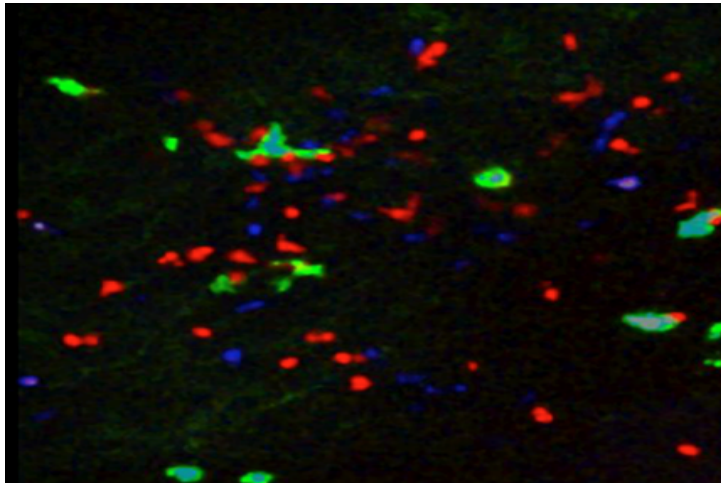


Center for Multiscale Imaging of Living Systems



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Multiscale imaging of living systems from the atomic to the molecular, cellular, tissue, organ and whole organism level is essential for mechanistic in vivo research, biomarker discovery and applications, medical practice, and personalized medicine. UCSD, The Scripps Research Institute, the Salk Institute for Biological Sciences, the Sanford-Burnham Institute and the La Jolla Institute of Allergy and Immunology, as well as other research groups in La Jolla have developed significant capabilities in this area. The Center for Multiscale Imaging of Living Systems is organized under the auspices of the Institute of Engineering in Medicine with the goal of expediting the development and application of new imaging methods, promoting interdisciplinary research and applications for funding, and to foster industry-academia relationships in the area of multiscale imaging.



Multiscale imaging of living systems impacts all areas of medicine, including the cardiovascular system, cancer, neurology, and the musculoskeletal system.

The technology focus encompasses Molecular, Cellular, Organ and Whole Organism Imaging.

New technology development is needed to achieve in vivo molecular imaging on a dynamic timescale in the minute, second and subsecond domains. Coregistration and fusion between modalities as well as morphing remain engineering challenges that need to be tackled to make multiscale imaging truly useful. New reporter systems for in vivo transfection, new molecules to provide contrast, and research into cellular mechanisms of contrast agent interactions require cell and molecular biological approaches.

