BRIDGE
Brain Imaging, Development, Genetics

STANFORD
SCHOOL OF MEDICINE

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Position: Postdoctoral Researcher in Neuroimaging

The Bridge Lab, led by Dr. Tamar Green at Stanford University, is dedicated to researching the effects of altered genetics on brain development and neuropsychiatric conditions, with the aim of improving children's mental health and development. Our research focuses on identifying mechanistic targets for medical interventions through clinical research. We are committed to translational research that provides a deeper understanding of the brain and can enhance the lives of those affected by neuropsychiatric conditions.

This position offers mentorship from faculty with deep expertise in neuroimaging, genetics, and neurodevelopment, along with access to cutting-edge imaging technology and computational resources. You will have opportunities for professional development, including conference travel and grant writing experience, within a collaborative environment that bridges basic neuroscience and clinical research. Beyond the primary neuroimaging trial, you will have the opportunity to collaborate on projects involving the Human Neural Circuitry program and work with Dr. Karl Deisseroth's lab on genetic models of cutting-edge intracranial electrophysiology.

We are seeking a postdoctoral fellow to lead the neuroimaging component of a longitudinal, pediatric drug trial in Neurofibromatosis 1 (NF1). As a key member of our team, you will acquire and analyze multimodal MR images from children with NF1 using the state-of-the-art Siemens Cima X scanner located at Stanford's Lucas Center for Imaging. This position offers opportunity to work at the intersection of translational neuroscience, clinical research, and advanced neuroimaging methods while directly contributing to improved outcomes for children with neurodevelopmental conditions.

Core Duties:

You will oversee all aspects of neuroimaging data collection and analysis for this clinical trial. Specific responsibilities include:

- Collaborating with staff and families to ensure high-quality multimodal scans are acquired at each time point, adapting protocols as needed to accommodate pediatric participants.
- Maintaining longitudinal fidelity across the study by implementing rigorous quality-control procedures and ensuring consistency in acquisition parameters.
- Applying standard and novel image-analysis pipelines and statistical techniques for individual, longitudinal, and group-level analyses.
- Coordinating with the behavioral team to integrate cognitive and behavioral testing results with imaging data at each study visit.
- Managing a REDCap database containing key neuroimaging, behavioral, and clinical measures.
- Contributing to manuscript preparation and presenting findings at scientific conferences.

Education:

PhD required in engineering, neuroscience, biostatistics, bioinformatics, computer science, or a related quantitative field. We will consider candidates with a PhD in psychology or related disciplines who have a strong technical background in neuroimaging methods, as well as candidates with a PhD in MR-related subject matter.

Required Technical Skills:

- Neuroimaging acquisition protocols and multimodal post-processing pipelines (structural MRI, diffusion MRI, functional MRI, and/or MR spectroscopy).
- Longitudinal statistical analysis methods, including approaches for handling missing data and mixed-effects models.
- Proficiency with programming and statistical software packages such as R, Python, and MATLAB.
- Experience with version-control systems (e.g., Git) and reproducible research practices.

Preferred Technical Skills:

- Experience with neuroimaging-processing software packages such as FSL, FreeSurfer, ANTs, SPM, AFNI, or similar tools.
- Familiarity with MR sequence programming on Siemens or GE platforms.
- Knowledge of advanced preprocessing techniques including geometric unwarping, multi-site harmonization and registration methods, and longitudinal quality-control frameworks.
- Experience with diffusion MRI analysis (tractography, microstructural modeling).
- Familiarity with functional-connectivity analysis and graph-theory approaches.
- Experience with the Allen Brain Atlas or similar neuroanatomical reference databases.
- Background in EEG acquisition and analysis.
- Familiarity with machine-learning or artificial-intelligence approaches applied to neuroimaging data.

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Preferred Interpersonal and Clinical Skills:

- Experience working with children and families, particularly those with neurodevelopmental disorders.
- Understanding of cognitive and behavioral assessment tools commonly used in pediatric research.
- Ability to communicate complex technical concepts to diverse audiences, including families, clinicians, and administrative staff.

Other Requirements:

- Willingness to travel to conferences and potential collaborating sites.
- Flexibility to work occasional non-standard hours to accommodate participant scheduling needs.
- Ability to work both independently and as part of a collaborative, multidisciplinary team.
- Strong organizational skills and attention to detail.

How to Apply:

Please submit the following materials to bridgelab@stanford.edu with the subject line "Imaging Postdoc Application":

- Curriculum vitae
- Cover letter outlining your relevant experience, research interests, and how this position aligns with your career goals
- Availability to start
- Visa sponsorship requirements (if applicable)
- Names and contact information for three references

Applications will be reviewed on a rolling basis until the position is filled.