NSF IGERT Program at The University of California at Riverside

Graduate Ph.D. Traineeship in
Video Bioinformatics

Video Bioinformatics (as defined by Professor Bir Bhanu) deals with the automated processing, analysis, understanding, data mining, visualization, query-based retrieval/storage of biological spatiotemporal events/data and knowledge extracted from videos obtained with spatial resolution varying from nanometer to meter of scale and temporal resolution varying from seconds to days and months. Video Bioinformatics IGERT Program integrates expertise from the life sciences, electrical engineering, computer science, and bioengineering to enable breakthrough capabilities in understanding biological processes that are by nature continuous and dynamic. Life sciences students will gain an understanding of the engineering principles involved in imaging, video processing, analysis, data mining, and databases. Engineering students will learn biological imaging and computational techniques, design of experiments and modeling of phenomena, and they will gain a finer appreciation for the biological community's needs.

Research Themes:

- **Organismal Dynamics**
    - Tracking evolutionary changes using morphology
    - Analyzing physiological processes
    - Analyzing injury and disease
    - Analysis of organs using multiple imaging techniques
- **Intercellular and Tissue Dynamics**
    - Cell motility
    - Morphogenesis and development
    - Cell-cell or cell substrate interactions – Bacterial adhesion
- **Intracellular Dynamics**
    - Organelle and protein movement
    - Protein-protein interaction
    - Protein folding/topology
    - Cell signaling
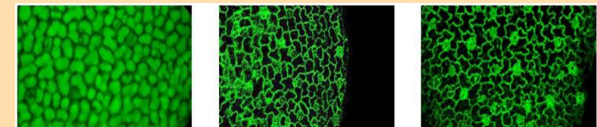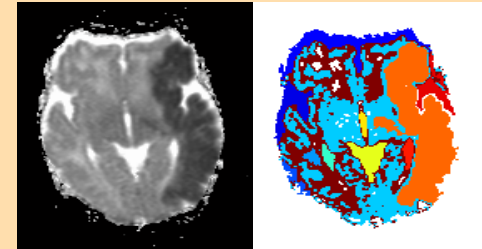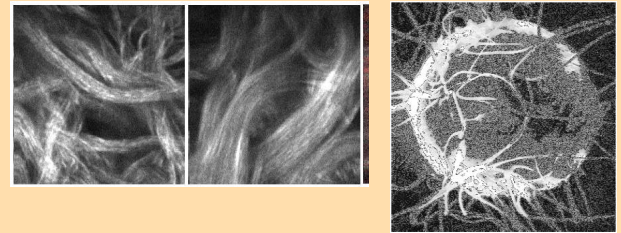
Program Benefits:

- $30K/year
- Full Tuition and fees
- 1 yr Non-Resident Tuition for students outside California
- 1 conference/year

Participating Doctoral Programs Include:

- Electrical Engineering, Bioengineering, Computer Science and Engineering
- Mechanical Engineering, Chemical and Environmental Engineering
- Cell Biology and Neuroscience, Botany and Plant Sciences, Plant Pathology and Microbiology
- Biomedical Sciences, Biology, Nematology, Entomology, Psychology

Applications Due:

***Applications are being accepted right now. ***

NSF IGERT Video Bioinformatics, Program Director: Professor Bir Bhanu

For more information, please contact Michael Caputo at **michael.vislab@gmail.com** or visit
http://www.cris.ucr.edu/IGERT/index.php