

Mackenzie R. Prichard, Ph.D.

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EDUCATION

Ph.D. Neuroscience and Animal Behavior, Emory University (2023)

M.A. Neuroscience and Animal Behavior, Emory University (2021)

B.S. Ecology and Organismal Biology, University of Montana (2017)

RESEARCH

Postdoctoral Research Fellow (2024-present)

Felege Lab – Department of Biology, University of North Dakota, Grand Forks, ND

Select techniques: spatial data analysis, R, RStudio, Python, Git, Motus wildlife tracking, capture and handling of waterfowl (blue-winged teal, mallard) and gulls (ring-billed gull, Franklin's gull), capture and handling of songbirds (Bobolink), UAS pilot license, safe handling of explosives & rocket net training, swim-in traps for waterfowl, walk-in land traps for waterfowl, Adobe Creative Suite

Graduate Researcher (2018 – 2023)

Maney Lab – Department of Psychology, Emory University, Atlanta, GA

Dissertation: "Distinct roles for expression of vasoactive intestinal peptide in the behavioral polymorphism in white-throated sparrows (*Zonotrichia albicollis*)"

Master's Thesis: "*Cis*-regulatory methylation of the *VIP* gene in the white-throated sparrow (*Zonotrichia albicollis*)"

Select techniques: simulated territorial intrusion, nest searching, behavioral observation, scoring animal behavior from video (BORIS), tissue collection (e.g., whole brains, pituitaries), RT-qPCR, multiplex qPCR, PCR, primer/probe design, gel electrophoresis, cryo-preservation, microdissection/micro-punch techniques, bisulfite conversion, DNA/RNA extraction from blood/tissue, cDNA conversion, NGS, bioinformatic analysis of sequence data, HPC, Python, Anaconda, R, RStudio

Avian Research Technician (2017-2018)

Breuner Lab – Department of Biological Sciences, University of Montana

Select techniques: baseline and summit metabolic measurements on passerines, aerial invertebrate sampling, invertebrate identification, captive animal welfare, mist netting, fecal sampling

Undergraduate Researcher (2016)

Breuner Lab – Department of Biological Sciences, University of Montana

Honors Thesis: "Glucocorticoids and parental effort in tree swallows (*Tachycineta bicolor*)"

Select techniques: ELISA for corticosterone, behavioral observation, nest recording, parental behavior scoring, monitoring nestling growth, nest box trapping, bird banding, blood sampling, capture-handling-restraint stress challenge, R, RStudio

Citizen Science Projects (2015-2018)

Wolverine Watch: Defenders of Wildlife – Bitterroot Valley, Montana (2016-2018)

Responsible for maintaining a game camera site to survey for meso-carnivores (e.g., wolverines) from remote locations during winter months; duties included regularly replenishing bait, collecting fur samples, and collecting images from game cameras

Conservation in South Africa: Int'l Student Volunteers - Limpopo, South Africa (2015)

Conducted biodiversity assessments through bird point counts, vegetation biomass metrics, and tree identification.

Avian Research Assistant – MPG Ranch, Bitterroot Valley, Montana (2015)

Helped with surveying for Lewis's woodpeckers and common poorwills, trapping common poorwills, and locating saw-whet owl nests

Bitterroot Wildlife Intern (2014)

Ecology Project International, Missoula, MT & MPG Ranch, Florence, MT (2014)

Helped with behavioral observations, trapping, banding, and attaching GPS loggers as part of the Lewis' woodpecker project

