

HARSHA RADHAKRISHNAN

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PROFILE

Research and Technical:

- Specialist in multi-disciplinary biomedical imaging research – specifically *in vivo* multimodal functional neuroimaging of animal models of stroke, Alzheimer's Disease, and Glaucoma and human subjects using electrophysiology and optical imaging techniques.
- Strong knowledge of mammalian neuroanatomy, cellular neurobiology, and retinal structure and function and a broad knowledge of human and animal anatomies and physiologies.

Management and Coordination:

- Experience working on cross-functional team, tracking progress in projects and as a point of contact, maintaining effective communication with all members.
- Supervisory duties including lab management and serving as lab safety officer.
- Analyzing dossiers and providing critical evaluations on qualifications for merits and promotions of research staff.

Scientific Writing and Editing:

- Proficiency in authoring/editing and managing the writing/review of manuscripts, grant proposals for submission to external and internal funding agencies, conference presentations, human (IRB) and animal (IACUC) protocols and their submissions.

RESEARCH AND PROFESSIONAL EXPERIENCE

Associate Specialist, Biomedical Engineering Department, University of California Davis, USA:

Oct 2012 to present

- Developing experiment protocols, measurement techniques, and data analyses methods using Matlab® to understand neurovascular pathophysiology in pre-clinical small animal models including Stroke, Alzheimer's Disease, and Glaucoma. Maintaining appropriate documentation for the same. Delivered reliable and reproducible data in a timely manner.
- Expertise in carrying out *in vivo* experiments, data analyses methods, troubleshooting, and training on laminar electrophysiology, and microscopic optical imaging techniques including intrinsic optical imaging, two-photon microscopy and optical coherence tomography.
- Providing technical expertise and training in functional neuroimaging research projects led by graduate students and post-doctoral fellows, including assisting with manuscript preparation.
- Keeping current with scientific advances in the field to propose, develop, and write new grant proposals to drive technical and scientific innovation in the lab.
- Compiling, submitting, and maintaining all animal (IACUC) and human (IRB) research protocols. Point of contact for all lab inspections from related governing bodies.
- Effectively communicating scientific information to both scientists (publications and conferences) and lay persons (articles and blogs).
- First hire in the lab to help develop the lab infrastructure from the ground up. Currently the lab has a total of 8 members, including 3 post-doctoral fellows, 3 graduate students, and a Junior Engineer.
- Member of the Academic Federation review committee to provide feedback and vote on all merits and promotions of all research staff in the Biomedical Engineering department.
- Nominated to serve in the UC Davis Academic Federation/Academic Senate Joint Personnel Committee to confer with the University Provost on policies relating to merits and promotions and vote and recommend on new appointments, merits, and promotions of Academic Federation members.

- Trained in small animal handling, aseptic surgical procedures, and dosing and withdrawal of blood.
- Managing day-to-day lab activities, including vendor contacts, purchasing, sole-sourcing, and contracts for equipment maintenance. Enforce all lab policies as required by the PI and the University.
- Managing all safety protocols and lab SOPs and ensuring University and state compliance on all matters concerning lab personnel and lab equipment safety measures. Point of contact for all lab inspections from related governing bodies within the university and state of California.
- Peer-reviewer for leading journals in area of expertise.
- Maintain the lab website – updating new publications and research progress. Also, involved with data management and disk space maintenance and back up.

***Graduate Assistant, Center for Neural Engineering, Penn State University, USA:
Sept 2011 to Jun 2012***

- Completed a project that anatomically mapped the bilateral connections from the claustrum of small animals using electrophysiology measurements and tracer injections. Published results in the Journal of Neuroscience in 2012.
- Hands-on experience in histological and immunohistochemical processing of brain tissue.

***Research Technologist, Martinos Center for Biomedical Imaging Charlestown, USA:
Sept 2006 to Aug 2011***

- Led projects, working with cross-functional teams, on detection of origin of neurovascular coupling by multi-modality optical imaging and electrophysiology recordings in animal models and human studies. Maintained appropriate documentation of all experiments and interventions and delivered reliable and reproducible data in a timely manner.
- Expertise in carrying out *in vivo* experiments, data analyses methods using Matlab®, troubleshooting, and training on EEG, laminar electrophysiology, and micro- and macroscopic optical imaging techniques including Near Infrared Spectroscopy, two-photon microscopy, laser Doppler imaging, and Optical Coherence Tomography.
- Trained in handling of rats and mice and surgical procedures including thinned-skull craniotomies.
- In-charge of hands-on training and data processing lecture sessions of Near Infrared Spectroscopy (NIRS) data at the annual NIRS-DOT Visiting Fellowship program at the Martinos center.
- Submitted human and animal research protocols and also assisted in writing of successfully funded federal grants.

