Research position in quantitative MRI
From bench to bedside

We are looking for a talented MRI scientist to join the team of Prof. Jessica Bastiaansen to develop imaging technology for clinical MRI systems. The candidate will join an exciting research initiative in active collaboration with Siemens Healthineers (on-site scientists), clinicians from the Department of Interventional and Pediatric Radiology (DIPR), and physicists and engineers from the Translational Imaging Center (TIC) at the SITEM-INSEL.

PROJECT • In this project we will develop imaging technologies that exploit MR signal asymmetries for frequency-resolved tissue property quantification at 3T and 7T, leading to artifact-free next-generation biomarker imaging (for more details see contact below). The SNSF funded project aims to bring a new perspective on quantitative imaging and to maximize the amount of information derived from MRI exams to address unmet needs in healthcare, especially for the staging of liver and cardiac diseases. The challenge lies in the multi-dimensional nature of the data acquisition and in the reliable identification of MR property clusters as potential biomarkers. The prospective candidate will participate in this project and is expected to develop advanced image reconstruction techniques for whole liver and whole heart frequency-resolved quantitative imaging, increase the robustness of biomarker detection, co-design an accelerated acquisition strategy, co-supervise students, participate in clinical studies, and present work at international conferences and publications. Exact details of the project can be adjusted based on background and interests of the applicant.

The project will be conducted under the supervision of Dr. Jessica Bastiaansen and in close collaboration with the rest of the team as well as clinical collaborators. The candidate is expected to contribute to collaborative decision making, and propose new directions to progress research.

QUALIFICATIONS • We are an enthusiastic and young research team that looks for a creative colleague with a drive to push MRI to the next level. Further requirements:

- PhD in Engineering, Computer Science, Life Science, Medical Physics or related fields, with a publication record in MRI research.
- Demonstrated research experience with modern image reconstruction techniques (iterative image reconstruction, low rank, compressed sensing, etc.)
- Strong programming and signal processing skills (non-linear optimization algorithms, signal modelling and fitting).
- Experience in MR pulse sequence development is advantageous
- Experience with abdominal and cardiac imaging, or imaging at high field is advantageous.
- Experience with phantom, volunteer and patient MRI is advantageous

RESEARCH ENVIRONMENT • The Translational Imaging Center at the SITEM-INSEL is an interdisciplinary research environment with state-of-the-art 3T and 7T systems dedicated to research. Clinical translation is furthermore supported by MRI scanner access and established collaborations within the Department of Radiology (DIPR) at the INSEL, one of five Swiss university hospitals. The SITEM-INSEL hosts various research groups, a variety of startups, and fosters entrepreneurship. Through collaborations with the AI center (CAIM) and the ARTORG...
institute, the environment contributes to thriving (bio)medical research activities in the capital of Switzerland.

OFFER • Some of the perks of this position include:

- Access to state-of-the-art research environment and cutting-edge technology
- Stimulating and interdisciplinary work environment
- Time to work on own projects (20% under discussion with the PI)
- Opportunities to develop academic career (grant applications, student supervision)
- Attractive work conditions (salary, vacation days, benefits)

HOW TO APPLY • For information about this research position or to send your application (please include a CV, a motivation letter, and two references), please contact Dr. Jessica Bastiaansen (jbastiaansen.mri@gmail.com)