Two MEG post-doctoral positions at the Martinos Center at MGH, Boston: Studying the neural bases of autism spectrum disorder (ASD) during (1) resting state, and (2) visual / auditory spatial attention.

Applications are invited for two open NIH funded Postdoctoral Positions 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: One project will be focused on the investigation of a variety of *cortico-cerebellar* functional connectivity metrics during resting state, using a large existing dataset that includes some longitudinal data, both within and across diagnostic groups (ASD & control). The project will include investigating maturation trajectories, and group differences in these 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 activation 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, using novel methods.

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 ASD, spanning a wide age range, from childhood to early adulthood.

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

Responsibilities: Implementing the latest state of the art MEG methods to analyze the data, using MNE-Python, in-house code not yet implemented into MNE-Python, and or any other MEG relevant software tools that best address the questions at hand. 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, or a multidisciplinary degree in fields such as biomedical engineering, applied mathematics, computer science, combined with experience in applications to neuroscience. Experience with electrophysiological signal processing, irrespective of signal origin (single/multi-unit recordings, ECoG, EEG, MEG, etc.) is strongly preferred. Specific experience with 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. Candidates must have strong programming skills. MNE-Python is the main software used at the center for MEG data analyses, so experience with Python (or MNE-Python) is a plus, but not a must. Experience with data analysis using any programming language, including Matlab, is fine.

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.
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