

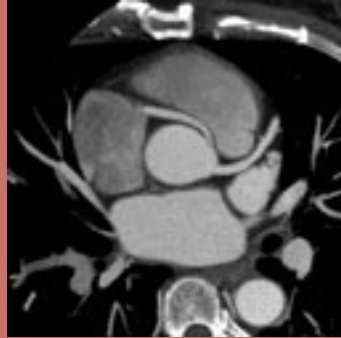
<http://healthsystem.virginia.edu/internet/vascularresearch/>

Mission:

The mission of Cardiovascular Imaging training at the University of Virginia Health System is to be at the leading edge of new technology, with an abiding interest in using it to understand the mechanisms of cardiovascular disease, physiology, and pathophysiology.

COMPUTED TOMOGRAPHY

The cardiovascular CT group includes investigators in the Departments of Medicine (Cardiovascular Division) and Radiology (Noninvasive Cardiovascular Division). Research interests include assessing chest pain in the ER, characterizing coronary atherosclerotic plaque, and pulmonary vein and left atrial imaging to improve planning of atrial fibrillation ablation procedures. Equipment available for use include both dual source and single source 64-detector systems.

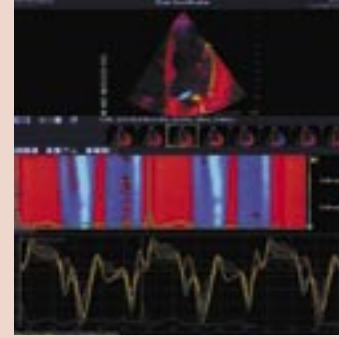


Specific Goals:

- to provide competence in technical aspects of imaging;
- to provide competence in cardiovascular physiology and pathophysiology
- to develop and study innovative methods of imaging.

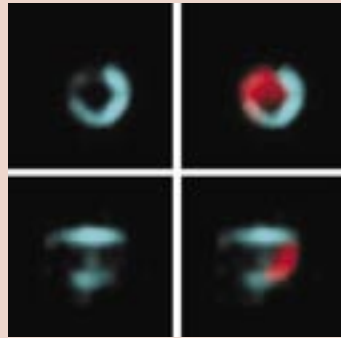
ECHOCARDIOGRAPHY

Research in echocardiography involves investigators in the Cardiovascular Division, the Department of Radiology, and the General Clinical Research Center. Ongoing projects include tissue Doppler mechanics for prediction of response to resynchronization in heart failure, echocardiography microbubble contrast agent development, contrast ultrasound in the evaluation of muscle function in diabetes, and carotid intimal-medial thickness studies for risk factor stratification. Equipment is available for clinical as well as animal studies, with dedicated space for clinical research in the echocardiography lab and state-of-the-art equipment from multiple manufacturers.



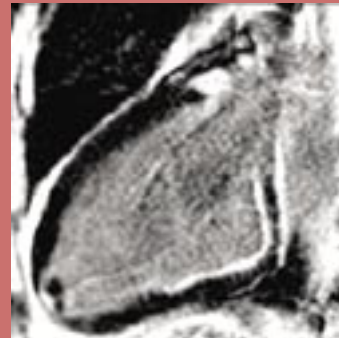
NUCLEAR CARDIOLOGY

This group is evaluating new perfusion and molecular imaging agents in various experimental models. Of major interest is the development of multimodality nuclear and MR techniques for evaluating myocardial perfusion, function, metabolism and inflammation. Clinical research involves rest and stress SPECT imaging in patients with known or suspected CAD, comparing nuclear variables with data from newer imaging technologies such as MR and CT. The research laboratory houses a dedicated high resolution microSPECT camera system, and a Siemens single head SPECT scanner which has been adapted to allow multi-pinhole imaging with high resolution and sensitivity.



MAGNETIC RESONANCE

The cardiovascular MR group includes investigators in the Departments of Medicine, Radiology, and Biomedical Engineering. The group has NIH funding for the development of novel MR approaches to imaging human peripheral arterial disease (plaque imaging, spectroscopy, perfusion) coronary angiography and wall imaging; and assessing LV function in transgenic and knockout mouse models. Other research interests include myocardial perfusion, myocardial infarction and viability, ER assessment of chest pain, cardiomyopathies, predicting response to resynchronization in congestive heart failure, and real-time dobutamine stress testing. Equipment includes two research 1.5T clinical/large animal scanners, and 7T and 4.7T small animal scanners.



Structure:

- Each fellow spends 2 years in the training program. Fellows either select in-depth training in one modality or training in more than one modality. Fellows have the ability to work in either or both the experimental or clinical imaging laboratories.
- All MD's who desire high level expertise in one or more modalities of clinical imaging need to perform enough examinations in order to qualify as a director of clinical and research laboratories at their institutions.
- In addition to the modality-specific training that they will acquire from their mentors (supervisors), each fellow has formal training in biostatistics from the Department of Public Health Sciences.

Faculty:

- Director: George A. Beller, MD, Ruth C. Heede Professor of Medicine, former chief of the Cardiovascular Division, president of the American College of Cardiology, and internationally known expert in nuclear cardiology.
- Co-director: Christopher M. Kramer, MD, Professor of Radiology and Medicine, director and internationally known expert in cardiac magnetic resonance imaging.
- Additional faculty that will interact with trainees include cardiologists, radiologists, engineers, physicists, molecular biologists, chemists and biostatisticians from six Departments within the University of Virginia School of Medicine.