



## MR Physicist/Engineer Position for Hyperpolarized DNP NMR/MRI

Applications are invited for the position of a MR physicist/engineer in the Department of Radiology and Biomedical Imaging at the University of California San Francisco (UCSF). The successful candidate will be responsible for Dynamic Nuclear Polarization (DNP) instrumentation development and maintenance at the UCSF Hyperpolarized MRI Technology Resource Center. This position will work closely with collaborators to design and test new methods & hardware for dissolution DNP hyperpolarized MR molecular imaging preclinical and clinical research studies.

### Facility and Equipment:

The UCSF Hyperpolarized MRI Technology Resource Center encompasses equipment in the UCSF Surbeck Laboratory for Advanced MR Imaging and the adjacent UCSF Biochemical NMR lab equipped with: 1) Five DNP polarizers (3 Oxford Instruments HyperSense systems, an alpha-version Proof-of-Concept, & a GE SpinLab multi-sample clinical-research polarizer); 2) A GE 3T and 7T whole-body MRI scanners; 3) A Vertical bore Varian/Agilent 11.7T NMR & 14.1T wide-bore Micro-Imaging NMR system; and 4) Access to Bruker 500, 600, and 800 MHz NMR's. The center facilities also include an electronics shop and a machine shop. For more information please visit the center website at: <http://www.radiology.ucsf.edu/research/labs/hyperpolarized-mri-tech>.

**Job Description and Responsibilities:** Hyperpolarized MRI using dissolution Dynamic Nuclear Polarization (DNP) is an emerging imaging technique which uses specialized hardware & methods to provide signal enhancements of over 5-orders of magnitude for carbon-13 enriched compounds. The resulting hyperpolarized solution then can be injected in a MR scanner to detect not only the uptake of the targeted molecule, but also its metabolic products *in vivo* using rapid  $^{13}\text{C}$  MR acquisitions. This extraordinary new technique has the potential to become a major new MR metabolic imaging technique by providing valuable new information on previously-inaccessible aspects of biological processes by detecting endogenous, nontoxic  $^{13}\text{C}$ -labeled probes that can monitor enzymatic conversions through key biochemical pathways. UCSF has established a major research center in HP DNP MR for cell, tissue, & *in vivo* studies with expanding engineering needs and opportunities. This new staff position will be responsible for the development and maintenance of specialized DNP polarizer hardware for cutting-edge preclinical and clinical research using hyperpolarized MR molecular imaging.

### Qualifications:

We are seeking individuals who have experience in NMR, super-conducting magnets, cryogenic hardware, team-oriented collaborative research, and who have a desire to learn or prior experience in DNP polarizer hardware engineering. Experience in operating and maintaining NMR systems, troubleshooting on the hard- and software side, machine shop tooling, and knowledge in RF design will be an advantage. UCSF is an equal opportunity employer. Women and minorities are encouraged to apply.

### Please Apply to:

Jenny Che: [jenny.che@ucsf.edu](mailto:jenny.che@ucsf.edu)

Program Manager, Hyperpolarized MRI Technology Resource Center  
UCSF Byers Hall MC2512, 1700 4<sup>th</sup> St, San Francisco, CA 94158