Postdoctoral Fellowship in Motion-Resilient Structural and Functional Neuroimaging

Perelman School of Medicine
University of Pennsylvania

Research Position:

Dr. Dylan Tisdall is recruiting a postdoctoral fellow to join the Robust Methods for Magnetic Resonance (RMMR) Group at the University of Pennsylvania (http://rmmrgroup.org) for a 2-year position with the possibility of further extension. Trainees will join an NIH-funded project combining the resources of RMMR and Turing Medical (http://firmm.io) to address the three major goals of the project:

1) development of novel pulse sequences and reconstruction methods to quantify and correct the effects of subject motion using navigators and/or self-navigated strategies;
2) integration of these technologies with real-time displays of motion and data quality, in collaboration with Turing Medical, to help scanner operators adapt their protocols to each subject; and
3) development of prospective and retrospective motion-correction methods, including integration with external signal generators (*e.g.*, pilot tones) and sensor systems (*e.g.*, optical trackers).

In addition to participating in existing collaborative research projects of the RMMR, trainees are encouraged to pursue their individual research interests towards improving the quality, accessibility, and validity of clinical and research neuroimaging studies. Projects can be developed with clinicians at the Hospital of the University of Pennsylvania and the Children's Hospital of Philadelphia, as well as neuroscience researchers at Penn.

Neuroimaging Research at Penn:

The University of Pennsylvania hosts a diverse research program in neuroscience and neuroimaging, with a strong emphasis on cross-department collaboration. The RMMR Group is located in the historic Richards Biomedical Research Building, recently renovated to house many of the neuroscience researchers affiliated with Perelman School of Medicine (*a.k.a*, "The Brain Space"). Research-dedicated MRI instrumentation includes three 3T Siemens Prisma scanners and a 7T Siemens Terra scanner, as well as research-shared 1.5T and 3T scanners in the adjacent adult and pediatric hospitals, both walking distance from the RMMR Group's space.

Penn and Philadelphia:

The University of Pennsylvania has had a major role in American medicine, including the nation's first hospital (Pennsylvania Hospital, 1751), first medical school (1765), and first university hospital (1874). Philadelphia is one of the 10 largest metropolitan areas in the USA, with a lively cultural and restaurant scene and an affordable cost of living. Both New York City and Washington D.C. are day-trips by train or car, as are the popular Atlantic Ocean beaches in New Jersey, the Chesapeake Bay, and the Pocono "mountains".

Qualifications:

Applicants should have a PhD in Biomedical Engineering, Computer Science, Electrical Engineering, or a related field. A track record of research in the acquisition and/or analysis of medical imaging data, particularly MRI, is preferred. Experience with MRI pulse sequence development and/or reconstruction, particularly in the Siemens IDEA environment, is highly valued. However, researchers with strong scientific and C/C++ programming backgrounds can learn MRI physics and pulse sequence development during the fellowship. Experience with Python, Julia, Matlab, or other tools for rapid prototyping and data analysis is also desired.

Applying:

The University of Pennsylvania is an equal opportunity employer; women and members of other underrepresented populations in science and engineering are particularly encouraged to apply. Please contact Dr. Dylan Tisdall (mtisdall@pennmedicine.upenn.edu) and provide 1) a cover letter outlining research interests, experience, and qualifications; 2) a CV; and 3) the names of two references.