

2008/09 Annual Report

CSU

The California State University

PROGRAM FOR EDUCATION AND RESEARCH IN BIOTECHNOLOGY (CSUPERB)

June 2009

Overview

This report includes the CSUPERB academic year (AY) 08/09 program highlights, symposium summary, and grants and awards program overview.

This year CSUPERB spent time working on a strategic plan that was approved by CSU Chancellor Reed in January. The plan emphasizes that biotechnology preparation requires the



2009 Howell-CSUPERB Research Scholars at the CSU Biotechnology Symposium in Los Angeles. CSUPERB partners with the Doris A. Howell Foundation for Women's Health Research to fund promising undergraduate student research projects in topics related to women's health. CSUPERB and the Howell Foundation co-fund eleven \$3000 Research Scholar Awards to support CSU undergraduate researchers. **Left to Right:** Michelle Baker (San Diego), Kaitlin Fisher (Sonoma), Mandy Butler (Howell Foundation Board member), Crystin Eggers (Sacramento), Jeffrey Evans (Fullerton), Annie Nguyen (Fullerton), Trang Lu (Pomona), Lee Wang (San Diego). *Not pictured:* Benjamin Borgo (SFSU), Erin Garrett (Fullerton), Silvia Hilt (Sonoma), Jourdan Ritchie (Fresno).

(picture above), Student Travel Grants, Faculty-Student Research Seed Grants, and Symposium Awards programs. These programs provide support for students working with CSU faculty and, hopefully, the ability to stay in the lab rather than working at an unrelated job. This year a CSUPERB taskforce, led by Jeffrey Thompson (CSU San Bernardino), drove a system-wide effort to win stem cell research funding from the California Institute for Regenerative Medicine (CIRM; see page 3) for 100 more students. Looking forward, our development efforts are aimed at funding additional student research experiences in California's world-leading biotechnology and pharmaceutical companies. You can read the 2009-2012 Strategic Plan at the CSUPERB website (<http://www.calstate.edu/csUPERB/documents/csUPERB-strategic-plan.pdf>).

"This [grant] has dramatically accelerated my laboratory's exploration of proteomic research. We have also shared this research with my Bio 405, Developmental Biology Course. In addition, it has dramatically impacted the future of four students [now at University of Michigan, Scripps Institute of Oceanography, Monash University, and Touro University] "

- N. Adams (Cal Poly San Luis Obispo, '06 Faculty Seed Grant Recipient)

2008/2009

Program Highlights

- CIRM BOARD APPROVES 10 "BRIDGES TO STEM CELL RESEARCH" AWARDS TO 11 CSU CAMPUSES, TOTALLING \$15.7M
- FEDERAL FUNDING RECEIVED FOR LOS ANGELES REGIONAL WORKFORCE TRAINING CENTER; TWO BIOTECHNOLOGY PROJECT MANAGEMENT CERTIFICATES IN DEVELOPMENT
- 2009 BIOTECHNOLOGY SYMPOSIUM IN LOS ANGELES DRAWS 570 PARTICIPANTS AND FEATURES 188 STUDENT-FACULTY RESEARCH POSTERS
- CSUPERB COMPLETES A NEW STRATEGIC PLAN (2009-2012), APPROVED BY CHANCELLOR CHARLES REED JANUARY 22, 2009

integration of coursework, hands-on practice and participation in multi-disciplinary, team-based research projects. CSUPERB believes that the best way to engage, recruit and retain students in life science careers is to provide access to and opportunities in real-world biotechnology research settings. As a result one of our programmatic goals is to increase the numbers of CSU students working in basic and applied research, clinical science, engineering, and information technology laboratories.

Each year CSUPERB funds about 100 student researchers through four main mechanisms: the Howell Research Scholars

CSUPERB 08/09 Operating Budget

SALARIES & OFFICE OPERATIONS	\$573,724
PROGRAM & GRANTS ADMINISTRATION	\$180,836
SYMPOSIUM	\$220,000
GRANTS & AWARDS	\$683,700
C-LAB (L.A. BASIN WORKFORCE TRAINING CENTER PROJECT)	\$273,058
TOTAL	\$1,931,318

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Companies Participating at 2009 CSU Biotechnology Symposium

