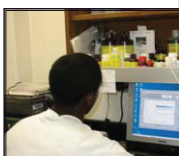
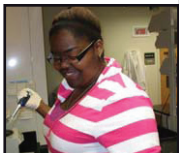


UC SANTA BARBARA INSTITUTE FOR COLLABORATIVE BIOTECHNOLOGIES 2009 SUMMER RESEARCH PROGRAM

June 17-August 19, 2009

The University of California, Santa Barbara Institute for Collaborative Biotechnologies (ICB) is a uniquely interdisciplinary research environment, with a mission of transforming biological inspiration into technological innovation. The ICB Summer Research Internship in Science and Engineering at UCSB brings science and engineering majors from across the U.S. to UCSB for a summer research experience. Interns are partnered with a mentor of similar interest, conduct research in our state-of-the-art laboratories, attend research seminars, receive training in career development skills, and participate in social activities.



PROGRAM HIGHLIGHTS

- 10-WEEK SUMMER RESEARCH EXPERIENCE
- \$4000 STIPEND
- UP TO \$500 FOR TRAVEL
- HOUSING AND MEALS PROVIDED
- CAREER DEVELOPMENT WORKSHOPS
- SEMINAR SERIES

**Application deadline
March 2, 2009**

**Award announcements will begin
April 20, 2009**

[HTTP://WWW.ICB.UCSB.EDU](http://www.icb.ucsb.edu)

For additional information

**Roxanne Defendini
805-893-8334
rdefendini@cs.ucsb.edu**



**Institute for Collaborative Biotechnologies (ICB)
Summer 2009 Research Program**

A COMPLETED INTERNSHIP APPLICATION PACKET INCLUDES THE FOLLOWING:

1. **A completed student application form**
2. **A statement of interest** explaining your research interest, background, and how this internship fits into your future career goals. Your essay should be typed, and at most one page long.
3. **A copy of your unofficial transcript. (includes courses and grades)**
4. **A letter of recommendation** from a course instructor, TA or employer who is familiar with your scientific skills.
5. **Project interest list**

All items may be sent by e-mail. Acceptable file formats for attachments are Microsoft Word and Adobe Acrobat (pdf). Unofficial transcripts can be scanned in and converted to pdf file format, or downloaded from online grade reporting systems. If you do not know how to do this, send a paper copy by post.

PLEASE INCLUDE YOUR LAST NAME AS PART OF THE FILE NAME FOR ALL ATTACHMENTS!

Application Deadline is March 2, 2009

Questions or concerns about the ICB Summer Research Program? Contact:

Roxanne Defendini
Computer Science
University of California, Santa Barbara
Santa Barbara, CA 93106
(805) 893-8334
rdefendini@cs.ucsb.edu
Fax: (805) 893-5435

ICB Summer 2009 Research Program Information

June 17-August 19

Sponsored by the Institute for Collaborative Biotechnologies (ICB)
University of California Santa Barbara

Research Internship in Science and Engineering

The Institute for Collaborative Biotechnologies (ICB) at the University of California, Santa Barbara is seeking masters and undergraduate science and engineering majors who are interested in pursuing a research experience. The internship program will bring masters and undergraduate students from around the country to the UC Santa Barbara campus for a 10-week summer research experience.

Trainees will gain first-hand experience in scientific investigation in a dynamic, collaborative research environment. They will be matched individually with UCSB faculty and graduate student lab mentors who will provide training and support.

In addition to research, the trainees will also participate in weekly group meetings to develop oral presentation skills, attend special seminars and present their results at a end-of-the-summer poster session.

About ICB...

To learn more about the Institute for Collaborative Biotechnologies research and faculty, please go to the following web site:

www.icb.ucsb.edu

The Institute for Collaborative Biotechnologies supports a broad range of multidisciplinary research in areas including Psychology, Computer Science, Physics, Chemistry and Biochemistry, Chemical Engineering, Biology, Computer Engineering, Mechanical Engineering, Bioengineering and Materials Science.

Questions or Concerns?

