



Postdoctoral *Research Fellow*

SOMAN LABORATORY FOR NEUROIMAGING (SLN)

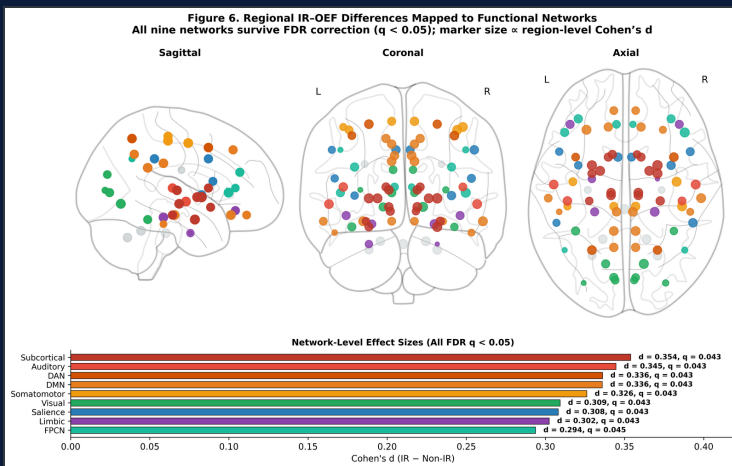
*Bench to Bedside
Susceptibility MRI*

*QSM & Oxygen Extraction
Fraction Imaging*

*Neurologic
Disease*

*7T & Cima.X
MRI*

The SLN develops **quantitative susceptibility mapping (QSM)** and **oxygen extraction fraction (OEF) MRI** and translates them directly into clinical care for neurologic disease at UCSF.



Insulin resistance elevates brain oxygen extraction globally across functional networks · Bhagat & Soman et al. (in review)

RESEARCH FOCUS

● Brain OEF & Metabolic Injury

Voxel-wise oxygen extraction as a biomarker of metabolic brain disease: insulin resistance and cognitive decline in Type 2 Diabetes (Boston Puerto Rican Health Study), OEF signatures of disease-modifying therapies in multiple sclerosis, and Diamox cerebrovascular reactivity mapping.

● QSM for Neurodegeneration & Cerebrovascular Disease

mcTFI QSM for microbleed detection and blood-calcification differentiation, ARIA-H monitoring for anti-amyloid therapies, intracranial hemorrhage staging and volumetrics, Parkinson's nigrosome-1 imaging, and DBS electrode targeting.

● Traumatic Brain Injury

Advanced neuroimaging for TBI in collaboration with UCSF Neurosurgery (PI: Manley). Susceptibility and diffusion imaging for injury characterization and longitudinal monitoring.

● Epilepsy & Precision Neuroimaging

OEF mapping for focal cortical dysplasia localization with the UCSF Epilepsy service. Sub-millimeter quantitative MRI on Siemens Cima.X and 7T. Stroke perfusion and collateral imaging.

YOUR ROLE

- Build QSM and OEF analysis pipelines
- Develop advanced QSM reconstruction methods
- Lead first-author publications
- Contribute to NIH grant applications
- Collaborate with clinical neuroscience teams
- Present at ISMRM, ASNR, RSNA, HBM, and AIC

QUALIFICATIONS

REQUIRED

- PhD or MD/PhD in BME, physics, CS, or neuroscience
- MRI analysis — Python, MATLAB, FSL, or AFNI
- Susceptibility MRI — QSM, SWI, or BOLD

PREFERRED

- QSM reconstruction or phase processing
- OEF / qBOLD methodology
- Prior first-author publications
- Brain segmentation or deep learning for neuroimaging

WHAT WE OFFER

- ◆ Top-ranked academic radiology at UCSF
- ◆ Siemens Cima.X and 7T MRI access
- ◆ Mentorship toward an independent faculty career
- ◆ Competitive UC salary & benefits · San Francisco

APPLY

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- › Cover letter
- › CV with publications
- › 2–3 references
- › Representative paper (optional)

Start date flexible · Rolling review

UCSF is an Equal Opportunity / Affirmative Action Employer