

Graduate student Carol Chao (Advisor: Professor Abe Lee) is developing photolithography processes, along with thin film spin coating, molding and plasma etching, to create surface microfluidic devices using shape memory polymers. These devices will have many biomedical applications, including diagnostics, drug delivery and health monitoring.



THE HENRY SAMUELI SCHOOL OF ENGINEERING

UNIVERSITY OF CALIFORNIA IRVINE

DEPARTMENT OF BIOMEDICAL ENGINEERING

DEPARTMENT TO HOST UC SYSTEMWIDE BIOENGINEERING SYMPOSIUM



This summer, the Department of Biomedical Engineering will be hosting the 2004 UC Systemwide Bioengineering Symposium. This will be the fifth such symposium, and the focus remains largely unchanged; namely, to bring faculty, students and post-graduate researchers from all of the UC campuses together with members of the private sector who are interested in bioengineering research. We are anticipating more than 300 people will attend this year's conference, making it an excellent opportunity

to foster the exchange of ideas and information between members of both the university and private sector communities. The event also will showcase the biomedical engineering talent of our faculty and students.

A particular focus of this year's meeting will be university-based bioengineering technologies that are applicable for translation to the private sector. In addition to this focus, there will be scientific sessions in a wide array of bioengineering topic areas that include biomaterials, biomechanics, cell and tissue engineering, biomedical devices including nano- and microscale systems, bioinformatics/functional genomics, biomedical photonics and imaging, neuroengineering and cardiovascular engineering.

The meeting will be held from June 26-28, 2004 at the Atrium Hotel in Irvine, CA. I hope you will be able to attend, and invite you to explore the Web site (ucbioeng2004.eng.uci.edu) for further details about registration, accommodations and abstract submission.

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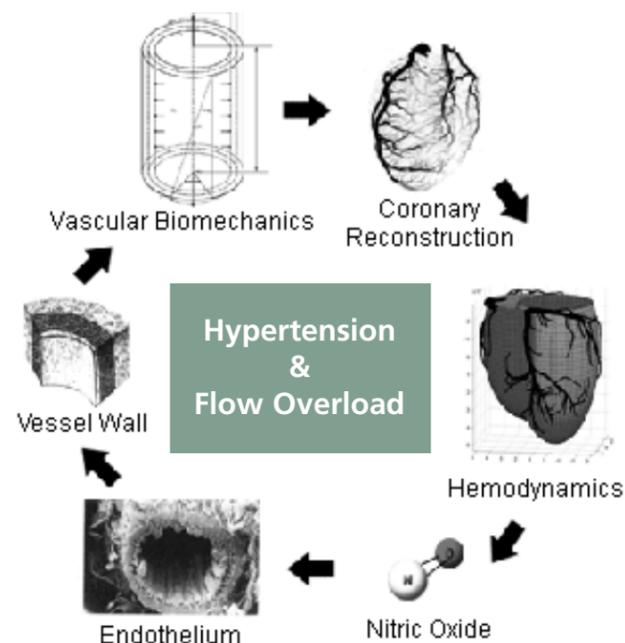
FACULTY PROFILE: GHASSAN KASSAB



Associate Professor Ghassan Kassab trained with the legendary Y.C. Fung in biomechanics at UCSD, where he received his Ph.D. in 1990 (summa cum laude). He was recruited from UCSD to UCI in July 2001. Kassab's current research interests encompass the biomechanics of the cardiovascular system in health and during diseases such as hypertension, flow-overload and heart failure. He is interested in the structure-function relationship in the cardiovascular system and, in particular, the coronary circulation under physiological and patho-physiological states. His approach includes both experimental and computational studies. He utilizes the experimental reductionist approach to dissect the coronary vascular system into its molecular, cellular and tissue components (e.g., nitric oxide, endothelium, micro-structural components of the vessel wall, blood vessel wall, etc. as shown in the figure). The computational integrative approach is then used to synthesize the entire coronary vascular circuit to understand the whole organ.

Kassab is currently the principal investigator on three grants (National Institutes of Health and American Heart Association) and a co-PI on two additional NIH grants. In recognition of his research, he has received several honors and awards, including an AHA fellowship, NIH Young Investigator Award and AHA Established Investigator Award. Kassab's group

consists of several fellows (Jenny Choy, Xiaomei Guo, Xiao Lu and Wei Zhang), graduate students (Charles Dang, Marisa Garcia, Benny Kaimovitz and Nishant Mittal) and laboratory managers (Deniz Ari and Carlos Linares).



Students Tackle Real-World Problems in New Design Course

The senior capstone design course will be taught in a two-quarter sequence in fall 2004 and winter 2005. The main objective is to teach the essential design concepts by using hands-on group projects to apply these principles. The projects will be developed together with select local biomedical device companies. Active participation from these companies in mentoring and training the students is expected. One important criterion for selecting the partner companies will be their relevance to the clinical setting, so that students are educated not only on industrial issues but also on the clinical aspects of designing biomedical instrumentation or tools.

The first quarter will start with two weeks of lectures to instill comprehensive design concepts and logistics in today's BME industry. After that, students will start to work in groups and interact with the partner company of choice to design a solution or tool for a biomedical problem. Every week after the first two weeks, there will be a focused discussion on a selected design concept explained by the two faculty members. The inaugural course will be taught by Professors Abe Lee and Bill Tang.

BECKMAN COULTER PARTNERS WITH UCI TO HIRE OUTSTANDING UNDERGRADS

Beckman Coulter, headquartered in Orange County, is a world leader in developing, marketing and manufacturing instruments, chemistries, software and supplies that simplify and automate laboratory processes. With over \$2 billion in sales, Beckman Coulter's products support biomedical analysis in all phases of the battle against disease--from pioneering medical research through patient blood testing.

Beckman Coulter has partnered with the UCI SAGE Scholars Program to identify and hire outstanding UCI undergraduates to serve in exciting internships at their company. Through the SAGE ("Student Achievement Guided by Experience") Scholars Program, companies offer paid two-year internships to talented and highly motivated UCI students related to their field of study. During these internships, sponsors provide real world business experience and focused mentoring. SAGE Scholars are required to participate in coursework specially designed to enhance their professional and leadership skills. In addition to wages for their work, the students also receive financial awards of up to \$4,000 per academic year to support their studies.

Last summer, Beckman Coulter sponsored three students through the SAGE Scholars Program and plans to at least double that number this year. Elias Caro, president of the company's Biomedical Research Division, says, "through SAGE, Beckman Coulter is making an investment in identifying and hiring outstanding UCI students who can make real contributions to biomedical research." For more information about the SAGE Scholars Program, visit www.sagescholars.uci.edu.

Graduate Enrollments

	1999	2000	2001	2002	2003
M.S.	2	3	2	5	9
M.D./Ph.D.	0	0	0	1	2
Ph.D.	2	11	17	37	46

This graph shows the total enrollment in the BME graduate program for the years 1999 to 2003. Students are classified into one of three categories indicating their planned terminal degree: M.S., Ph.D., and M.D./Ph.D.

