

Morgan A. Taylor, Ph.D.

Postdoctoral Scholar

The Ohio State University Wexner Medical Center

Department of Neuroscience

Institute of Brain, Behavior, and Immunity

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EDUCATION

2017-2022 **Southern Methodist University**, Dallas, TX
Ph.D., Molecular and Cellular Biology
Dissertation: Dissecting interactions across gene regulatory layers in *C. elegans*

2015-2017 **Texas Christian University**, Fort Worth, TX
M.S., Biology
Thesis: B-cell response and antibody production in an inflammatory model of Alzheimer's disease

2010-2014 **Baylor University**, Waco, TX
B.S. Biology

POSITIONS HELD

03/2023 - present **Postdoctoral Researcher**, The Ohio State University Wexner Medical Center Department of Neuroscience, Columbus, OH

- Principal investigator: Dr. Olga Kokiko-Cochran
- Studying the role of microglia and glucocorticoid receptor signaling in a mouse model of traumatic brain injury (TBI)
- Effects of post-injury stress on long-term functional recovery and cell-specific gene expression after TBI
- Microglia-specific gene therapeutics to improve outcomes after TBI

08/2017 - 12/2022 **Doctoral Candidate**, Southern Methodist University Department of Biology, Dallas, TX

- Principal investigator: Dr. Adam Norris
- Studied RNA regulation and genetic interactions in the nervous system
- Conducted a CRISPR/Cas9-based synthetic genetic interaction screen in *C. elegans*
- Analyzed *C. elegans* phenotypes using a wide variety of behavioral assays
- Analyzed transcriptome changes using whole-organism RNA sequencing

08/2015 - 05/2017 **Graduate Research Assistant**, Texas Christian University Department of Biology, Fort Worth, TX

- Principal investigator: Dr. Michael Chumley
- Studied effects of peripheral inflammation on Alzheimer's disease pathophysiology
- Collected and imaged mouse brains to analyze amyloid plaque formation
- Conducted flow cytometry on peritoneal cells, spleen, and blood samples to quantify lymphocyte populations in response to inflammation
- Quantified antibody production and amyloid beta with ELISA
- Analyzed hippocampal-dependent memory using behavioral testing

06/2014 - 06/2015 **Outreach Lab Technician**, UT Pathology, University of Texas Health Science Center Department of Pathology and Laboratory Medicine, Houston, TX

- Received and accessioned patient samples for pathology testing
- Prepared slides for pathologists and cytotechnologists

GRANTS AND FELLOWSHIPS

2025 **W.K. Kellogg Foundation Postdoc Travel Award (\$1000)**

2023 **CBI Pilot Grant (\$50,000)**
The Ohio State University Chronic Brain Injury Pilot Program
"Extracellular vesicle-based microglial reprogramming in a mouse model of traumatic brain injury"
PIs: Olga Kokiko-Cochran, Daniel Gallego Perez
Co-PI: Morgan Taylor

2023 **OK-PROS Postdoctoral Onboarding Supplement Award (\$5000)**
The Ohio State University

2016 **Adkins Summer Fellowship (\$3600)**
Texas Christian University

AWARDS AND HONORS

2025 **Ron Glaser Post-Doctoral Award**
Travel award (\$750) for oral presentation at IBBI Research Day

2022 **Winner of SMU Biology 1-Minute Speed Talk Competition**

2022 **Texas Genetics Society Graduate Presentation Award**
Awarded for poster presentation at TGS annual meeting

2019 **SMU Du Xin Memorial Research Award**, March 2019
Awarded for poster presentation at SMU Research Days event

PROFESSIONAL ASSOCIATIONS AND LEADERSHIP

Institute of Brain, Behavior, and Immunity Trainee Committee, Postdoc Member, 2025-present

Chronic Brain Injury Trainee Society (CBITS), Cofounder and Postdoc Ambassador, 2024-present

Ohio State University Chronic Brain Injury Program (CBI), Trainee Member, 2023-present

National Neurotrauma Society, Member, 2024-present

Society for Neuroscience, Member, 2016-present

Women in Bio, Member, 2019-present

Genetics Society of America, Member, 2019-2023

Texas Genetics Society, Member, 2022-2023

TEACHING EXPERIENCE

Guest Lecturer, The Ohio State University, Columbus, OH
Basic and Clinical Foundations of Neurological Disease (2025)
Lecture Topic: "The role of microglial glucocorticoid receptor in recovery after TBI"

Teaching Assistant, Southern Methodist University, Dallas, TX
Intro Biology Lab (2017-2020)
Assisted instructor with lab set up; helped students with assigned tasks during class; graded tests and quizzes

Teaching Assistant, Texas Christian University, Fort Worth, TX

Intro Biology Lab (2015-2016)

