Erika A. Mehrhoff

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Education

DOCTOR OF PHILOSOPHY | UNIVERSITY OF COLORADO BOULDER | ANTICIPATED GRADUATION MAY 2025

- Department: Integrative Physiology and Institute for Behavioral Genetics
- Starting Summer 2022

MASTER OF SCIENCE | UNIVERSITY OF COLORADO BOULDER | GRADUATED MAY 2022

- Department: Integrative Physiology and Institute for Behavioral Genetics
- Cumulative GPA: 4.0
- Related coursework: Quantitative Statistical Genetics, Advanced Statistics and Research Methods in Integrative Physiology, Statistical Programming in R, Physiological Genetics and Genomics

BACHELOR OF SCIENCE | COLORADO STATE UNIVERSITY | GRADUATED MAY 2019

- Major: Biomedical Sciences
- Minor: Microbiology
- Cumulative GPA: 3.5
- Related coursework: Physiology, Statistics, Cell Biology, Genetics, Biochemistry, Microbiology, Immunology, Pharmacology, Virology, Microbial Genetics, Medical Bacteriology, Neuroanatomy, and Human Gross Anatomy

Research Experience

GRADUATE RESEARCH ASSISTANT | GENETICS OF SUBSTANCE ABUSE LAB- CU BOULDER (BOULDER, CO) | JUNE 2020- PRESENT

- Dr. Marissa Ehringer's Genetics of Substance Abuse laboratory researches genetic components of different substance use disorders and mental health disorders.
- Anxiety-related behavioral testing using benzodiazepines on mice inbred for High and Low activity in the Open-field test.
- Behavioral testing looking at sensitivity and tolerance to ethanol using a GCKR Human SNP RS1260326 (P446L) mouse model of alcohol behaviors and metabolism.
- RNA sequencing analysis looking at genetic differences in estrus cycle effects on the rat brain transcriptome.

RESEARCH ASSOCIATE | BIOPLX MICROBIOMICS (BOULDER, CO) | MAY 2019- MAY 2020

- Microbiomics and synthetic biology
- BioPlx creates non-antibiotic treatments for bacterial infections to cure patients while preventing resistance to these drugs. Specifically, the company is working on a treatment and prevention of the recurrence of MRSA.
- Genetic engineering: Construct bacterial strains with gene edits and used DNA sequencing results and assays to qualify them.
- CRISPR was used for some experiments.

RESEARCH ASSISTANT | HANDA NEUROSCIENCE LABORATORY AT CSU (FORT COLLINS, CO) | 2016-2018

- Assisted a PhD student in Dr. Robert Handa's lab with her experiments aimed at understanding stress hormones in mice.
- Acquired basic lab skills and practical knowledge about the fields of neuroscience and neuroendocrinology.
- Used PCR to analyze mRNA levels and florescence-tagged neurons to look at the colocalization of expression of glucocorticoid receptors in corticotropin-releasing hormone neurons.

RESEARCH INTERN | BOLDER BIOTECHNOLOGY (BOULDER, CO) | SUMMER 2018

- Bolder BioTechnology uses protein engineering technologies to create longer-acting and more potent human protein pharmaceuticals.
- Worked on my own project which involved preparation of a site-specific PEGylated mouse interferon gamma protein for testing in mouse disease models.
- Expressed the protein in bacteria, modified it with polyethylene glycol (PEG), and purified the unPEGylated and PEGylated proteins using column chromatography.

Teaching Experience

GRADUATE TEACHING ASSISTANT | CU BOULDER (BOULDER, CO) | 2020-PRESENT

- IPHY 5800- Advanced Statistics and Research Methods (Spring 2022)
- IPHY 3280- Intro to Data Science and Biostatistics (Fall 2021)
- IPHY 3415- Human Anatomy Laboratory (Summer 2021)
    - Cadaver dissector as well
- IPHY 3417- Virtual Human Anatomy Laboratory (Fall 2020 and Spring 2021)

Publications

Booher, W. C., Hall, L. A., Thomas, A. L., **Mehrhoff, E. A**., Reyes Martínez, G. J., Scanlon, K. E., ... & Ehringer, M. A. (2021). Anxiety-related defensive behavioral responses in mice selectively bred for High and Low Activity. *Genes, Brain and Behavior*, *20*(7), e12730.

Associations

GRADUATE

- International Behavioural and Neural Genetics Society (2021-present)

UNDERGRADUATE

- Biomedical Student Association- promotes educational opportunities in the biomedical sciences (2016-2019)
- Beta Beta Beta Biological Honor Society- recognizes high achieving students in the life sciences (2017-2019)