Multi-Disciplinary Training Program in Cardiovascular Imaging @ Stanford (CVIS)

An NIH/NIBIB Training Program

Michael V McConnell, MD, MSEE
Program Director

Sanjiv Sam Gambhir, MD, PhD & John M Pauly, PhD
Program Co-Directors
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Program Overview

The Multi-Disciplinary Training Program in Cardiovascular Imaging @ Stanford (CVIS) is funded by the National Institute of Biomedical Imaging and Bioengineering of the National Institutes of Health to bring together post-doctoral fellows and faculty from three complementary areas – clinical, engineering, and molecular imaging – to train the next generation of CV imaging investigators for successful careers. With the impact of cardiovascular disease on US and world health and the rapid advances in imaging technologies and cardiovascular biology, it is critical that fellows be provided a broad, multi-disciplinary, and collaborative training program to foster their ability to translate CV imaging research into clinical application.

The CVIS will train 4 post-doctoral fellows from MD and PhD backgrounds together over a two-year period, combining CV imaging research with a structured educational program. There are over 15 faculty mentors from the Schools of Medicine and Engineering, including Cardiovascular Medicine, Radiology, Molecular Imaging, Electrical Engineering, and Bioengineering.

Program Design & Requirements

CVIS fellows will pursue research over the two-year period with the goals of oral presentations, publications, and initial grant submission to propel career advancement. Fellows will have a primary research mentor as well as a secondary mentor from a complementary area (e.g., a clinical secondary mentor to complement a bioengineering primary mentor). There will also be broad exposure for all fellows to clinical imaging modalities and facilities within the Stanford University Medical Center. Fellows with clinical training are welcome to maintain some clinical activities, however as an NIH research training program this will be limited to 10% effort.

The CVIS educational program emphasizes collaborative interaction in 4 major areas

1. Multi-modality CV Imaging
2. Multi-disciplinary Innovation
3. CV Imaging Discovery
4. Research Career Development.

These include courses in Biodesign, Molecular Imaging, and Team Challenge – where fellows will work together to identify and propose solutions for high-impact CV imaging challenges. In addition, there is a weekly Clinical CV Imaging Conference and a regular CV Imaging research seminars hosted by the Stanford Cardiovascular Institute and the Center for Biological Imaging at Stanford. These will be complemented by workshops on study design, biostatistics, biomedical ethics, and grant/manuscript writing. Finally, fellows will have access to a wide range of courses and seminars to enhance their primary fields of research throughout Stanford University and the Schools of Medicine and Engineering. CVIS fellows, Program Directors, and faculty mentors will meet regularly to exchange research ideas and provide feedback. Fellows will also participate in the Stanford Cardiovascular Institute retreat.
Faculty

The faculty mentors are a critical component of the CVIS program, with a balance of MD and PhD mentors across the core collaborative departments. They are grant-funded faculty engaged in a broad range of cardiovascular imaging research with experience training successful young investigators.

Francis Blankenberg, MD (Radiology, MIPS, Pediatrics)
Kim Butts Pauly, PhD (Radiology, Bioengineering)
Christopher Contag, PhD (Pediatrics, Microbiology & Immunology, MIPS, Radiology)
Rebecca Fahrig, PhD (Radiology)
Sanjiv Sam Gambhir, MD, PhD (Radiology, MIPS, Bioengineering)
Robert Herfkens, MD (Radiology)
Pierre Khuri-Yakub, PhD (Electrical Engineering)
David Liang, MD, PhD (Cardiovascular Medicine, Electrical Engineering)
Michael McConnell, MD, MSEE (Cardiovascular Medicine, Electrical Engineering, MIPS, Molecular & Cellular Physiology)
John Pauly, PhD (Electrical Engineering)
Dwight Nishimura, PhD (Electrical Engineering)
Norbert Pelc, PhD (Radiology, Bioengineering)
Charles Taylor, PhD (Bioengineering, Mechanical Engineering, Radiology)
Joseph Wu, MD, PhD (Cardiovascular Medicine, Radiology, MIPS)
Phillip Yang, MD (Cardiovascular Medicine)
Greg Zaharchuk, MD, PhD (Radiology)

Resources & Facilities

The research, clinical, and educational resources and activities of the departments and programs involved provide an extraordinary environment for multi-disciplinary training in CV imaging. A key asset of the CVIS program is the proximity of the departments and facilities on the Stanford University campus. The Falk Cardiovascular Research Center is adjacent to Stanford Hospital and houses Cardiovascular Medicine, Cardiothoracic Surgery, and the Cardiovascular Institute. In addition to cardiovascular biology labs, it has a full animal facility with surgical and cath lab facilities and the Falk Cardiovascular 3T MRI lab. The Richard M. Lucas Center for Imaging is near the School of Medicine and houses the Radiology Department and Radiologic Sciences Lab. It has one 1.5T, two 3T, and one 7T whole-body MRI systems, as well as a cyclotron and radiochemistry facilities. The Stanford Hospital has numerous inpatient and outpatient state-of-the-art MRI, CT, SPECT, PET/CT, echo, and x-ray angio systems. The James H. Clark Center is between the School of Medicine and the Packard Electrical Engineering Building and houses Bioengineering and the Molecu-
The CVIS program seeks highly qualified MD, PhD, or MD/PhD graduates. Applicants must be either a U.S. citizen or permanent resident to apply. Funding support includes postdoctoral salary, supplies, and travel for two years, given adequate progress.

Qualifications

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Application Materials

Applicants will be evaluated based on the following criteria:

i. Excellence in previous training, with preference for proven research capabilities;

ii. Convincing evidence of career goals in academic medicine and CV imaging, with strong research potential;

iii. Evidence of integrity, honesty, and interest in collaborative, multi-disciplinary research;

iv. Commitment of time and effort to a rigorous research and educational training program extending over two years; and

v. A high level of verbal, written, interpersonal, and organizational skills.

The following application materials should be mailed or emailed to CVIS:

- Application form
- Undergraduate/Graduate GPA and GRE scores
- Two letters of recommendation
- 1-page career goal statement
- 2-page written research proposal describing a project of interest in CV imaging

Application Materials and Deadline Information:

http://cvmedicine.stanford.edu/education/cvis

Send All Application Materials To

Michael V. McConnell, MD, MSEE
CVIS Training Program
Stanford University School of Medicine
300 Pasteur Drive, H2157
Stanford, CA 94035-5233

Tel: (650) 723-7476
Fax: (650) 724-4034
Email: cvis@cvmed.stanford.edu

For More Information

http://cvmedicine.stanford.edu/education/cvis