

BRANDON A. FRICKER

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EDUCATION

In progress: Ph.D. Neuroscience and Animal Behavior

8/2019–Pres.

Advisor: Dr. Aubrey M. Kelly

Emory University, Atlanta, GA 30307

M.S. Neuroscience and Animal Behavior

8/2019- 4/2021

Advisor: Dr. Aubrey M. Kelly

Emory University, Atlanta, GA 30307

B.S. Behavioral Neuroscience & B.S. Social Psychology

8/2015–5/2019

Advisor: Dr. Julie S. Haas

Lehigh University, Bethlehem, PA 18015

GPA: 3.97

RESEARCH EXPERIENCE

Research Interests

To understand how circuits and microcircuits in the brain result in the extraordinary amount of diversity in social behaviors observed across taxa.

Coordination, gregariousness, Inter-group interactions, pheromones, decision making, and social motivation are of particular interest.

Comparative Social Neuroscience Lab

8/2019–Pres.

Emory University, Atlanta, GA

Graduate Student | Dr. Aubrey M. Kelly

- Examining plasticity in nonapeptide system connectivity using prairie voles
- Using fiber photometry to record real-time neural activity during social behavior
- Characterizing social behaviors of the African spiny mouse
- Utilizing chemogenetics and optogenetics to map prosocial neural circuits
- Designing a novel behavioral assay for measuring coordinated cooperation

Electrical Synapse Neurophysiology Lab

8/2016–8/2019

Lehigh University, Bethlehem, PA

Honors Student & Research Assistant | Dr. Julie S. Haas

- Examined activity dependent plasticity of electrical synapses in rat brain slices via electrophysiology and optogenetics (manuscript under revision)

St. Luke's Hospital

5/2017–8/2017

Bethlehem, PA

Research Intern

- Assisted in conducting a clinical study examining the benefits of new app on weight loss.
- Gained experience with statistical analysis of research data using SPSS

ADDITIONAL SKILLS AND TRAINING

Technical Skills: Animal Handling | Husbandry | Behavioral Scoring | Neurosurgeries | Perfusion | Euthanasia | Brain Dissection | Brain Slicing via Cryostat & Vibratome | Fluorescent Immunohistochemistry | iDISCO+ | fiber Photometry | Imaging via Fluorescent & Lightsheet Microscopes | Cell Counting | Electrophysiology | Dual Whole Cell Patch Clamping

Software: Matlab | GIMP | SPSS | BORIS | SLEAP | Cell Profiler

Languages: R | Matlab | Python

PUBLICATIONS (reverse chronological order)

A. In Preparation or Submitted:

1. Kelly A.M., Fricker B.A., Wallace K.J. (2022) Protocol for multiplex fluorescent immunohistochemistry in free-floating rodent brain tissues. *STAR protocols*, 3(4).
2. Abreu J.A.G., Rosenberg A.E., **Fricker B.A.**, Wallace K.J., Seifert A.W., Kelly A.M. (2022) Species-typical group size differentially influences social reward neural circuitry during nonreproductive social interactions. *Isience*, 25(5).
3. **Fricker B.A.**, Seifert A.W., Kelly A.M. (2022) Characterization of social behavior in the spiny mouse, *Acomys cahirinus*. *Ethology*, 00, 1-15.
4. **Fricker B.A.**, Heckman E., Cunningham P.C., Wang H., Haas J.S. (2021) Activity-dependent long-term potentiation of electrical synapses in the mammalian thalamus. *The Journal of Neurophysiology*, 125(2), 476-488.

PRESENTATIONS (reverse chronological order)

7. **Fricker B.A.**, Kelly A.M. (2022) Neural Circuitry of Gregariousness in Spiny Mice (*Acomys cahirinus*). Keystone Symposium: Neural Circuitry of Social Behavior. Daejeon, South Korea. (poster).
6. **Fricker B.A.**, Kelly A.M. (2022) Neural Circuitry of Gregariousness in Spiny Mice (*Acomys cahirinus*). Annual Meeting for the Society of Behavioral Neuroendocrinology. Atlanta, GA. (poster)
5. **Fricker B.A.**, Kelly A.M. (2021) Neural Circuitry of Gregariousness in Spiny Mice (*Acomys cahirinus*). Learning about Laney Showcase. Emory University, Atlanta, GA. (poster)
4. **Fricker B.A.**, Kelly A.M. (2021) Neural Circuitry of Gregariousness in Spiny Mice (*Acomys cahirinus*). Annual Meeting for the Society of Behavioral Neuroendocrinology. Online. (poster and Data Blitz)
3. **Fricker B.A.**, Kelly A.M. (2020) Characterization of Social Behavior in the African Spiny Mouse (*Acomys dimidiatus*). Annual Meeting for the Animal Behavior Society. Online. (lightening talk)
2. **Fricker B.A.** (2019) Long Term Potentiation of Electrical Synapses. 12th Department of Psychology Annual Research Festival. Emory University, Atlanta, GA. (poster)
1. **Fricker B.A.** (2018) Long Term Potentiation of Electrical Synapses. Annual Meeting for the Society for Neuroscience. San Diego, CA. (poster)

GRANTS, HONORS, AND AWARDS

National Defense Science and Engineering Graduate Fellowship (NDSEG)	2021- Pres.
Laney Graduate School Fellowship	2019 – 2024
Dean’s List at Lehigh University	2015 – 2019
Undergraduate Research Grant	2017 – 2018
Lehigh University Student Opportunity Fund Grant	2018
Epstein Family Undergraduate Research Grant	2018 – 2019

TEACHING EXPERIENCE

Peer Tutor Lehigh University, Bethlehem, PA • Tutor students in Organic Chemistry 1 & 2 and Introductory Biology	2017 – Pres.
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OUTREACH AND LEADERSHIP

Pipeline

2020 – Pres.

Graduate Mentor | Emory University, Atlanta, GA

- Assist underprivileged high school students in the Atlanta metro area with preparing for applying for college
- Teach students weekly about important topics in neurology and public health

St. Luke's IRB

2017 – 2019.

Board Member | Bethlehem, PA

- Review and vote on upcoming clinical studies to be conducted at St. Luke's Hospital

PROFESSIONAL MEMBERSHIPS

Society for Behavioral Neuroendocrinology

2019 – Pres.

Society for Neuroscience

2018 – Pres.

Animal Behavior Society

2020 – Pres.