

UC Davis–Zhejiang University Summer School of Research 2009

— *An International Outreach Program between UC Davis and Zhejiang University*



OBJECTIVE

Under this international outreach program, we plan to establish a summer school of research to strengthen existing collaborative research and education efforts between two campuses (UC Davis and Zhejiang University). The proposed program aims at *(1) developing a global education hub at UC Davis, (2) establishing a research alliance in the strategic research directions, (3) promoting leading research programs at UC Davis and training the next generation of international leaders in the fields.*

UNIVERSITY OF CALIFORNIA, DAVIS

The University of California, Davis is the most comprehensive of the ten UC campuses with 4 colleges, 5 professional schools, 103 academic programs, and 86 graduate programs. As the premier US university, UC Davis is a Tier One research university and ranks 11th among the public universities in research funding, leading in interdisciplinary research and study. Among all US institutions, UC Davis awards the most bachelor's and doctoral degrees in science. Furthermore, UC Davis is a global campus that is deeply committed to international education. Ranking fourth in hosting international scholars in US, UC Davis has hosted over 5,800 international scholars and students from 131 countries. To create bold solutions to global problems through collaborations, we have developed significant undergraduate exchange programs with top-tier universities throughout the world and institutionalized a global citizenship goal through its undergraduate curriculum.

UCD-ZJU SUMMER SCHOOL OF RESEARCH

Known for the top-notch veterinary medicine, agriculture, and biology programs and the excellent clinical medicine and engineering education and research environment, UC Davis strengthens its international leadership in the strategic directions in its new centennial, including the future medicine, clean environment, renewable energy, and nanotechnology. Under this leadership, we are to provide a summer research program in the fields of micro-nano bioengineering, and agriculture sciences. Our objective is to educate the next generation of leading scientists and researchers in the crucial fields for the 21st century, and, our program serves, in addition, as an international research and education forum for multidisciplinary collaboration on the global grand challenges. In the *UCD-ZJU Summer School of Research 2009*, we offer two research directions for incoming student interns, including *Micro-Nano Bioengineering* and *Agricultural and Environmental Sciences*. Toward this end, for Summer 2009, we will accept up to 25 students from Zhejiang University in an extensive summer research training (10 weeks) on the UC Davis campus. These trainees should have fundamental commitment to the summer research and education program, and will be matched with the participating UC Davis mentors from various departments, which represent a broad and interdisciplinary coalition of the campus-wide initiative. The summer research provides an excellent opportunity to expose the student trainees to challenges, excitement, and satisfaction of research environment at UC Davis. Students gain experience in using modern research techniques, designing and executing experimental strategies, and collaborating with other researchers. More importantly, the potential long-term collaboration opportunities, between the UC Davis mentors and the faculty members of the partner institutes, can be identified and fostered through the summer program. The UC Davis international research symposium will be held at the end of the program, which integrates the campus-wide efforts in the international research and education, highlights the research progress over the summer school, and provides an interdisciplinary collaborative forum to connect students and faculty members from cross-disciplinary over the campus.

PROGRAM BENEFITS

Students will obtain the following benefits from the *UCD-ZJU Summer School of Research 2009*:

- Gain cutting-edge research experience in state-of-the-art laboratories under the mentorship of leading faculty members at the UC, Davis, e.g., planning experiments, managing time, analyzing research results, presentation skills, and ethical issues.
- Develop a competitive edge in applying for US master's and doctoral programs as well as establish academic relationships with faculty mentors and graduate students within the diverse cultural and ethnic environment of UC Davis.
- Participate in the UC Davis International Research Symposium with scholars and students engaged in interdisciplinary research collaborations.
- Experience the rich cultural and recreational activities in northern California, including three field trips to San Francisco, Lake Tahoe, and Sacramento (the Capitol of California).
- Obtain a UCD-Zhejiang University Certificate of Completion in the Summer School of Research.
- Potentially participate in the CSC sponsored doctoral or joint doctoral research program at UCD.

RESEARCH AREAS

Micro-Nano Bioengineering. Micro-nano bioengineering is an emerging field where the state-of-the-art micro- and nano-fabrication technology is being coupled with modern biological and clinical applications. The goal of the field is to develop technologies and instrumentations for biomedical needs using micro- and nanoscale engineering tools. This promising field covers multi-dimensional and highly interdisciplinary research areas, and involves diversified scientific and engineering knowledge from biological, chemical, physical and medical aspects. Research advances lead to better understanding of fundamental biological and pathological processes and discovery of more efficient clinical diagnosis and therapeutics. Our plan targets at addressing the research and education challenges of the emerging field through international collaborative efforts. Due to the multidisciplinary natures, we welcome highly motivated students with various engineering and science background from diverse disciplinary to participate the summer school of research in micro-nano bioengineering, including biomedical, chemical, electrical, environmental, mechanical engineering, physics, chemistry, biology, and neural science. One-to-one mentorship will be provided to the participating students with the opportunities to gain breadth and depth of the cutting-edge micro-nano bioengineering research. Students will be placed primarily in research laboratories in the micro-nano bioengineering program.

