Cedars-Sinai Cardiovascular Imaging Fellowship for ECFMG Physicians
Program Description

A. Program Demographics
   1. Host Institution: Cedars-Sinai Medical Center
   2. Specialty: Cardiovascular Imaging
   3. Address: 8700 Beverly Blvd., Taper M335, Los Angeles, CA 90048
   4. Address (Physical Location): 8705 Gracie Allen Drive, Taper M335, Los Angeles, CA 90048
   5. Phone Number: 310-423-4216
   6. Fax Number: 310-423-8335
   7. Address of Prog. Website: https://www.cedars-sinai.edu/Education/Graduate-Medical-Education/Fellowship-Programs/Cardiac-Imaging/
   8. Program Director/email: Daniel Berman, MD: daniel.berman@cshs.org
   9. Program Administrator and e-mail: Debbie Kenneybrew Debbie.Kenneybrew@cshs.org

B. Introduction
   1. **History:** The research funded Cedars-Sinai Advanced Cardiac Imaging Fellowship has trained over 100 fellows in its 1-2 year program for over 40 years.
   2. **Duration:** The duration of the program is 1-2 years. Two years is strongly encouraged.
   3. **Prerequisite Training/Selection Criteria**: Completion of fellowship training in cardiology or residency in diagnostic radiology. Experience in/promise for clinical research is a factor in selection.
   4. **Goals and Objectives for Training:** 1) To provide a comprehensive supervised clinical experience in cardiac CT, cardiovascular magnetic resonance (CMR) and SPECT and PET nuclear cardiology studies. 2) To provide training and experience in clinical cardiac imaging research. Program is designed to promote the opportunity for an academic career as a clinician scientist. The goal is to become level III trained in at least two fields able to direct a noninvasive imaging laboratory.

Facilities and Equipment: The Cedars-Sinai cardiac imaging laboratories of Cardiac CT, Cardiac MRI, and Nuclear Cardiology are located primarily in the S. Marc Taper Imaging Center within Cedars-Sinai Medical Center. Equipment has cardiac dedicated imaging equipment including 2 cardiac CT scanners, a 1.5 T cardiac MRI, a solid state cardiac PET scanner, solid state SPECT, dual detector SPECT, and SPECT/CT systems. In the adjacent Biomedical Imaging Research Institute, the program has access to research 3T and PET/MR systems.

Patient studies: The laboratory has very high clinical volumes in all modalities. Current cardiac volumes include approximately 15-20 coronary CTAs, 8 structural cardiac CTs, 6-9 cardiac MRIs, 8 cardiac PET and 15 cardiac SPECT procedures.

Faculty

Daniel Berman, MD
John Friedman, MD
Sean Hayes, MD
Rola Saouaf, MD
Louise Thomson, MBChB
Alan Kwan, MD
Piotr Slomka, PhD
Damini Dey, PhD

D. Educational Program (Basic Curriculum)

1. Clinical and research components:

The advanced cardiovascular fellowship curriculum provides comprehensive training to become experts in multiple modalities. The clinical training experience encompasses the breadth of all types of cardiac CT and cardiovascular magnetic resonance procedures (CMR), and nuclear cardiology studies.

The research curriculum fosters the development of clinical investigators in cardiac imaging. This includes all aspects of research from hypothesis generation, literature review, project design, biostatistics, data acquisition and analysis, scientific-writing, grant writing and ethics in research.

2. Trainee responsibilities:

All trainees participate in interpretation of the imaging procedures. At least 50% time is devoted to clinical research.

Efforts are made to qualify for limited California licensure (2111 licensing exemption). So as to all for up to 20% direct patient care that includes all aspects of patient management that pertain to the cardiac imaging services.

3. Clinical procedural goals

Fellows develop advanced skills and competence in all aspects of cardiovascular imaging including image acquisition, reformation, interpretation and reporting for cardiovascular imaging, including cardiac CT, CMR, and Nuclear Cardiology.

4. Didactic sessions and teaching methods used to ensure program goals and objectives are met.

- Didactic and teaching sessions to ensure the program's goals and objectives are met, including case conferences, core curriculum lectures, symposia, and quality assurance

conferences. The fellows also participate in cardiology conferences for the general clinical cardiology fellows. There are also responsible for presentation of selected case conferences.

5. Participation in the program is for 2 years is strongly encouraged.

   The second year is of particular importance for fellows who plan an academic career. The two-year program allows the fellow opportunity to have research productivity to document academic excellence. It also allows the fellow to develop a specific focus of their research which would aid in obtaining research funding. In the second year, the fellow gains teaching experience by helping first year fellows, cardiology fellows, and radiology residents in clinical imaging and delivering conferences.

E. Supervision and Evaluation

1. Fellows are mentored and supervised by faculty for all clinical activities with individual one-on-one review of every clinical case. The faculty mentors the fellows directly in all research projects. All faculty are educated on the goals and objectives of the program.
2. Describe the formal evaluation process used to assess the educational performance of the trainee.

   Faculty members assess the educational performance of the trainee by providing daily verbal feedback. In additional, faculty complete quarterly written evaluation in New Innovations. The program director conducts a one-on-one quarterly meeting with the fellow to give feedback on his/her performance.