

# Center for Cardiovascular Biomedical Imaging

## Co-directors

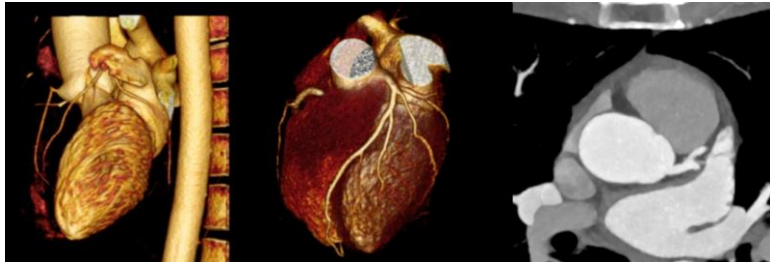
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## The **Center for Cardiovascular Biomedical Engineering (CCBE)**

comprises teams of engineers, physicians, graduate students and clinical fellows to bring new imaging technologies into clinical use. Teams are focused on developing solutions for major unmet needs in clinical medicine. The technologies developed can be generated from many disciplines: the physics of image acquisition, imaging hardware, novel clinical protocols, signal processing and image analysis. The broad experience and expertise of the teams encourage rapid prototyping and feedback between disciplines and immediate application to clinical problems.

Partnerships with industry give teams the access to engineering expertise and both novel hardware and software to accelerate the development of new clinical techniques. The ultimate goal of the Center is to rapidly put in place new methods of diagnosis and image-guided therapy to reduce suffering. Success is measured by more precise application of therapy and better patient outcomes.



Members of CCBI develop new imaging biomarkers for early disease detection and new image-guided techniques for precision therapy. Our goal is to dramatically lower death and morbidity through the application of this customized therapy.

**Early detection of cardiovascular disease is now possible with new imaging techniques; patients can now receive precision therapy to address their own needs.**

As an example, for cardiovascular disease modern CT and MRI techniques allow physicians to evaluate both the morphological and functional states of the human cardiovascular system.

Unprecedented resolution and accuracy in vessel morphology, flow, and muscle function and tissue perfusion permit patients and their physicians to plan the appropriate prevention and therapy. Applications include the detection of coronary artery disease well before clinical symptoms arise and the early detection of heart failure.

Determination of the appropriate pharmacologic therapy such as statins and anti-coagulation therapy, and determination of the appropriate intervention such as vessel stenting can be vastly improved with new imaging methods under development.

