

**University of California, Santa Barbara**  
**ICB Summer Applied Biotechnology Research Experience**  
**June 17- August 19**

**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.

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**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](http://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](mailto:rdefendini@cs.ucsb.edu)

**Program Details:**

The ICB Summer Research Program will run from June 17 to August 19, 2010.

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

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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](mailto:rdefendini@cs.ucsb.edu)

Fax: (805) 893-5435

***APPLICATION DEADLINE: February 2, 2010 /Award announcements will begin March 2, 2010***

**Only completed applications will be reviewed for award**

# INSTITUTE FOR COLLABORATIVE BIOTECHNOLOGIES

## Summer Applied Biotechnology Research Experience 2010 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 2010 (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 \_\_\_\_\_

*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 FEBRUARY 2, 2010**

Please e-mail your completed letter to [rdefendini@cs.ucsb.edu](mailto: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

**B i o m o l e c u l a r S e n s o r s**

Project Leaders	Project Title
Bazan	Novel Sensory Mechanisms with Conjugated Polymers
Fredrickson	Theoretical Investigations of Polyelectrolyte Complexes for Biosensors
Meinhart & Moskovits	Microfluidic System Architecture for Rapid & High Sensitivity Detection of Chemical Agents
Moskovits, Reich & Bazan	Ultra-sensitive Detection of Biological and Explosive Hazards
Pennathur	Nanofluidic Technology for Rapid Biomolecule Manipulation and Detection
Plaxco, Heeger & Soh	Reagentless, Electronic Molecular Sensors for the Battlefield
Squires	Ion Manipulation Using Flows and Fields for Energy Harvesting and Storage
Turner	Parametrically Resonant Mass Sensor Arrays

**B i o D i s c o v e r y T o o l s**

Project Leaders	Project Title
Clegg, Hawker, Johnson	Instructive Biomaterials for Stem Cell Differentiation
Daugherty	Orally-Available Microprotein Therapeutics for Pathogen Toxin Neutralization
Israelachvili & Turner	Fabrication of Hierarchically Structured Devices for Adhesion, Mobile Sensors and Robotics Applications
Soh	Rapid Invitro Directed Evolution (RiDE) Technology

## Bio-inspired Network Science

Project Leaders	Project Title
Carlson	Robust Yet Fragile Behavior in Complex Bio- and Bio-Inspired Networks
Petzold & F. Doyle	Sensitivity Analysis and Discrete Stochastic Simulation of Biochemical Networks
Hespanha, Khammash & Madhoo	Bio-inspired Communication and Control for Networks of Autonomous Agents
F. Doyle & Morse	Signal Integration in Control of Coral Lifecycles as a Model for Mobile Ad Hoc Networks
F. Doyle & Petzold	Multiscale Computational Modeling of Metabolic Insulin Signaling Pathways

## Cognitive Neuroscience

Project Leaders	Project Title
Gazzaniga & Miller	Human Variation and Cognitive Strategy
Blascovich & Beall	Human Interactional Efficacy of Advanced Virtual Human Agents
Carlson & F. Doyle	Cognitive Neuroscience Embedded in Large-Scale Models of Systems Dynamics
Eckstein & Giesbrecht	Predicting Perceptual Decisions and Learning from Human Brain Activity Using Machine Learning Algorithms
Grafton & Ashby	Dynamic Classification and Control
Grafton & Miller	Individual Differences of Brain Structure and Function in the Brain of Combat Experienced Officers

# INSTITUTE FOR COLLABORATIVE BIOTECHNOLOGIES

## Summer Applied Biotechnology Research Experience Project List Request

Name \_\_\_\_\_ Home Institution \_\_\_\_\_

Using the project list provided , please identify 3 or 4 projects at UC Santa Barbara that interest you. For details about each project visit our website <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**

# INSTITUTE FOR COLLABORATIVE BIOTECHNOLOGIES

## Summer Applied Biotechnology Research Experience Program Information

### 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 list request.**

*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 February 2, 2010**

Questions or concerns about the ICB SABRE program? Contact:

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