review Board (IRB)

Intramural Service (Vanderbilt University)

2022 Volunteer, Annual "Brain Blast" outreach program with the Vanderbilt Brain Institute

2022 Peer Reviewer, *Vanderbilt Young Scientist*, internal journal showcasing research completed by local high schoolers

- 2019-2021 **Curriculum Committee**, Vanderbilt Brain Institute (VBI) Neuroscience Student Organization (NSO)
- 2019 Volunteer, Camp Vandy outreach with the Vanderbilt Brain Institute
- 2019 Abstract Reviewer, Vanderbilt Alzheimer’s Disease Research Day Program Committee
- 2019 Poster Judge and Abstract Reviewer, Vanderbilt Summer Science Academy
- 2018-2019 **Academic Committee**, Vanderbilt Brain Institute (VBI) Neuroscience Student Organization (NSO)
- 2018- 2019 Volunteer, Annual “Brain Blast” Outreach program with the Vanderbilt Brain Institute

Intramural Service (Colorado College)

- 2011-2015 President, Colorado College Rotaract Club (2013-2014); Secretary and Volunteer Coordinator (2012-2013)

Extramural Service

- 2023 Abstract Reviewer, National Conference on Undergraduate Research 2023
- 2021-2023 **Steering Committee**, Executive Committee, Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment (ISTAART) Nutrition, Metabolism and Dementia PIA (Professional Interest Area)
- 2021 Peer Reviewer, contributed to peer review for *Neurotoxicology* and *International Journal of Molecular Sciences*

Professional Development – Workshops Attended

- 2023 University of Notre Dame, Kaneb Center for Teaching Excellence, Keynote Speaker Dr. Bryan Dewsbury of Florida International University, “Beyond Inclusion: What Society Needs from Higher Education”, September 2023
- 2023 University of Notre Dame, Kaneb Center for Teaching Excellence, “Teaching in the Age of AI: Kick Off Panel”, August 2023
- 2023 University of Notre Dame, Kaneb Center for Teaching Excellence, “Equity-Oriented Pedagogy”, August 2023
- 2023 University of Notre Dame, Kaneb Center for Teaching Excellence, “Active Learning & Problem Solving”, August 2023
- 2023 University of Notre Dame, Kaneb Center for Teaching Excellence, “Course Design and Teaching Strategy” for new faculty, August 2023

- 2023 Educational and Faculty Development and DEI Fellow at Florida International University, “Culturally Responsive Teaching: Finding Your Way and Cultivating Community”, Webinar by Director Dr. Erica Caton, February 2023
- 2022 Belmont University Teaching Center, First Year Faculty Retreat, “Pausing to Reflect on Fall Semester 2022”, December 2022
- 2022 Belmont University Teaching Center, Guest Dr. Peter Felton of Elon University, “Relational Feedback: A Tool for Learning, Belonging, and Achievement”, August 2022
- 2022 Belmont University, Fall Faculty Workshop, August 2022
- 2022 Belmont University Teaching Center & Department of Information Technology (DIT), “Flipping Out About the Classroom”, August 2022
- 2022 Belmont University Teaching Center & Department of Information Technology (DIT), “Top Ten: Course Readiness and Design”, August 2022
- 2022 Belmont University Teaching Center & Department of Information Technology (DIT), “Augmenting Lectures with Active Learning”, August 2022
- 2022 Women in the Academy, Vanderbilt Margaret Cuninggim Women’s Center, “Sexual Harassment in the Academy”, February 2022
- 2021 Society for Redox Biology and Medicine (SfRBM), “Mentoring Matters: Building Mentoring Relationships with a Focus on Inclusion and Diversity”, November 2021
- 2021 Women in the Academy, Vanderbilt Margaret Cuninggim Women’s Center, “Negotiating Your First Academic Job”, October 2021
- 2021 Biomedical Research and Education Training (BRET) Career Development ASPIRE Café for Postdoctoral Fellows & Vanderbilt Center for Teaching, “How to Prepare a Teaching Demonstration”, October 2021
- 2021 Biomedical Research and Education Training (BRET) Career Development ASPIRE Café for Postdoctoral Fellows, “What to Expect in a Faculty Interview”, October 2021

