Post-Doctoral Fellowship in MRI-guided Interventional Electrophysiology Applications

Role: Develop MRI-guided invasive therapeutic procedures with NIH & industry funding

A. Develop systems for actively-tracking the location of invasive medical devices (catheters, sheathes) inside the human body while inside or outside the MRI scanner.

B. Develop motion-compensated MRI imaging sequences for monitoring radio-frequency ablation during interventions for treatment of cardiac arrhythmia.

C. Develop solutions for related MRI-guided Radiation Oncology & Interventional Radiology procedures

Focus is on designing, building and testing of analog circuits and MRI pulse sequences, which form clinical-grade systems, collaborating with academic & industrial partners. Systems are integrated with MRI scanners, as well as with MRI-compatible devices constructed locally or by our collaborators. Collaborative work within a group of professionals in an NIH- and industry-funded center, using Siemens 1.5 Tesla clinical & research MRI scanners. Site is equipped with hardware and software for performance of interactive image acquisition and real-time data processing. Strong collaborations with imaging-system and medical-device manufacturers.

Research involves RF circuit and antenna design, MRI pulse sequence programming, and testing in large animals and humans. Mentoring from physicists and invasive-cardiology faculty.

Background & Desired Qualifications:
1. PhD in Experimental Physics, Electrical Engineering, Physical Chemistry or related fields.
2. Courses in analog electronics and circuit design, as well as in NMR or MRI (spin physics).
3. Demonstrated competency in constructing analog IF (50-150 MHz) circuits.
4. Experience in MRI sequence programming, preferably on the Siemens MRI platform
5. Basic understanding of heart anatomy and physiology.
6. Commitment to clinical translation, including participation in animal & human interventions.
7. Two-year post-doc commitment.

Appointment Length and Duration: 2-year post-doctoral fellowship. First half year constitutes trial period. Start date Summer/Fall 2017.

Application: Curriculum Vitae, with contact details of 3 references, as well as transcripts of undergraduate and graduate academic courses to: Dr. Ehud Schmidt eschmi17@jhu.edu.

Johns Hopkins Medical School is an Affirmative Action, Equal Opportunity Employer. Women and members of underrepresented minority groups are encouraged to apply.