The Micro/Nano Fluidics Fundamentals Focus Center (MF3) brings together 17 leading nano- and microfluidics professionals from 10 departments committed to advancing the basic science and applications of fluidics. "The promise of fluidics technology is broad and exciting," said Abraham Lee, principal investigator of MF3 and professor of biomedical engineering and mechanical and aerospace engineering at UC Irvine. "For the healthy systems, it can allow for the automated collection of samples for disease diagnosis and monitoring. For the harmful systems, it can be used to prevent disease and treat its effects in an efficient and non-invasive way."

The center is a spin-off of activities completed at the Integrated Nanosystems Research Facility, an interdisciplinary research laboratory in The Henry Samueli School of Engineering that was created with a $10 million endowment from the California Technology Foundation and a center grant from the National Science Foundation. The center will build on the successes of INRF with a focus on preparing and handling small amounts of fluids on microchips. With scientists representing the disciplines of biomedical, mechanical and electrical engineering, as well as chemistry, research is expected to apply nanofluidic behavior to areas such as health care, electronics, and environmental and food monitoring.

"The center is an opportunity to interact with researchers and professors from the full range of sciences and disciplines that make up the School of Engineering," said Steven George, WMJ Link Professor and Chair of Biomedical Engineering at UC Irvine. "It will provide a wonderful opportunity to showcase our talented faculty and students on a national stage, which will be a tremendous boost to the visibility of the School, the UC Irvine campus, and the University of California system."

Additionally, MF3 will provide graduate students the opportunity to work with researchers and professors from across the College of Engineering, as well as other campus units. MF3 will also provide opportunities to undergraduates, who will have the opportunity to work with MF3 members on undergraduate research projects. MF3's educational mission includes an outreach component, with plans for a workshop for area high school students in the fall of 2007.

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Professor Enrico Gratton Shares Information About Fluorescence Across the Globe

Enrico Gratton, Ph.D., professor of biomedical engineering, joined UC Irvine in 2006 after 30 years at the University of Illinois at Urbana-Champaign. Gratton is the principal investigator of the Laboratory for Fluorescence Dynamics (LFD), founded in 1986, re-located from Illinois to Irvine, California, in 1998. The LFD is one of the largest biomedical fluorescence spectroscopy groups in the world, and is now located on the National Institute of Health's campus.

The LFD is the flagship of the biomedical fluorescence spectroscopy research at UC Irvine, and is an important center for the training of future biomedical scientists. The LFD's research interests are in the development and application of time-resolved (fluorescence and Raman spectroscopy, microscopy, biochemistry, cell culture and data analysis) and steady-state (fluorescence, microscopy, biochemistry, cell culture and data analysis) techniques and methods for the analysis of biological systems. The LFD's research is funded by grants from the National Institutes of Health, the National Science Foundation, and other federal and private foundations.

As an important contributor to the LFD, Gratton is currently developing a new program to provide graduate students with the opportunity to learn from and collaborate with experts in the field of biomedical fluorescence spectroscopy. This program will be offered to students in the Department of Biomedical Engineering at UC Irvine, and will include a series of lectures, workshops, and seminars on the latest developments in the field of biomedical fluorescence spectroscopy. The program will also provide students with the opportunity to work on research projects with LFD faculty members and other experts in the field.

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