Grants

- 2023 Faculty Sponsor, Goldwater Fellowship, supported undergraduate student submission (K. Kamman), *submitted*
- 2021-2022 Postdoctoral Trainee, Vanderbilt Memory and Alzheimer’s Center (VMAC) Interdisciplinary Alzheimer’s Disease Training Program (NIH T32 AG058524)
- 2019 Recipient, Russell G. Hamilton Graduate Leadership Development Institute **Travel Award** to present at Alzheimer’s Association International Conference (AAIC)

- 2017-2019 Graduate Student Trainee, Environmental Toxicology Training Grant (NIH T32 ES007028)
- 2014 Recipient, **Venture Grant** to travel to and present research at Society for Neuroscience (SfN) international conference

Honors, Awards, and Scholarships

- 2023 Nu Rho Psi Honor Society, Belmont University chapter
Faculty NRP Member number γ TN-4
- 2021 **Awardee**, Young Investigator Award for invited oral presentation at Society for Redox Biology and Medicine (SfRBM) annual international conference
- 2020 **Awardee**, Young Investigator Award for invited oral presentation at Society for Redox Biology and Medicine (SfRBM) annual international conference
- 2015 **Awardee**, Arnold B. Scheibel Neuroscience Award
Institutional honor awarded to “the most outstanding neuroscience graduate”
- 2015 Phi Beta Kappa Society
- 2015 Psi Chi National Honor Society
- 2014 Mortar Board, Colorado College Pikes Peak Chapter
- 2012 Alpha Lambda Delta National Honor Society
- 2011-2015 Scholar, Jay D. Cayton & Betty G. Saunders Endowed Scholarship
- 2011-2015 Scholar, Woman’s Club of Colorado Springs
- 2011-2015 Dean’s List, Colorado College

PUBLICATIONS AND PRESENTATIONS:

*denotes co-first author

denotes corresponding author

Peer-Reviewed Research Articles

Wilcox, J.M.#, Consoli, D.C., Paffenroth, K.C., Spitznagel, B.D., Calipari, E.S., Bowman, A.B., and Harrison, F.E. Manganese-induced hyperactivity and dopaminergic dysfunction depend on age, sex and YAC128 genotype. (2022) *Pharmacology Biochemistry and Behavior*, 213.
PMID: 35063467

Wilcox, J.M.*, Pfalzer, A.C.*, Tienda, A.T., Debbiche, I.F., Cox, E.C., Totten, M.S., Erikson, K.M., Harrison, F.E., and Bowman, A.B. YAC128 mouse model of Huntington disease is protected

against subtle chronic manganese (Mn)-induced behavioral and neuropathological changes. (2021) *Neurotoxicology*, 87, 94-105. PMID: 34543681

Wilcox, J.M., Consoli, D.C., Dixit, S., Buchanan, R.A., May, J.M., Nobis, W.P., & Harrison, F.E. Altered synaptic glutamate homeostasis contributes to cognitive decline in young APP/PSEN1 mice. (2021) *Neurobiology of Disease*, 158. PMID: 34450329

Pfalzer, A.C.*, **Wilcox, J.M.***, Codreanu, S.G., Totten, M., Bichell, T.J.V., Halbesma, T., Umashanker, P., Yang, K.L., Parmalee, N.L., Sherrod, S.D., Erikson, K.M., Harrison, F.E., McLean, J.A., Aschner, M., and Bowman, A.B. Huntington's Disease genotype suppresses global manganese-responsive processes in pre-manifest and manifest YAC128 mice. (2020) *Metallomics*, 12, 1118-1130. PMID: 32421118

Book Chapters

“Transcription” in “Fundamentals of RNA Structure and Function”. 1st Ed (2022). Authors Rachel Wilson, Evgenia Shishkova, Chris Dickinson, **Jordyn M. Wilcox**, Natalie L. Nicholls, Andy J. Wowor, Hayden Low, Neena Grover, and Jennifer F. Garcia. Learning Materials in Biosciences. Springer, DOI: 10.1007/978-3-030-90214-8_10

