



Postdoc in Microstructure Imaging analysis of Hearing Loss: From the ear to the brain network

Are you interested in hearing loss and eager to find out which microstructural changes occur in the auditory system when hearing becomes impaired? Then you might be our new postdoc in the multidisciplinary project “Uncovering Hidden Hearing Loss” (UHeal).

You will be part of the research project UHeal

UHeal is a multidisciplinary project funded by the Novo Nordisk Foundation under the interdisciplinary synergy program and involves The Technical University of Denmark (DTU) (PI: Tosten Dau), Harvard Medical School (PI: Charles Liberman) and Danish Research Centre for Magnetic Resonance (DRCMR) (PI: Tim Dyrby and Hartwig Siebner). Together we will design imaging techniques and auditory methods to detect and diagnose a recently described damages to the auditory nerve caused by exposure to loud sounds. Such damage can cause a ‘hidden hearing loss’ that a large part of the world population may have without knowing it. You can read more about the project at <http://www.drcmr.dk/uheal> and <http://www.heal.healthtech.dtu.dk/research/Uncovering-Hidden-Hearing-Loss>

Your contribution to the project

You will be working with microstructure imaging analyses and be responsible for advancing structural magnetic resonance imaging (MRI) of the human auditory system UHEAL. It will be your responsibility to establish the data analyze setup of microstructural imaging data to map the hearing system, from the ear to the brain network in health and disease. You will also be involved in establishing the imaging protocols on a 3T Prisma human MRI scanner to ensure optimal microstructure imaging contrast for hearing loss. The scanning protocols can include a combinations of myelin mapping using quantitative MRI, multi-dimensional diffusion MRI and DTI for insights into microanatomy, or simply T1W or T2W MRI.

You will be part of the interdisciplinary UHeal team exploring the structural functional relationship in hidden hearing loss and together with postdocs and researchers from the other sites you will compare the microstructure imaging analysis with their functional measures and novel hearing loss tests on the same subject group.

The ideal candidate

Should be a motivated international minded team player with:

- A PhD degree or corresponding qualification in engineering, physics or computer science.
- A strong documented background in diffusion MRI and data analysis of human data.
- Proficiency regarding using human MRI scanners, preferably Siemens.
- Excellent written and oral communication skills in English

Your tasks

- To advance the field through your own research
- To work directly with a dedicated and inspiring cross disciplinary team and international collaborators.
- To establish the data analysis for mapping microstructural changes in hearing loss in human subjects.
- To be involved in establishing the imaging protocol and data collection on subjects
- To be engaged in supervision of BSc, MSc and PhD students, knowledge dissemination and publishing in international, recognized scientific journals.

You will be working at DRCMR

You will be part of the [Microstructure and Plasticity](#) (MaP) group headed by Tim Dyrby (www.drcmr.dk/map) at The Danish Research Centre for Magnetic Resonance (DRCMR, www.drcmr.dk). MaP is a dedicated cross-disciplinary and translational research team with the vision to improve the future non-invasive imaging technologies for better patient diagnosis. Your part of the UHeal project will be carried out at DRCMR but you will be collaborating intensively with the other project partners at DTU and Harvard.

The project will be carried out at (DRCMR) which is a leading research center for biomedical MRI in Europe (www.drcmr.dk). Our mission is to triangulate MR physics and basic physiology from preclinical to clinical research. Approximately 75 researchers from a diverse range of disciplines are currently pursuing basic and clinically applied MR research and its validation with a focus on structural, functional, and metabolic MRI of the

human brain and its disorders. 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 the **Copenhagen University Hospital Hvidovre**. DRCMR has a state-of-the-art MR-research infrastructure enabling translational research, which includes a pre-clinical 7T MR scanner, six whole-body MR scanners (one 7T, three 3T and two 1.5T scanners) and a High-Performance Computer cluster for neuroimaging. The DRCMR has pre-clinical labs, a neuropsychology laboratory, an EEG laboratory, and two laboratories for non-invasive brain stimulation.

Application deadline: 6th January 2020

Starting date: is expected to be in March 2020 or as soon as possible

Interviews will take place in the first half of January

Salary and Terms of Employment

You will be employed for a **postdoc period** of 24 months at the Danish Research Centre for Magnetic Resonance. 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. The position is open for candidates of all nationalities.

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

Applications should include a cover letter, CV and list of publications together with the names of three references. Applications must be submitted on-line through the RegionH job portal:

<https://candidate.hr-manager.net/ApplicationInit.aspx?cid=342&ProjectId=221614&DepartmentId=18051&Mediald=5>
– also see <http://drcmr.dk/vacancies/item/1030-postdoc-in-microstructure-imaging-analysis-of-hearing-loss>.

For further information regarding the position please contact Associate Professor Tim B. Dyrby
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