Weekly lesson-planning meetings with instructors on record and other TAs; independently led weekly labs; mentored undergraduate teaching assistants; graded tests and quizzes

Contemporary Issues in Biology (2016-2017)

Weekly lesson-planning meetings with instructors on record and other TAs; independently led weekly labs; mentored undergraduate teaching assistants; graded tests, quizzes, and group projects

MENTORSHIP EXPERIENCE

Graduate Students

Amber McCraw (Ohio State University, 2024-2025)

Hang Zhao (Southern Methodist University, Rotating graduate student 2018)

Rebekah Napier-Jameson (Southern Methodist University, Rotating graduate student 2018)

Undergraduate Students

Hunter Powell (Ohio State University, 2025-present)

Sonali Kumar (Ohio State University, 2024-present)

Angela Nueneubel (Southern Methodist University, 2019-2021); Medical School, Emory University

Joseph Lee (Southern Methodist University, 2018-2020); Graduate school, Emory University

Olivia Marx (Southern Methodist University, 2018-2019); Graduate school, Pennsylvania State University

Eleanore Rominger (Texas Christian University, 2016-2017); Medical school, Lincoln Memorial Univ DeBusk

Silas Henderson (Texas Christian University, 2016); Medical school, UT Southwestern Medical Center

High School Students

Christopher Shroyer (OSU Explorations in Neuroscience Summer Research Intern, June-August 2025)

Received Certificate of Excellence award for performance in lab and poster presentation

PUBLICATIONS

Peer-Reviewed Publications

1. **Taylor MA***, Boland R*, Houle S, Tapp ZM, Davis A, Cotter C, Sheridan JF, Godbout J, & Kokiko-Cochran ON. (2026). Traumatic brain injury and post-injury sleep fragmentation differentially alter the microglial transcriptome. *Frontiers in Immunology*, doi: 10.3389/fimmu.2025.1689773
2. **Taylor MA** & Kokiko-Cochran ON. (2024). Context is Key: Glucocorticoid receptor and corticosteroid therapeutics in outcomes after traumatic brain injury. *Frontiers in Cellular Neuroscience*, doi: 10.3389/fncel.2024.1351685
3. **Taylor M**, Marx O, & Norris AD. (2023). TDP-1 and FUST-1 co-inhibit exon inclusion and control fertility together with transcriptional regulation. *Nucleic Acids Research*, doi: 10.1093/nar/gkad665
4. Liang X*, **Taylor M***, Napier-Jameson R, Calovich-Benne C, & Norris AD. (2023). A conserved role for stomatin domain genes in olfactory behavior. *eNeuro*, doi: 10.1523/ENEURO.0457-22.2023
5. **Thompson M[†]**, Bixby R, Dalton R, Vanderburg A, Calarco JA, & Norris AD. (2019). Splicing in a single neuron is coordinately controlled by RNA binding proteins and transcription factors. *eLife*, doi: 10.7554/eLife.46726

Manuscripts in Preparation

6. Zimomra Z, Lepak C, Boland R, **Taylor M**, McCraw A, Schreiber H, Crescenze I, McTigue D, Kokiko-Cochran ON. (under review) Urinary tract infection exaggerates cognitive deficits and neuroinflammation following traumatic brain injury.
7. **Taylor MA**, McCraw A, Boland R, Kumar S, Fitzgerald J, Zhao F, Askwith C, Sheridan JF, Lenz KM, Vonder Haar, C, Godbout J, Kokiko-Cochran ON. (in-prep, expected submission Spring 2026). Microglia-specific deletion of glucocorticoid receptor impairs cognitive function and alters the cellular response to traumatic brain injury.

Published Conference Proceedings

8. White JD, Peterman JL, Hardy A, Eimerbrink MJ, Paulhus KC, **Thompson MA[†]**, Chumley MJ, & Boehm GW. (2017). Prior exposure to repeated peripheral LPS injections prevents further accumulation of hippocampal beta-amyloid. *Brain, Behavior, and Immunity*, doi: 10.1016/j.bbi.2017.07.056

