

Postdoctoral Research Associate in Neuroscience and Neuroengineering Brown University and Massachusetts General Hospital

As part of our ongoing clinical trials of an intracortical neural interface system ([BrainGate](#)), we seek enthusiastic individuals with substantial experience in high-resolution neurophysiology, creative and fundamental new approaches in machine learning and/or neuroengineering to join our internationally recognized research team. Our lab and consortium focus on developing brain-computer interfaces that will restore communication and upper limb function for people with severe speech and motor impairments, including people with spinal cord injury, stroke, or ALS. Throughout our clinical research, we also conduct fundamental human neuroscience research in movement control, cognition, and attention.

As a highly multidisciplinary endeavor, our team includes a tight-knit collaborative group of neuroscientists, engineers, computer scientists, mathematicians, and clinicians. Opportunities are available for each team member to interact directly with clinical trial participants. Multiple available research projects, shaped to the researcher's skills and interests, include (but are not limited to):

- Analyzing neuronal ensemble activity, including how kinematics and dynamics of intended movement are encoded in cortical single units, multi-unit activity, and local field potentials toward the robust decoding of intended movement.
- Harnessing the rich information embedded in intracortical signals for the development of communication interfaces.
- Developing innovative real-time signal processing and decoding strategies to improve the control of multidimensional effectors across different contexts.
- Creating leading approaches to decoding intended speech from cortical signals.

Candidates must have strong neuroscientific, mathematical, and computational skills, including proficiency in MATLAB, Simulink, and/or Python, as well as demonstrated skills in peer-reviewed manuscript preparation. Preferred educational background is a PhD in neuroscience, BME/neural engineering, EE, CS, applied mathematics, or other closely related fields. Depending upon research interests, candidates should have previous experience with single or multi-unit recordings, neuronal ensemble analysis, current dimensionality reduction and machine learning techniques, signal processing, and/or statistical analysis.

Inquiries should be directed to the laboratory of Leigh R. Hochberg, MD, PhD, c/o Beth Travers (Beth_Travers@brown.edu).

