

Philosophy: My teaching and mentoring philosophy focuses on inclusive activity-based engagement and open communication that supports an individual's holistic growth. Drawing from my own experiences with imposter syndrome, I strive to provide a welcoming environment where students and mentees feel comfortable asking questions. Additionally, my professional experiences outside of academia have shaped my interactions with students. From my work with the disabilities community, I have adapted my teaching style to incorporate multiple modalities and explanations to engage students with different backgrounds and skill levels, and I have gained patience and emotional acuity to provide a more holistic approach to mentoring. As a musician, I have learned the importance of preparation for presentations and strive to provide clear and interesting content in all of my classes. Thus, I aim to support learning by: **1) using “student-centered” teaching 2) demonstrating key concepts using an “I do, we do, you do” approach, and 3) emphasizing individualized professional development in my mentorship style.**

Teaching: I have now taught extensively (8 courses total) across three different institutions (Cornell University, University of Chicago, and University of Colorado Boulder) and disciplines (biological engineering, neurobiology, and applied mathematics). I have taught “Calculus 1 for Engineers” four times, which has allowed me to refine my methodologies and establish a strong basis for teaching computational courses to a variety of students. As part of a team for this large class (up to 900+ students/semester), I have gained knowledge on course coordination, preparation, and identifying struggling students. As this course is designed for undergrads, I taught to a broad audience with varying skill sets and apply an “example-based, question-driven” teaching strategy. I also incorporate discussions about the structure of college-level courses and university life into my lectures in order to bring transparency to all students, reinforcing my philosophy to nurture a student's holistic growth. Additionally, I have guest lectured for courses, including “Computational Neuroscience”, “Computational Methods in Cognitive Neuroscience”, and “Signal Processing for Neuroscientists”. Beyond classroom teaching, I initiated a professional development seminar series that has been made available to all of CU's campuses (Denver, Boulder, and Anschutz) through CU's Center for Teaching and Learning. Based on my experiences with professional development through the BRAINS fellowship, the goal of this series is to address the dearth of programs focused on non-research activities that impact our productivity and happiness in science and academia.

Mentorship: I have been a mentor to over 18 graduate students, medical residents, NeuroMatch Academy trainees and members of our Association for Women in Mathematics (AWM). As a mentor, I strive to be a resource, identifying relevant opportunities and listening to concerns or questions. I encourage mentees to find a team of mentors who can support all aspects of their growth and follow up with them to ensure that their needs have been met. Recently, I developed a postdoc-student mentoring program for CU Boulder's Applied Math department, creating materials, coordinating workshops, and organizing activities to help students find and be successful in their postdocs. Additionally, my outreach work has allowed me to act as a mentor for younger students. As a guest scientist at programs including Sisters 4 Science and the Lang Youth Medical Program, I have both encouraged students to pursue their scientific interests and offer insight into what a job in scientific research entails. Through my volunteer work at museums, including the Museum of Science and Industry in Chicago and the Denver Botanic Gardens, I have been able to spread awareness about scientific professions to a broad audience of visitors. Finally, through my tutoring endeavors with teens in Chicago, I have built mentoring relationships that encourage an interest in science and help build a solid foundation.

In all my mentorship endeavors, I strive to move beyond research-only advice and incorporate discussions of diversity, inclusion, and overall well-being. Having personally benefitted from exercises such as Individualized Development Plans (IDPs), I encourage my mentees to perform introspective “checks” about their goals and priorities and work with them to develop a plan for achievement. I believe that this approach is critical for the growth and success of mentees from diverse backgrounds. To this end, I have begun compiling relevant articles and resources on academic diversity and personal and professional development and made the compilation public for others in academia on my website, tahraeissa.com.

Future Plans: As an instructor, I plan to implement a “backward design” strategy, which focuses on identifying the desired outcomes then designing multiple activities to motivate these goals, to develop course curricula. This “student-centered” strategy will use a diverse set of interactive course work to engage students in multiple ways and introduce the same concept multiple times to foster independence with the skills (e.g., “I do, we do, you do” approach), supporting students from a variety of backgrounds in learning to perform rigorous statistical and analytical approaches for neuroscience. To this end, I would be interested in teaching courses on computational methods for neuroscience and psychology. In addition to formal teaching, I am interested in expanding my career development workshops and journal clubs on campus and online.