*Denotes equal contribution

POSTERS AND PRESENTATIONS**Oral Presentations and Talks**

1. **Taylor M**, McCraw A, Boland B, Houle S, Fitzgerald J, Sheridan JF, Lenz KM, Vonder Haar C, Godbout J, Kokiko-Cochran O. (2025, November). *Microglia-specific loss of glucocorticoid receptor (Nr3c1) impairs cognition, exacerbates gliosis, and alters cortical and hippocampal transcriptomes 30 days after TBI*. The Ohio State University, Institute of Brain, Behavior, and Immunity (IBBI) Research Day, Columbus, OH.
2. **Taylor M** (2025, September). *Microglia-Specific Loss of Glucocorticoid Receptor Alters RNA Profiles of Multiple Hippocampal and Cortical Cell Types 30 Days After Traumatic Brain Injury*. The Ohio State University, NeuroFeedback Seminar Series, Columbus, OH.
3. **Taylor M**, Cross A. (2025, August). *Effects of photobiomodulation therapy on outcomes after sleep fragmentation in an Alzheimer's disease model*. The Ohio State University, Chronic Brain Injury Spark Tank, Columbus, OH.
4. **Taylor M** (2025, May). *Extracellular Vesicle-Based Microglial Reprogramming in a Mouse Model of Traumatic Brain Injury*. The Ohio State University, Neurotrauma Research in Progress Seminar (NTRIPS), Columbus, OH.
5. **Thompson M[†]** (2019, November). *Dissecting interactions across gene regulatory layers*. UT Southwestern Medical Center, RNA Club, Dallas, TX.
6. **Thompson M[†]**, Norris A. (2019, August). *C. elegans as a model for studying the nervous system*. Southern Methodist University, Departmental Seminar, Dallas, TX.

Select Poster Presentations

7. **Taylor M**, McCraw A, Boland B, Houle S, Fitzgerald J, Packer J, Sheridan JF, Lenz KM, Vonder Haar C, Godbout J, Kokiko-Cochran O. (2025, June). *Microglia-specific loss of glucocorticoid receptor exacerbates gliosis and dysregulates multiple neuronal and glial populations following TBI*. National Neurotrauma Society Annual Meeting, Philadelphia, PA.
8. **Taylor M**, Boland R, Houle S, Fitzgerald J, Kokiko-Cochran O. (2025, May) *The Role of Microglial Glucocorticoid Receptor in Cognitive Function and Gene Expression Following TBI*. Ohio State University Department of Neuroscience Research Day, Columbus, OH.

9. **Taylor M**, Boland R, Houle S, Fitzgerald J, Kokiko-Cochran O. (2025, March) *The Role of Microglial Glucocorticoid Receptor in Cognitive Function and Gene Expression Following TBI*. Ohio State University Chronic Brain Injury Research Day, Columbus, OH.
10. **Taylor M**, Houle S, Tapp Z, Sheridan J, Godbout J, Kokiko-Cochran O. (2024, June) *Tissue-specific bulk RNA sequencing reveals effects of traumatic brain injury and post-injury sleep fragmentation on the microglia transcriptome*. National Neurotrauma Society Annual Meeting, San Francisco, CA.
11. **Taylor M**, Houle S, Tapp Z, Kokiko-Cochran ON. (2024, May). *Tissue-specific bulk RNA sequencing reveals effects of traumatic brain injury and post-injury sleep fragmentation on the microglial transcriptome*. Ohio State University Department of Neuroscience Research Day, Columbus, OH.
12. **Taylor M**, Marx O, Neunuebel A, & Norris A. (2022, April). *Dissecting interactions across gene regulatory layers: Fust-1 and Tdp-1 coordinate with Ceh-14 to affect reproduction in C. elegans*. Texas Genetics Society, College Station, TX.
13. **Thompson M[†]**, Marx O, Neunuebel A, & Norris A. (2021, June). *Dissecting interactions across gene regulatory layers: FUST-1, TDP-1, and CEH-14 are coordinately required for gonad development*. International C. elegans Conference, online.
14. **Thompson M[†]**, Marx O, Neunuebel A., & Norris A. (2019). *Investigating genetic interactions between neuronal RNA binding proteins and transcription factors*. International C. elegans Conference, Los Angeles, CA.
15. **Thompson M[†]**, Paulhus K, White JD, Eimerbrink MJ, Moore HD, Boehm GW, & Chumley MJ. (2016, November). *Inflammation exacerbates natural anti-amyloid beta antibodies in a murine Alzheimer's disease model*. Society for Neuroscience Annual Meeting, San Diego Convention Center, San Diego, CA.