PUBLICATIONS

- Prichard, M.R. (2025). Evolution of behavior: genotype to phenotype. In: Thompson, G.J., (Ed.), Encyclopedia of Animal Behavior, 3rd ed. Academic Press. <https://doi.org/10.1016/B978-0-443-29068-8.00155-0>
- Prichard, M.R., Grogan, K.E., Merritt, J.R., Root, J., Maney, D.L. (2022). Allele-specific *cis*-regulatory methylation of the gene for vasoactive intestinal peptide in white-throated sparrows. *Genes, Brain, and Behavior*, 21(8):e12831. <https://doi.org/10.1111/gbb.12831>
- Maney, D. L., Merritt, J. R., Prichard, M. R., Horton, B. M., & Yi, S. V. (2020). Inside the supergene of the bird with four sexes. *Hormones and Behavior*, 126, 104850. <https://doi.org/10.1016/j.yhbeh.2020.104850>
- Jimeno, B., Prichard, M. R., Landry, D., Wolf, C., Larkin, B., Chevion, Z., & Breuner, C. (2020). Metabolic Rates Predict Baseline Corticosterone and Reproductive Output in a Free-Living Passerine. *Integrative Organismal Biology*, 2(1), obaa030. <https://doi.org/10.1093/iob/obaa030>
- Horton, B.J., Michael, C.M., Prichard, M.R., & Maney, D.L. (2020). Vasoactive intestinal peptide as a mediator of the effects of a supergene on social behaviour. *Proceedings of the Royal Society B: Biological Sciences*, 287(1924), 20200196. <https://doi.org/doi:10.1098/rspb.2020.0196>

CONFERENCE PRESENTATIONS

- Prichard, M.R., Brandt, L., Salander, B., Rush, N., Pfeiffer, M.B., Blackwell, B.F., Ellis-Felege, S.N. (2025). Assessing the effectiveness of applying UAS hazing near a Part-139 airport. Aviation Wildlife Management Conference, Portland, OR. **(Talk)**
- Prichard, M.R., Fraccarioli, I., Angelier, F., Maney, D.L. (2025). Prolactin and parental care in a sparrow with a behavioral polymorphism. Society of Integrative and Comparative Biology. Atlanta, GA. **(Talk)**
- Prichard, M.R., Brandt, L., Salander, B., Rush, N., Pfeiffer, M.B., Blackwell, B.F., Ellis-Felege, S.N. (2024). Avian behavioral responses to UAS hazing near a U.S. part-139 airport. Aviation Wildlife Management Conference, Minneapolis, MN. **(Talk)**
- Prichard, M.R., Fraccarioli, I., Maney, D.L. (2023). Allele-specific expression of vasoactive intestinal peptide in brain regions with distinct roles in a behavioral polymorphism. Behaviour, Bielefeld, Germany. **(Talk)**
- Prichard, M.R., Fraccarioli, I., Maney, D.L. (2023). Allele-specific expression of VIP mRNA in two brain regions with distinct roles in a behavioral polymorphism. Animal Behavior Society, Portland, OR. **(Poster)**
- Prichard, M.R., Merritt, J.R., Root, J., Grogan, K.E., Maney, D.L. (2021). Epigenetic regulation of the VIP gene in a polymorphic songbird. Society of Integrative and Comparative Biology, Virtual. **(Talk)**
- Prichard, M.R., Larkin, B., Fylling, M., Breuner, C.W. (2017). Glucocorticoids and parental effort in tree swallows (*Tachycineta bicolor*). Society of Integrative and Comparative Biology, New Orleans, LA. **(Poster)**
- Prichard, M.R., Larkin, B., Fylling, M., Breuner, C.W. (2017). Glucocorticoids and parental effort in tree swallows (*Tachycineta bicolor*). Western Region Honors Conference. Ashville, OR. **(Talk)**
- Prichard, M.R., Larkin, B., Fylling, M., Breuner, C.W. (2017). Glucocorticoids and parental effort in tree swallows (*Tachycineta bicolor*). University of Montana Conference for Undergraduate Research. Missoula, MT. **(Talk)**
- Prichard, M.R., Smith, M., McIntosh, M., Austin, B., Crisp, K.(2017). Improving landowner access to effective weed management methods. University of Montana Conference for Undergraduate Research.. Missoula, MT. **(Talk)**.
- Prichard, M.R., Larkin, B., Fylling, M., Breuner, C.W. (2017). Glucocorticoids and parental effort in tree swallows (*Tachycineta bicolor*). MPG Ranch Research Conference. Missoula, MT. **(Poster)**