“Vitamin C in neurological function and neurodegenerative disease” in “The New Odyssey of an Old Vitamin: Vitamin C”. 1st Ed (2020). Authors Shilpy Dixit, David Consoli, Krista Paffenorth, **Jordyn Wilcox**, and Fiona Harrison. The CRC Press, Taylor and Francis Group. DOI: 10.1201/9780429442025-10

Scientific Oral Presentations (Local)

- 2021 “Targeting the Exposome in Neurodevelopment and Neurodegeneration.” Invited research talk, Belmont University
- 2020 “Manganese homeostasis disruption in a mouse model of Huntington's Disease.” Neuroscience Research Forum, Vanderbilt Brain Institute, Vanderbilt University
- 2019 “Manganese as a therapeutic modifier of Huntington's Disease: Supplementation in the YAC128 mouse model.” Neuroscience Research Forum, Vanderbilt Brain Institute, Vanderbilt University
- 2019 “Altered synaptic glutamate homeostasis underlies seizure-induced cognitive decline in young APP/PSEN1 mice.” Vanderbilt Brain Institute Annual Retreat, Vanderbilt University

Scientific Oral Presentations (International)

- 2021 “Chronic manganese exposure induces hyperactivity and dopaminergic dysfunction in young C57Bl/6 mice.” Invited talk, Society for Redox Biology and Medicine (SfRBM) annual international conference; recipient of 2021 Postdoctoral Fellow *Young Investigator Award* for this presentation.
- 2020 “Manganese differentially regulates dopaminergic dynamics and behavior in the YAC128 mouse model of Huntington's Disease.”

Invited talk, Society for Redox Biology and Medicine (SfRBM) annual international conference; recipient of 2020 Graduate Student *Young Investigator Award* for this presentation.

Webinars (International)

2022 Moderator and Organizer, ISTAART Journal Club: Meet the Author, Hosted by Nutrition, Metabolism and Dementia Professional Interest Area. October, 2022.

Invited Talks (Local)

2022 “How I got here and the research I have done along the way.” Summer Undergraduate Research Fellowship in the Sciences (SURFS) Faculty Seminar, June 2022

2011-2014 “What the Woman’s Club of Colorado Springs (WCCS) Scholarship means to me.” Student speaker at four WCCS annual fundraiser events.

2013 “How my scholarships have enabled me to learn, lead, serve, and grow at Colorado College.” Student speaker at Colorado College Annual Scholarship Appreciation Luncheon.

Poster Presentations (Local)

2022 Alvarez, M., Crow, N., Grady, K., Medley, G., Westbrook, A., and **Wilcox, J. M.** *Effects of Repeated Acute Exposure to Blue Light in a Spatial Memory Task.* Belmont Science Undergraduate Research Symposium.

2022 Headapohl, S., Crause, E., Eddleman, D., Mathews, L., Spurlin, M., and **Wilcox, J. M.** *The Impacts of Reward Salience on Rate of Learning and Extinction Procedures.* Belmont Science Undergraduate Research Symposium.

2022 Arnold, R., Gheen, C., Gray, G., Huesmann, I., Orndorff, H., Toepfer, C., and **Wilcox, J. M.** *The Effects of Modeled Depression on Cognitive Flexibility in Rats.* Belmont Science Undergraduate Research Symposium.

2022 Klopatek, E., Harvey, B., Garrels, T., Frances, D., Tobolski, E., Lado, G., and **Wilcox, J. M.** *Investigating the Impact of Unlimited Sucrose During Adolescence on Flex Maze Performance in Rats.* Belmont Science Undergraduate Research Symposium.

2022 Potts, H., Cooke, K., and **Wilcox, J. M.** *Examining the Role of Excess Vitamin D and the Dopaminergic System in the Manifestation of ADHD-like Behaviors in Rats.* Belmont Summer Undergraduate Research Fellowship in the Sciences (SURFS) Poster Day (July, 2022) and College of Science and Mathematics (CSM) Summer Poster Session (September, 2022).

2022 Cooke, K., Potts, H., and **Wilcox, J. M.** *Investigating the Role of Acute High Levels of Vitamin D on Autism Spectrum Disorder-Associated Behaviors in Rats.* Belmont Summer Undergraduate Research Fellowship in the Sciences (SURFS) Poster Day (July, 2022) and College of Science and Mathematics (CSM) Summer Poster Session (September, 2022).