Presented by Others

16. Boland R, Houle S, **Taylor M**, Cotter C, Kokiko-Cochran O. (2025 November). *Microglia Depletion via PLX5622 Alters Inflammatory Gene Transcription Following Traumatic Brain Injury and Sleep Fragmentation*. Ohio State University Neurological Research Institute Annual Retreat, Columbus, OH.
17. Kumar S, **Taylor M**, Kokiko-Cochran O. (2025, November). *Microglial Glucocorticoid Receptor Loss Exacerbates Neuroinflammation Following Traumatic Brain Injury*. Ohio State University Second-year Transformational Experience Program (STEP) Expo, Columbus, OH.
18. Shroyer C, **Taylor M**, Boland R, Powell H, Patel R, Gallego-Perez D, Kokiko-Cochran O. (2025 August). *Evaluating Extracellular Vesicle-Based Microglial Reprogramming in a Mouse Model of Traumatic Brain Injury*. Ohio State University Explorations in Neuroscience Summer Research Internship Poster Session, Columbus, OH.
19. Zimomra Z, Lepak C, Boland R, **Taylor M**, McCraw A, Crescenze I, McTigue D, Kokiko-Cochran O. (2025 June). *Urinary Tract Infection Causes Exaggerated Cognitive Deficits Due to Increased Neuroinflammation Following Traumatic Brain Injury*. National Neurotrauma Society Annual Meeting, Philadelphia, PA.
20. McCraw A, **Taylor M**, Boland R, Houle S, Kokiko-Cochran O. (2025, March). *Cell-Specific Loss of Glucocorticoid Receptor Increases Neuroinflammation and Microglia Activity Following TBI 30 DPI*. Ohio State University Chronic Brain Injury Research Day, Columbus, OH.
21. Lopez S, Peterman JL, White JD, Hardy A, Eimerbrink MJ, Paulhus K, **Thompson M[†]**, Boehm GW, & Chumley M. (2018). *Previous exposure to LPS increases IgG and IgM while attenuating inflammatory response to A β accumulation in mouse hippocampus*. University of Texas – San Antonio College of Sciences Research Conference, San Antonio, TX.

22. White JD, Peterman JL, Hardy A, Eimerbrink MJ, Paulhus KC, **Thompson MA[†]**, Chumley MJ, & Boehm GW. (2017). Society for Neuroscience Meeting, Washington, DC.

23. Peterman JL, White JD, Eimerbrink MJ, Paulhus KC, **Thompson MA[†]**, Hayes HB, Boehm GW, & Chumley MJ. (2016, November). *Effects of Extended Isolation Stress on A β Production and Cognition in 5xFAD Transgenic Mice*. Society for Neuroscience Meeting, San Diego Convention Center, San Diego, CA.

24. Rominger ER, **Thompson MA[†]**, Reddy S, Boehm GW, & Chumley MJ. (2016, April) *Peritoneal B-1 cells offer resistance to LPS-induced amyloid beta production and may have therapeutic value against Alzheimer's Disease*. Michael and Sally McCracken Annual Student Research Symposium, College of Science and Engineering, Texas Christian University, Fort Worth, TX.

25. Sanders A, Paulhus K, White JD, **Thompson MA[†]**, Hayes H, Peterman JL, Boehm GW, & Chumley MJ. (2016, April). *The effect of the omega-three fatty acid, DHA, on raw 264.7 macrophages*. Michael and Sally McCracken Annual Student Research Symposium, College of Science and Engineering, Texas Christian University, Fort Worth, TX.

[†]Name changed from M. Thompson to M. Taylor in 2021

ACADEMIC SERVICE

2025 **Reviewer** for OSU Presidential Research Excellence (PRE) Accelerator and Catalyst grant proposals

2023, 2025 **Poster Judge** at OSU Neuroscience Research Institute Retreat

2025 **Panelist** at Summit Road High School Celebration of National STEM Day Conference

2025 **Postdoc Panelist** at Buckeye Neuroscience Graduate Invitational (BuNGI)

2025 **Category Judge** (Cellular and Molecular Biology) at Regeneron International Science and Engineering Fair Finals

2025 **Abstract Reviewer** for the Annual Symposium of the National Neurotrauma Society

2025 **Poster Judge** at OSU Hayes Research Forum

2024 **CBITS Academic Career Panel**
Organizer and cohost of panel for postdocs interested in careers in academia

2024, 2023 **Explorations in Neuroscience Summer Camp** High school outreach program
Lead hands-on sessions about mouse behavior testing and tissue processing

2022 **Poster Judge** at SMU Research and Innovation week

2022 **Category Judge** for Dallas Regional Science and Engineering Fair

2021 **Panelist** for "What Can You Do With a Major In Biology?" program at SMU

LABORATORY AND ANALYTICAL SKILLS

Laboratory Techniques: Immunohistochemistry, cell culture, cell transfection, rodent brain microdissection, stereotaxic rodent surgery, RNA extraction, RNA sequencing library prep, ELISA, molecular cloning, qRT-PCR, standard PCR, gel electrophoresis, rodent colony breeding/management, rodent behavior, *C. elegans* maintenance and behavior, confocal microscopy, flow cytometry

Bioinformatics and Analytical Skills: Statistical analysis (SPSS, GraphPad Prism), programming in RStudio and Python, differential gene expression analysis (Seurat, DESeq2), RNA splicing analysis (JUM), high performance computing

REFERENCES

Dr. Olga Kokiko-Cochran

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Dr. Edward Glasscock

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Additional references available upon request