



Two MEG post-doctoral positions at the Martinos Center at MGH, Boston: Investigating Functional Connectivity Abnormalities in ASD

Applications are invited for two open NIH funded Postdoctoral Research Position at the Massachusetts General Hospital Athinoula A. Martinos Center for Biomedical Imaging in Boston, MA (<http://www.nmr.mgh.harvard.edu/>). The fellows will also be affiliated with Harvard Medical School.

Overview of the projects: For either project, the successful candidates will have the opportunity to apply (and help develop if so desired) state of the art neurophysiological magnetoencephalography (MEG) analysis approaches to *existing* and *growing* MEG datasets from individuals with and without autism spectrum disorder (ASD), spanning a wide age range from childhood to early adulthood.

One project will be focused on the investigation of a variety of *cortico-cerebellar* functional connectivity metrics during resting state, both within and across diagnostic groups, with an emphasis on maturation trajectories during the sensitive adolescence period. While the primary goal of the project is the comparison of groups with and without ASD on a wide range of measures, much of what will be accomplished will be novel even just within the typically developing population group.

The second project will be focused on investigating cortical and functional connectivity abnormalities associated with bottom-up versus top-down spatial attention in ASD, in both the visual and auditory domains. Here too, there will be opportunities for both within and across groups analyses.

For both projects, the scope will span questions that are already defined, alongside a wide breadth for novel, creative, questions. Collaborations across projects are highly encouraged.

Responsibilities: The fellow will be able to work closely with the MNE-Python software team at the Martinos Center, to implement the latest state of the art methods to MEG data analysis. Direct contributions to the MNE-Python software tools of analyses that have not yet been implemented into MNE-Python are encouraged and welcomed, but not are not necessary. The positions will also involve the continuing collection of combined MEG and MRI data from adolescents and young adults, including some with ASD. Other responsibilities will include the preparation of manuscripts, writing of grants if desired, and development and implementation of new research ideas and paradigms.

Requirements: A Ph.D. in a relevant field, such as neuroscience, experimental psychology, or similar. A multidisciplinary degree in fields such as biomedical engineering, applied mathematics, computer science, combined with experience in applications to neuroscience, is also welcomed. Candidates must have strong python programming skills, since the primary software used at the center for MEG data analyses, MNE-Python, is Python-based. Extensive experience with electrophysiological signal processing, irrespective of signal origin (e.g. single unit, ECoG, EEG, etc) is strongly preferred. Experience in acquiring and analyzing MEG/EEG data is preferred, but not required. Similarly, familiarity with MEG/EEG and MRI analysis software packages, in particular MNE-Python, Brainstorm, and FreeSurfer, is preferred, but not required.

To apply: Interested candidates should email a CV, cover letter, and contact information for at least two references to Tal Kenet, tal.kenet@mgh.harvard.edu. The Massachusetts General Hospital is an Equal Opportunity/Affirmative Action Employer.