Contact Roxanne Defendini at (805) 893-8334 or
rdefendini@cs.ucsb.edu

Program Details:

The ICB Summer Research Program will run from June 17 to August 19, 2009
Approximately 8 internships will be awarded in all areas of science and engineering. Awards will be concentrated in but not limited to ICB.

The stipend for masters and undergraduate interns is \$4000 total for 10-weeks.

Food and lodging are provided.

Travel costs up to \$500 will be provided for travel to and from the UCSB campus.

Student Eligibility:

This is a competitive research program and is open to any science or engineering undergraduate or masters student. Student must be enrolled as a junior, senior or masters student in fall 2009.

Application Process:

The trainee application must include the following components (See application form for more details)

- 1. Competed student application**
- 2. One page statement of interest**
- 3. A Copy of your unofficial transcript**
- 4. One letter of recommendation**
- 5. Project interest list**

Send your application to:

Roxanne Defendini
Computer Science

University of California
Santa Barbara, CA 93106-5110

Or via e-mail to rdefendini@cs.ucsb.edu

Fax: (805) 893-5435

APPLICATION DEADLINE: March 2, 2009 /Award announcements will begin April 20, 2009

Only completed applications will be reviewed for award

Institute for Collaborative Biotechnologies Project List

BIOMOLECULAR SENSORS (Task Leaders: Gui Bazan, Kim Turner)	
Project Leaders	Project Titles
Kevin Plaxco, Alan Heeger, Pierre Petroff	Electronic, Label-Free DNA Sequence Detection
Carl Meinhart, Kim Turner	Electrokinetics for BioMEMS Detection
Martin Moskovits, Kevin Plaxco	Biosensing Using Surface Enhanced Raman Spectroscopy: Constructing Nanostructures for Enhancing Optical Detectivity of Bioagents to the Single Molecule Level
Norbert Reich	Nanoparticle Energy Transfer (NPET) Based Bio- and Chemical Detection
Kim Turner	Mass Sensor Based on Parametric Resonance
Glenn Fredrickson	Theoretical Investigations of Polyelectrolyte Complexes for Biosensors
Gui Bazan, Alexander Mikhailovsky	Optical Amplification of Fluorescent Bio-Sensors Using Light-Harvesting Conjugated BioPolymers
BIO-INSPIRED MTRLS & LIGHTWT PORTABLE ENERGY (Task Leaders: Dan Morse, Angela Belcher)	
Project Leaders	Project Titles
Dan Morse	Biomimetic Synthesis of Cobalt-Oxohydroxide Materials for Improved Power:Weight Efficiency of Electrical Batteries
Galen Stucky, Martin Moskovits	Molecular Assembly of Multifunctional Systems and Arrays
Alan Heeger, Quyen Nguyen	Flexible Photovoltaics
BIO-INSPIRED NETWORK SCIENCE (Task Leaders: Richard Murray, Joao Hespanha, Frank Doyle)	
Project Leaders	Project Titles
Frank Doyle, Linda Petzold	Sensitivity Analysis for Discrete Stochastic Simulation of Biochemical Networks
Jean Carlson (John Doyle)	Robust Yet Fragile Behavior in Complex Bio- and Bio-Inspired Networks
Linda Petzold, Peggy Cotter	Towards the Development of Multiscale Simulation of a Bacterial Phosphorelay Sensory Transduction System
Joao Hespanha, Mustafa Khammash, Upamanyu Madhow	Computation and Control in Large-Scale Stochastic Networks
Frank Doyle, Dan Morse	Signal Integration in Control of Coral Lifecycles as a Model for Mobile Ad Hoc Networks
Francesco Bullo, Jeff Moehlis	Bio-inspired Stochastic Search and Decision Making for Robotic

PLEASE SUBMIT THIS PAGE WITH YOUR APPLICATION

Name _____ Home Institution _____

Institute for Collaborative Biotechnologies Project List (Cont'd)

