PostDoctoral position in 7 Tesla Body MR Imaging

The Research shield at Mayo Clinic is committed to creating a diverse environment and recognizes that diverse research teams make better decisions, are more equipped to solve complex problems and adapt to change, and produce better outcomes. That diversity is about opening up to unconventional ideas that create better outcomes.

Position Description: “PostDoctoral position in 7 Tesla Body MR Imaging”

We seek a highly motivated post-doctoral physics researcher with expertise in MR imaging to join the laboratory of Dr Andrew Fagan Ph.D. at Mayo Clinic’s flagship campus in Rochester, Minnesota. The focus of this position is on the development of parallel transmit techniques for body imaging at 7 Tesla using a commercially-built 8Tx/32Rx 1H radiofrequency coil. The RF coil also has an 8Tx/Rx 2H array and there will be an opportunity to work on the novel field of deuterium metabolic imaging (DMI) for early-stage cancer detection.

In 2017, the Mayo Clinic Rochester installed the first FDA-cleared 7 Tesla MRI scanner in North America (Terra, Siemens) and has been performing routine clinical diagnostic imaging on patients since early 2018. In 2021 we installed a second 7T Terra scanner at our campus in Jacksonville, Florida. Both 7 Tesla scanners have 50% dedicated research time and we are highly interested in expanding imaging applications beyond the brain and knee, currently the only anatomical areas used for routine clinical imaging. We recently purchased, via an internal grant funding scheme, a custom-designed dual-tuned 1H/2H body array coil to allow us image in the torso/abdomen/pelvis areas, and are excited to begin working with this innovative technology. We are specifically seeking an individual to work collaboratively with physics and clinical colleagues to develop and optimize body imaging techniques and evaluate their effectiveness in small-scale pilot clinical studies.

Essential Qualifications:
* Ph.D. in MR physics, biomedical engineering or similar field
* Strong programming skills (e.g. matlab, python, and/or C++)
* Track record of publications in top-tier journals and conference presentations

Experience in one or more of the following is desired:
* 7 Tesla / UHF MRI
* Parallel transmit techniques
* RF pulse design
* MR Pulse sequence programming, preferably on Siemens platform

The successful candidate will be appointed at the Research Fellow, Senior Research Fellow or Research Associate level, commensurate with experience. Research and Senior Research Fellow positions at Mayo Clinic are temporary positions intended to provide training and education in research, while Research Associate positions are designed to prepare individuals for an independent program or faculty position at Mayo Clinic or elsewhere. Qualified individuals will demonstrate the potential for research as evidenced by their training and peer-reviewed publications and should become competitive for national research grants. Proof of English language proficiency (oral and written) is required.
This full-time position is available immediately and for a duration of up to 3 years.

Mayo Clinic is located in the heart of downtown Rochester, Minnesota, a vibrant, multicultural, friendly city that provides a highly livable environment for more than 34,000 Mayo staff and students. The city is consistently ranked among the best places to live in the United States because of its affordable cost of living, healthy lifestyle, excellent school systems and exceptionally high quality of life. Mayo Clinic Rochester is home to a vibrant MRI research community with over 100 researchers working on research systems at 1.5T, 3T and 7T. We have vendor scientists based full-time on campus to provide scientific support, including a dedicated 7T Siemens scientist and we have close interactions with the Siemens ultra-high field teams in USA and Germany.

Please send your CV with contact details for 3 referees and a cover letter to describe your background, personal qualifications, research interests, and motivation for applying to Andrew Fagan at fagan.andrew@mayo.edu. Please include “Postdoc Application for 7 Tesla Body Imaging” in the subject line of your email.

Mayo Clinic offers a variety of employee benefits. For additional information please visit Mayo Clinic Benefits. Eligibility may vary.

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The candidate must have a Ph.D. or equivalent degree in biomedical engineering, medical physics, electrical engineering or a related field with a strong background in experimental physics and computation. The candidate should also have excellent written and oral communication skills. Experience in MRI pulse sequence programming and image reconstruction is highly desired. He/she will be expected to participate in both independent and collaborative projects.

Experience in one or more of the following is desired:

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