Research position in the development and application of magnetic resonance spectroscopy

We are seeking an enthusiastic student or researcher who wishes to join our efforts to develop new magnetic resonance spectroscopy (MRS) methods. The applicant will be part of a multidisciplinary team that aims to implement innovative and optimize current techniques of MRS and translate them to clinical settings. The work will include fine-tuning and clinical applications of cutting-edge MRS methods, such as functional MRS, diffusion-weighted MRS, and deuterium metabolic imaging, utilizing a multinuclear setup of high field (3T) and ultra-high field (7T) scanners. Using the strength of 7 Tesla MRI and our new deuterium coil, a strong focus of our research is to non-invasively probe the metabolism of the human brain and spinal cord. We plan to implement and advance methods of deuterium MRS previously published in the prestigious journal *Nature Biomedical Engineering*. The projects will be conducted in collaboration with experts in metabolite modeling to derive comprehensive brain metabolic parameters. The successful applicant will be encouraged to develop their own line of research and apply for independent funding.

About us:

The **Danish Research Centre for Magnetic Resonance (DRCMR)** is one of the leading research centers for biomedical MRI in Europe (www.drcmr.dk). At the DRCMR, approximately 70 researchers from diverse disciplines and countries are pursuing basic and clinically applied MR, electrophysiology, and brain stimulation research with a focus on structural, functional, and metabolic MRI of the human brain/spine and its disorders. Our mission is to triangulate MR physics, basic physiology, and clinical research. Our center hosts the only 7 Tesla scanner in Denmark, which is one of only four scanners of this type in the Nordic countries. The DRCMR is embedded in the Center for Functional and Diagnostic Imaging and Research, a large diagnostic imaging department including all biomedical imaging modalities at Copenhagen University Hospital Hvidovre.

The position:

You will be employed as a **PhD student or a Postdoc for a three-year period** on a project funded by the **Lundbeck Foundation** and other center resources. As a researcher at the DRCMR, you will closely interact with other researchers from various disciplines (neuroscience, health technology, medical engineering, neurobiology, radiology, computational and clinical neuroscience, etc.). We act in concert, and you are never alone with your tasks.

Your tasks will vary depending on the flow of the projects and your seniority, but will be centered around:

- development and testing of MRI/MRS(I) protocols at 3T and 7T
- data acquisition, mainly MRS(I) with multi-session design
- development and testing of MRI/MRS(I) data analysis methods
- analyzing MRI/MRS(I) data, from pre-processing to group analysis
- engaging knowledge dissemination and publication of results in international, recognized scientific journals

Your profile:

The ideal candidate should have a strong interest in metabolic imaging or MRI with most of the following qualifications:

- A MSc/PhD degree or corresponding qualification in engineering, physics, computer science, or a related field with an interest in neuroscience/neurophysiology. While a PhD degree is preferred, highly qualified applicants with an MSc degree are strongly encouraged to apply.
• Background and proficiency in MRI (mainly MRS/MRSI) protocol design, data acquisition, and analyses. Experience with MRI sequence pulse programming is an advantage.
• As a person, you have a good team spirit, innovative and constructive thinking, and research excitement.
• Knowledge of MRI/MRS analysis software is an advantage.
• Strong programming skills in MATLAB and/or Python.
• Strong oral and written communication skills.

The expected starting date is February 2024.

Salary and Terms of Employment:

You will be employed as a researcher for a period of 36 months with good possibilities of extension. Salary, pension, and terms of employment are in accordance with the agreement between the Danish Regions (Danske Regioner) and the relevant professional organization. The salary depends on background education and seniority. Further, supplements can be negotiated. Note that candidates coming from abroad may be eligible for tax reductions.

We see diversity as a strength and encourage all persons, regardless of gender, age, ethnicity, disabilities, or religion, to apply.

Applications should include a cover letter, CV, and list of publications.

Applications must be submitted online through the RegionH job portal – click HERE

Application deadline: November 30th 2023 at 23:00 (CET)

For further information regarding the position, please get in touch with Petr Bednarik, MD, PhD Email: petrb@drcmr.dk