- 2021 **Wilcox, J. M.**, Tienda, A. A., Spitznagel, B. D., and Harrison, F. E. *Manganese exposure induces hyperactivity and dopaminergic dysfunction in young C57Bl/6 mice*. Vanderbilt Kennedy Center Science Day and Vanderbilt Postdoctoral Association Symposium.
- 2020 **Wilcox, J. M.**, Consoli, D. C., Debbiche, I., Calipari, E., Bowman, A. B., and Harrison, F. E. *Manganese differentially regulates dopaminergic dynamics and behavior in the YAC128 mouse model of Huntington's Disease*. Vanderbilt Alzheimer's Disease Research Day.
- 2019 **Wilcox, J. M.**, Pfalzer, A. C., Halbesma, T. Umashanker, P. Yang, K., Wegrzynowicz, M., Harrison, F. E., Erickson, K. M., & Bowman, A. B. *Chronic subcutaneous manganese suppresses motor performance decline in YAC128Q mice*. Inaugural Vanderbilt Alzheimer's Disease Research Day (May, 2019) and Vanderbilt Kennedy Center Science Day (September, 2019).
- 2019 **Wilcox, J. M.**, Consoli, D. C., Dixit, S., Nobis, W. P., May, J.M., & Harrison, F.E. *Altered synaptic glutamate homeostasis underlies seizure-induced cognitive decline in young APP/PSEN1 mice*. Vanderbilt Brain Institute Annual Retreat.
- 2018 **Wilcox, J. M.**, Pfalzer, A. C., Halbesma, T. Umashanker, P. Yang, K., Wegrzynowicz, M., Harrison, F. E., Erickson, K. M., & Bowman, A. B. *Chronic subcutaneous manganese suppresses motor performance decline in YAC128Q mice*. Vanderbilt Brain Institute Annual Retreat.
- 2015 **Wilcox, J. M.**, & Driscoll, L. L. *Effects of brief postnatal PBDE exposure GABA-dependent behaviors in the rat*. Colorado College Psychology & Neuroscience Research Day.

Poster Presentations (National/International)

- 2019 **Wilcox, J. M.**, Consoli, D. C., Dixit, S., Nobis, W. P., May, J.M., & Harrison, F.E. *Altered synaptic glutamate homeostasis underlies seizure-induced cognitive decline in young APP/PSEN1 mice*. Alzheimer's Association International Conference, Los Angeles, CA.
- 2018 **Wilcox, J. M.**, Pfalzer, A. C., Halbesma, T. Umashanker, P. Yang, K., Wegrzynowicz, M., Harrison, F. E., Erickson, K. M., & Bowman, A. B. *Chronic subcutaneous manganese suppresses motor performance decline in YAC128Q mice*. Hereditary Disease Foundation biennial conference, Cambridge, MA.
- 2018 **Wilcox, J. M.**, Pfalzer, A. C., Sepulveda, J. Magee, S., & Bowman, A. B. *Manganese exposure differentially alters expression of Slc30a10, S100a9, Dmt1, and Bdnf in a mouse model of Huntington's Disease*. Society of Toxicology Annual Meeting, San Antonio, TX.
- 2014 **Wilcox (Watts), J. M.**, & Driscoll, L. L. *Effects of brief postnatal PBDE exposure on GABA_A receptor function in the rat*. Midstates Consortium for Mathematics and Science Undergraduate Research Symposium at the University of Chicago, Chicago, IL.
- 2014 Driscoll, L. L., Beckett, E., Boese, J., **Wilcox (Watts), J.**, Sperry, J., & Kasemodel, R. *Hedonic reward and incentive salience in rats exposed postnatally to the polybrominated diphenyl ether commercial mixture DE-71*. Society for Neuroscience annual conference, Washington, DC.

Media Mentions (Local)

2020 Research publication (*Metallomics 2020*, PMID: 32421118) featured in the Vanderbilt Center for Innovative Technology (CIT) Molecular Omics Spotlight