ABBOTT VASCULAR, ALLERGAN, AMYLIN, BD BIOSCIENCES, BIOCOM, CHROMOLOGIC, CRB CONSULTING ENGINEERS, DLA PIPER, FISHER SCIENTIFIC, HYDE ENGINEERING + CONSULTING, ILLUMINA, LAB SUPPORT, LAUNCHPOINT BIOMEMS, LIFE TECHNOLOGIES, MANNKIND CORPORATION, MCDERMOTT & BULL, MERRY EDWARDS WINERY, MONOGRAM BIOSCIENCES, NEUROCRINE BIOSCIENCES, OBAGI MEDICAL PRODUCTS, O'BANION & RITCHEY LLP, OSMETECH MEDICAL DIAGNOSTICS, PROMEDICA INTERNATIONAL, RIGEL PHARMACEUTICALS, SOCALBIO, SYNAPSIS SEARCH, XENCOR, ZERO BOUNDARY

21st Annual CSU Biotechnology Symposium Highlights

This year 570 participants attended the CSU Biotechnology Symposium at the Marriott Los Angeles Airport. CSU faculty and students in attendance represented 21 of the 23 CSU campuses. Fullerton (60), Pomona (44) and Northridge (40) campuses sent the greatest numbers of symposium participants. The Symposium featured 188 faculty-student research projects, representing the work of 248 students and 99 CSU faculty mentors.

Life Technologies, a global biotech tools company, was the Diamond sponsor of the event. The sponsorships raised this year made it possible for CSUPERB to host 45 non-presenting undergraduates at the symposium. The sponsors recognize that the annual symposium provides an excellent window on biotech careers and an important opportunity to network with peer groups, faculty mentors, and professional role models working in academia and industry.



Stephanie Sprowl (2009 Pauling Award winner, CSU Fullerton) and Chandra Srinivasan (CSU Fullerton) at the Symposium Awards banquet in Los Angeles.

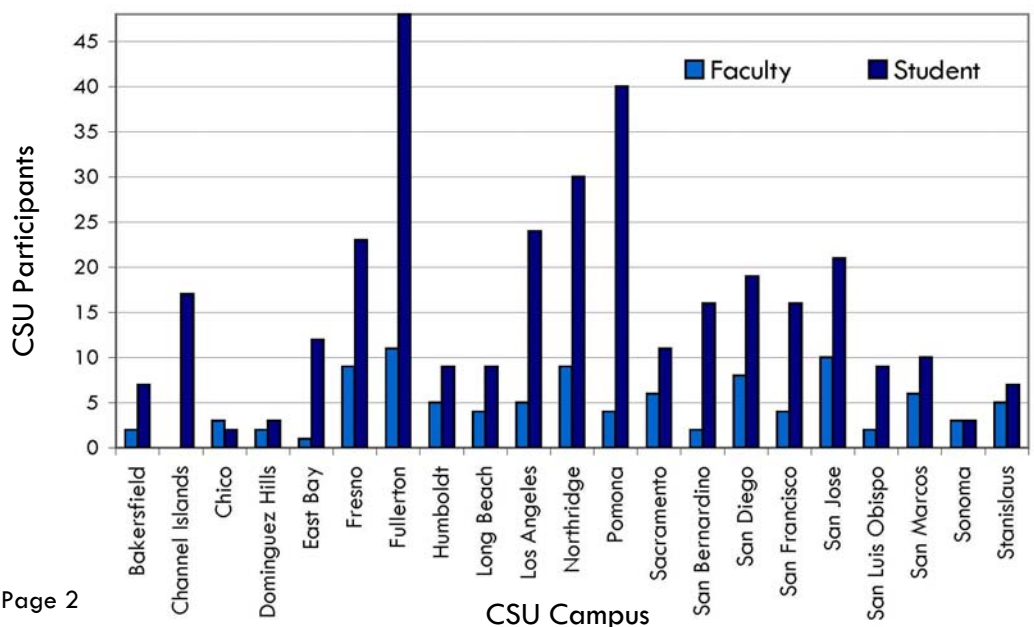
The awards session honored Representative **Adam Schiff** (CSUPERB Legislator of the Year Award), **Laura Burrus** (San Francisco State, Faculty Research Award), **Katherine Kantardjieff** (CSU Fullerton, Andreoli Award), **Shannon Lim** (CSU Fullerton, Don Eden Graduate Student Research Award), **Jeffrey Evans** (CSU Fullerton, Glen Nagel Award), and **Stephanie Sprowl** (CSU Fullerton, Crellin Pauling Student Teaching Award). Remarkably CSU Fullerton nearly swept the awards, representing separate decisions by four different faculty selection committees. Congratulations to all of this year's winners!

