

**University of Southern California**  
**VITERBI SCHOOL OF ENGINEERING**

Master of Science in Biomedical Engineering (Medical Imaging and Imaging Informatics)  
*Program Learning Objectives*

The purpose of the USC Viterbi School of Engineering Master of Science in Biomedical Engineering (Medical Imaging and Imaging Informatics) is to prepare students for high level professional employment in the biomedical industry that incorporates advanced technical knowledge and skills related to medical imaging informatics, including picture archiving and communication systems (PACS) and related clinical health information systems. Graduates may pursue specialized industrial employment as engineers or advanced graduate studies related to system integration, clinical workflow for acquisition and processing of medical images, and advanced research in imaging informatics.

Upon completion of the USC Viterbi School of Engineering Master of Science in Biomedical Engineering (Medical Imaging and Imaging Informatics), students will:

- demonstrate advanced technical knowledge and skills related to biomedical imaging modalities, digital image processing, medical imaging systems architecture, system integration, clinical workflow, and imaging informatics. Students' skill set will succinctly align with the National Academy of Engineering's Grand Challenges, and specifically, to advance health informatics.
- be able to apply critical principles and practices pertinent medical imaging and imaging informatics in their employment practice.
- be able to work in diverse global contexts and apply universally accepted and globally-centric standards and practices pertinent to the biomedical imaging industry.
- demonstrate understanding of contemporary engineering design principles and associated innovative practices relevant to the medical imaging and health information industry, including medical image acquisition and processing, in particular magnetic resonance and ultrasound imaging, medical systems integration and informatics, database management and computer communications. Students will be able to implement these practices under guidance of biomedical engineering faculty members in preparation for employment in the biomedical imaging or health informatics industries.