

## Thank you for your interest in graduate training in the Changing Brain Lab!

**Planned projects:** We are interested in how children's experiences influence their brain plasticity and development. We take an interdisciplinary approach, working at the intersection of biology, neuroscience, psychology, and education. Our questions have a clear translational goal: to reduce inequities in children's well-being. We have two major grants in place to support data acquisition efforts in the lab. An [NSFCAREER](#) grant will fund a study on how structural and functional brain development predicts learning in young children. We'll also collect data on daily fluctuations in children's learning, asking how experiences of stress and sleep influence within-child variability in learning and cognition. A grant from the William Penn Foundation will support a randomized controlled trial of an intensive home-visiting intervention with behavioral and neuroimaging outcome measures. We also have several data analysis projects working with rich behavioral and neuroimaging datasets collected in the lab and through consortia (e.g., [ABCD](#), [HBCD](#)).

**Programs:** We accept students through two graduate programs: the [Psychology Graduate Group](#) and the [Neuroscience Graduate Group](#). These programs differ in a number of ways, so please read through their information before deciding. It is possible to apply to both. In the Psychology program, students are admitted directly to one lab. In the Neuroscience program, students do three rotations in the first year and then choose a lab. The coursework and graduation requirements are also quite different. Dr. Mackey is not a licensed clinical psychologist, but can be the research advisor of students in the clinical program. Both programs have admissions committees, so Dr. Mackey does not decide who is admitted. Both committees weigh research products (i.e., papers, conference presentations), undergraduate records, clarity of research goals, and research fit with faculty. Neither program requires GRE scores.

**Preferred qualifications:** We are looking for students who share our curiosity about child development, and our commitment to making children's lives better. Students will be most successful if they have had significant research training. Most students do full-time research for two years before graduate school to develop their research questions and build up their technical skills (e.g., R, Python). We strongly suggest that eligible candidates apply for the [NSF Graduate Research Fellowship Program](#). Several of our students have won these awards, in part by emphasizing the relevance of their research to math and science education. You can request a copy of a successful application from current students Cassidy McDermott ([cassmcd@sas.upenn.edu](mailto:cassmcd@sas.upenn.edu)) or Austin Boroshok ([boroshok@sas.upenn.edu](mailto:boroshok@sas.upenn.edu)). Please note that the NSF does not fund health-related research. Dr. Mackey would be happy to provide feedback on a draft of this proposal, even if the proposed work is in a different lab.