BIOTECHNOLOGICAL TOOLS FOR DISCOVERY (Task Leaders: David Tirrell, Patrick Daugherty)	
Project Leaders	Project Titles
Patrick Daugherty	High-Performance Multifunctional Affinity Reagents Using New Scaffolds and Non-Canonical Amino Acids
Matt Tirrell, Joe Zasadinski	Controlled Self-Assembly of Synthetic, Biologically Active Amphiphilic Molecules at Surface and Interfaces to Produce Multifunctional Specific Cell and Molecular Recognition
Tom Soh	High Purity Microbial Cell Sorting on Chip
Jacob Israelachvili, Kimberly Turner	Processing, Characterization and Optimization of Nano-Films for Adhesion and Sensor Applications
Dennis Clegg, Craig Hawker, Lincoln Johnson	Instructive Biomaterials for Stem Cell Differentiation
John Lew	Development of a simple and rapid diagnostic of traumatic brain injury in soldiers in the field

Using the project list provided , please identify 3 or 4 projects at UC Santa Barbara that interest you. For details about each project visit <http://www.icb.ucsb.edu> Please note that this does not guarantee placement with your chosen project area, but helps us place you with a lab that matches your interests.

1. _____ 2. _____
3. _____ 4. _____

PLEASE SUBMIT THIS PAGE WITH YOUR APPLICATION

ICB Summer 2009 Research Program Student Application

All fields must be completed

First Name _____ Last Name _____

E-mail Address _____

Current Address:

Street _____

City _____ State _____ Zip _____

Phone: _____ Cell: _____

Permanent Address (if different from above):

Street _____

City _____ State _____ Zip _____

Current School: _____

Dates of Attendance: _____

Field of Study/Major _____

Class year to be entered in Fall 2009 (check one) Junior Senior Masters

Expected Graduation Date _____

Current plans after graduation (It's OK to say you don't have any)

Optional information, but is requested for future reporting to funding sources:

Gender (please check one) male female

Ethnicity (check all that apply) African-American Asian Latino Native American/Alaskan
 Pacific Islander Other

If you chose "other" please specify _____

Do you have any disabilities or special needs? yes no

If yes, please explain _____

Will you be the first in your family to graduate from college? yes no

First Name _____ **Last Name** _____

E-mail Address _____

Please list the person that you have asked to write a letter of recommendation: _____
(Only 1 letter is required)

List all relevant coursework that you have completed or are currently taking:

The following questions will help us in finding suitable project placements for trainees:

Please describe your experience in working with computers. If you have programming skills, please be specific.

Please give a brief description of your work experience. We are interested in *ALL* kinds of jobs, including non-scientific and unpaid (volunteer) work:

Do you have experience in working with technical equipment or tools? This includes lab equipment as well as shop equipment. Please be specific.

Student's Name _____

Letter of Recommendation for the ICB Summer Research Program

To the Recommender:

The student who has asked for your recommendation is applying to a summer research internship program in science and engineering at UC Santa Barbara. You may use this form below, provide a separate letter, or both. Our programs comply with the Rehabilitation Act of 1973, which prohibits discrimination on the basis of handicap. Please do not refer to any handicap the applicant may have.

Recommender's name: _____

Title and Institution: _____

E-mail address: _____ Phone: _____

Please place check marks to rank this student in the following qualities (leave unchecked if you haven't had the opportunity to evaluate student in a particular area)

	Excellent Top 5%	Very Good Top 20%	Good Top 40%	Fair Top 60%	Below average Bottom 40%
Maturity and self-confidence					
Work ethic, responsibility					
Initiative, motivation					
Interest in science/engineering					
Intellectual ability					
Problem solving skills					
Laboratory skills					
Communication Skills-written					
Communication Skills-oral					
Ability to work with others					

Please answer the following questions in the space below, or attach a separate letter to address them.

1. How long have you known this student, and in what capacity?
2. What do you know of this student's future educational and /or career plans?
3. Please give us your impression related to this student's abilities, character, and potential to succeed in a scientific research internship.

E-MAIL (OR POSTMARK) DEADLINE FOR LETTERS IS MARCH 2, 2009

Please e-mail your completed letter to rdefendini@cs.ucsb.edu. Please put the student's last name in the file name of all attachments. Alternatively, you may mail a hard copy to
Roxanne Defendini, Computer Science, University of California, Santa Barbara, CA 93106-5110