***Graduate Associate, Biomedical Engineering Department, University Of Texas Arlington –
Sept 2003 to Aug 2006.***

- Working in a collaborative team, used fiber optic probe bundles to determine optical properties of the spinal cord in rodent pain models. Submitted a thesis titled “**Use of near infrared and visible spectroscopies to determine optical properties of rat nervous system.**”
- Teaching Duties: Fall 2004 – Bioinstrumentation (Dr. Hanli Liu); Spring 2004: Design of Artificial Organs (Dr. Kevin Nelson); Fall 2003 – Seminar in Biomedical Engineering (Dr. Karel Zuzak).

EDUCATION

- **M.S. Biomedical Engineering**, 2006, University of Texas at Arlington, TX USA
- **M.S. Medical Software**, 2002, Manipal Academy of Higher Education, Manipal, India
- **B.E. Electronics and Instrumentation Engineering**, 2000, University of Madras, Chennai, India

SELECTED PEER-REVIEWED PUBLICATIONS (Total: 28; Google Scholar h-index: 14)
[\(http://www.ncbi.nlm.nih.gov/sites/myncbi/harsha.radhakrishnan.1/bibliography/43868683/public/\)](http://www.ncbi.nlm.nih.gov/sites/myncbi/harsha.radhakrishnan.1/bibliography/43868683/public/)

- Leahy C, **Radhakrishnan H** Weiner G, Goldberg JL, Srinivasan VJ. "Mapping the 3-D connectivity of the rat inner retinal vascular network using OCT angiography," *Accepted in Invest Ophthalmol Vis Sci*, 2015.
- Srinivasan VJ, Yu E, **Radhakrishnan H**, et al. "Micro-heterogeneity of flow in a mouse model of chronic cerebral hypoperfusion by longitudinal Optical Coherence Imaging," *Accepted in J Cereb Blood Flow Metab*, 2015.
- **Radhakrishnan H**, Srinivasan VJ. "Multi-parametric OCT imaging of the inner retinal hemodynamic response to visual stimulation," *J Biomed Opt* 18(8): 086010, 2013
- Srinivasan VJ, **Radhakrishnan H**. "Total average blood flow and angiography in the rat retina," *J Biomed Opt* 18(7): 076025, 2013.
- **Radhakrishnan H**, Srinivasan VJ. "Compartment-resolved imaging of cortical functional hyperemia with OCT angiography," *Biomed Opt Express* 4(8): 1255-1268, 2013.

SELECTED CONFERENCE PRESENTATIONS (Total: 52)

- Srinivasan VJ, Merkle CW, Chong SP, **Radhakrishnan H**, Leahy C. "Label-free optically quantified cortical metabolic rate of oxygen consumption." *Brain and Brain-PET 2011*, XXVIIth International Symposium on Cerebral Blood Flow, Metabolism, and Function, Vancouver, Canada, June 27th to 30th 2015.
- **Radhakrishnan H**, Leahy C, Srinivasan VJ. "Quantification of cytoarchitecture and myeloarchitecture using optical coherence microscopy." *SPIE – Photonics West*, San Francisco CA, Feb 1st to 6th 2014.
- Roche-Labarbe N, Fenoglio A, **Radhakrishnan H**, et al. "Evoked changes in oxygen consumption in the somatosensory cortex of premature patients." *Brain and Brain-PET 2011*, XXVIIth International Symposium on Cerebral Blood Flow, Metabolism, and Function, Shanghai, China, May 20th to 23rd 2013.
- Srinivasan VJ, **Radhakrishnan H**, et al. "Optical Coherence Tomography maps hemodynamics and cell viability during acute ischemic stroke." *Brain and Brain-PET 2013*, XXVIIth International Symposium on Cerebral Blood Flow, Metabolism, and Function, Shanghai, China, May 2013.
- **Radhakrishnan H**, et al. "Simultaneous OCT and electrophysiology measurements to investigate neurovascular coupling in rats," *OSA Topical Meetings BIOMED*, Technical Digest, Miami FL, April 2010.

AWARDS

- Center for Genomic and Molecular Imaging Pilot Grant, UC Davis, 2013.
- UC Davis Research Travel Grant, 2013.
- Graham Endowed and Homer F Braddock Fellowships from Penn State University in 2011
- Research and Teaching Assistantship awards, 2003-2006 and "**Who's Who Among Students in American Universities and Colleges**" award from the Biomedical Engineering Program at University of Texas at Arlington for outstanding merit and accomplishment as a graduate student. .
- Served as President of the **Biomedical Engineering Students Society (BMESS)** in 2004-2005.

REFERENCES

Provided on request.