AWARDS & RECOGNITIONS

- Founders Memorial Poster Paper Award (2023); Animal Behavior Society – This award is for an outstanding poster presented at the ABS annual meeting.
- Three-Minute Thesis Finalist (2023); Emory University, Laney Graduate School – This is a competition for graduate students to present a summary of their research in 3 minutes or less to an audience of non-experts.
- DNNBS Best Student Presentation Finalist (2021); Society of Integrated and Comparative Biology – Among the students selected to present in the DNNBS Best Student Presentation session.
- Outstanding Senior Award (2017); University of Montana, Department of Biology – An award granted to one graduating senior per department, per major.

- Best Oral Presentation – Life Sciences (2017); University of Montana Conference for Undergraduate Research – An award granted to one oral presentation per discipline.

TEACHING

Courses

BIOL 426 - Birds and Mammals; Co-Instructor, University of North Dakota (2025)
 BIOL 432 - Wildlife Techniques in Population Assessments; Guest Lecturer & Lab Instructor, University of North Dakota (2024)
 PSYC 223 - Drugs and Behavior; Teaching Assistant, Emory University (2022)
 PSYC 320 - Animal Behavior; Teaching Assistant, Emory University (2021)
 PSYC 200 - Research Methods; Teaching Assistant & Lab Instructor, Emory University (2021)
 PSYC 385 - Neuroscience, Evolution, Religion, and the Human Experience; Teaching Assistant, Emory University (2020)
 PSYC 111 - Introduction to Psychology; Teaching Assistant & Guest Lecturer, Emory University (2019)

Miscellaneous

Emory College Online Teaching Strategies (2020) - *Emory University, Atlanta, GA* – Training on online classroom tools to facilitate transition to online teaching
 Teaching Assistant Training and Teaching Opportunity Program (2019) - *Emory University, Atlanta, GA* – Training for graduate students about teaching pedagogy, course planning, and various classroom tools
 Field Instructor (2016-2017) - *Ecology Project International, Missoula, MT & Yellowstone National Park* - Taught place-based curriculum covering conservation, wildlife biology, ecology, and outdoor safety
 After School Spanish Class for Lewis & Clark Elementary (2013) – *Sentinel High School, Missoula, MT* – Helped to create curriculum and teach Spanish to elementary students in an after school program

MENTORSHIP

Master's Students

Bex Cecil, University of North Dakota (2025 – Present) – Master's Committee Member
 Levin Brandt, University of North Dakota (2024-2025) – Master's Committee Member

Undergraduate Students

Nicholas Rush, University of North Dakota (2024-2025)

Research Assistants – *University of North Dakota*

Brody Salander (2024-2025); Ethan Halstead (2025); Lydia Wilson (2024-2025); Jacob Fisher (2024-2025)

Research Assistants – *Emory University*

Reeya Bazari (2021-2023); Irfan Masud (2021-2023); Lauren Chronnister (2021); Wren Corvus (2021); Emilia Skogen (2021); Edwin Harris (2019); Michelle Moyer (2019); Rachel Weisbeck (2019)

SERVICE & LEADERSHIP

- Peer reviewer – Animals, Conservation, Drones, Earth Stewardship, Ecosphere, Journal of Avian Biology, Journal of Wildlife Management, Wild
- Graduate Student Diversity Committee Chair (2020 – 2023), Emory University
- Graduate Research and Interdisciplinary Team of Scientists (GRITS) Vice President (2018-2021) & President (2021-2022), Emory University
- Association of Women in Science Volunteer (2019-2020), Emory University
- Leadership U Training (2017), University of Montana
- Women's Leadership Initiative Forum (2017), University of Montana
- Student Evaluation Committee (2016), Division of Biological Sciences, University of Montana
- Global Leadership Initiative Fellow (2013-2017). University of Montana