Participating Faculty Mentors. Detailed information about faculty mentors and research laboratories in the micro-nano bioengineering program can be found on the website: <http://biomems.ucdavis.edu>.

Participating UC Davis Faculty	Affiliations
Michael Delwiche	Agricultural Engineering
Angie Louie	Biomedical Engineering
Laura Marcu	Biomedical Engineering
Tingrui Pan	Biomedical Engineering
Alexander Revzin	Biomedical Engineering
Scott Simon	Biomedical Engineering
Abdul Barakat	Mechanical Engineering
Cristina Davis	Mechanical Engineering
Jean-Pierre Delplanque	Mechanical Engineering
David Horsley	Mechanical Engineering
Ian Kennedy	Mechanical Engineering
Saif Islam	Electrical Engineering
Richard Kiehl	Electrical Engineering
Kit Lam	School of Medicine
Min Zhao	School of Medicine
Tonya Kuhl	Chemical Engineering
Frank Yaghmaie	NC ² Facility, Director

Other Areas of Research at UC Davis. A small number of students may be placed in other leading areas of research on the UC Davis campus, such as agricultural and environmental sciences, alternate energy research, and the biological sciences (e.g., genetics and neurosciences). Faculty members in the other areas of research will be identified before the program commences.

APPLICATION PROCESS

Applicants need to submit the following materials to the Summer Program Coordinator at Zhejiang University, including

1. **Resume** (1 page) demonstrating strong academic credentials (including the accumulative GPA and academic ranking) in relevant academic fields.
2. **Personal Statement** (1 page) describing academic background and interest in the proposed area (micro-nano bioengineering or other relevant fields including agricultural, environmental and biological sciences, and energy research) as well as identifying **three potential faculty mentors** at UC Davis.
3. **Language requirement** (TOEFL, CET-6, or equivalent examination).
4. **Priority** will be given to the undergraduate and graduate students intended to participate the CSC sponsored doctoral or joint doctoral research program at UCD.

STUDENT SELECTION PROCESS

1. Initial screening will be conducted at Zhejiang University based on academic backgrounds, compatible research interests, and language and communication skills of the applicants.
2. The list of recommended students will be submitted to Dr. Nicole Ranganath, the UC Davis Program Director
3. UC Davis will notify Zhejiang University with final decisions about students' admission into the program.
4. The program coordinator will contact the research director, Prof. Tingrui Pan, and the faculty members in the reviewing committee to match students with appropriate faculty mentors. Faculty and students' interests will be matched to the best of our ability. UC Davis faculty will make the final decision as to whether a student will be able to work in his/her department.

PROGRAM LENGTH

Students will participate in laboratory research at UC Davis for a ten-week period. The 2009 Summer School of Research will begin July 1 and end August 28.

NUMBER OF STUDENTS

Maximum number of student participants will be 25 for the *UCD-ZJU Summer School of Research 2009*.

PROGRAM COSTS

The total program cost for each student for a ten-week period will be U.S. \$3,500. The program costs will include faculty mentorship, an interdisciplinary research symposium, graduation and certificate ceremony, housing in shared apartments, laboratory materials, local transportation (bus passes and bicycles), three field trips, library and gymnasium access, and administrative costs.

Participants will be responsible for the following costs:

- International travel expenses
- Health insurances
- Food and meals
- Mailing expenses
- Visa application fees
- Transportation for weekend visits
- Evening activities, shopping and visits
- Personal telephone bills, outings, and other personal expenses.

PROGRAM ADMINISTRATION

The UC Davis-Zhejiang University Summer School of Research will be administered by UC Davis Extension in partnership with faculty in micro-nano bioengineering research program and other key research fields. UC Davis Extension will provide support for the visa, payment, and application processes, overall coordination of the program, placement of the students in research laboratories, field trips, distribution of transcripts, and logistics.

Professor Tingrui Pan will serve as the Faculty Research Director, and will be responsible for oversight of the academic quality of the program in biomedical engineering. Dr. Nicole Ranganath will serve as the Program Director, and will be responsible for overall coordination beyond biomedical engineering, as well as overall program management.

PROGRAM CONTACTS

Research Director

Dr. Tingrui Pan
Assistant Professor and Director
Micro-Nano Bioengineering Research Program
Department of Biomedical Engineering
Email: tingrui@ucdavis.edu
Phone: (530) 754-9508
Fax: (530) 754-5739

Program Director

Dr. Nicole Ranganath
Director, Global Study Program & International
Initiatives, Center for International Programs
UC Davis Extension
Email: nranganath@ucdavis.edu
Phone: (530) 757-8618
Fax: (530) 757-8596

University of California, Davis
Davis, CA 95616
USA

Program Coordinator

Mr. Luo Jian
Office of International Relations
Email: luojian11@zju.edu.cn
Tel: 86-571-88981856
Fax: 86-571-87951315

Zhejiang University
Hangzhou, Zhejiang 310058,
P.R. China