The 2010 Biotechnology Symposium will be held January 8-9 at the Santa Clara Marriott.

" PLEASE KEEP ALLOWING UNDERGRADUTE STUDENTS TO ATTEND, EVEN THOSE NOT PRESENTING RESEARCH. THIS SYMPOSIUM HAS EXPOSED MANY OF US TO RESEARCH."

- anonymous student survey response

2009 CSU Symposium: Campus Participation



2008 CSUPERB Legislator of the Year Adam Schiff (29th Congressional District, left) with CSU President James Rosser (right). The award was given in recognition of Mr. Schiff's sponsorship of a Small Business Administration grant to develop a biotechnology training center in the Los Angeles region.

Letter from the Executive Director



Dear Colleagues:

This year CSUPERB proved the power of social networks. I tend to describe CSUPERB's network as "communities of interest and practice," echoing the social scientists who have influenced me over the last few years. Long before I arrived at the CSU or LinkedIn launched their website, CSUPERB organized taskforces to build critical mass and further agendas. No matter what you call it, this year CSU faculty and administrators worked to make plans, share information, and develop collaborations with great success.

Without question, the best demonstration of an agile, effective social network would be the CSU's drive to win CIRM funding for stem cell research this year. We collated data in the box to the right to demonstrate some elements of a successful CSUPERB taskforce. In 2005 CSUPERB decided to prioritize stem cell initiatives so that CSU campuses would be eligible for funding from the state's stem cell agency. CSUPERB funded workshops and grants to build research capacity. The Chancellors' Office, along with Presidents' Commission member Rollin Richmond, provided key support by interfacing with CIRM. Together with the California Community Colleges, we organized proposal writing workshops so that CSU faculty might identify partners. In the spring ten CSU universities won over \$15.7M to fund "Bridges to Stem Cell Research" programs for students statewide.

These campuses - to their students' benefit - capitalized on the shared vision of a handful of faculty and administrators, planning far in advance for opportunities they were certain would materialize. Further, these leaders worked together to share best practices and ideas, knowing in the end that they would compete against each other for funding. Campuses responded with proposals to CIRM that were not "build it and they will come" proposals. Instead the CSU's CIRM proposals put forward compelling cases that described active stem cell research partnerships, excellent educational capabilities, and student engagement across the CSU. That's a winning formula for success.

The eight CSU campuses in the Los Angeles region have also built on years of planning and collaboration to deliver biotechnology industry-responsive curriculum. Last year CSUPERB won federal support for a biotechnology workforce training center in the L.A. region. Due to working relationships between the faculty, administrators and external partners in L.A., CSUPERB submitted a proposal package that was accepted by the Small Business Administration without revisions last summer. There are now two, multi-campus faculty teams working with industry advisors to develop Biotechnology Project Management certificates. Watch the CSUPERB website for updates on the BioCompass project, the name we've chosen for the one-stop web portal for CSU's biotechnology industry-responsive curriculum.

Using these two projects as case studies, I think that CSUPERB should continue to strategically invest its resources in setting CSU teams up for competitive success. In addition to Faculty Consensus Group meetings and the annual symposium, we're using e-platforms to build communities of interest; see FRESCA (fresca.sfsu.edu) or CSUPERB's LinkedIn Group (www.linkedin.com). We hope cross-disciplinary CSUPERB taskforces will respond to new opportunities at the interfaces of biotechnology. For instance, we already know that ARRA-related programs target Health IT and Clinical Laboratory Sciences. We're working with other CSU affinity groups, like COAST, on cyber-infrastructure initiatives to support researchers. We'll continue to look for opportunities and support passionate, hands-on leaders to seed the next big things for CSU faculty and students!

CIRM Bridges to Stem Cell Research Grants By-the-Numbers

CSUPERB Stem Cell Taskforce email list members : **22**

CSUPERB stem cell techniques workshops: **2**
(Summer 2007, Summer 2008; total cost \$29,700)

CSUPERB grants for stem cell capability enhancements AY06-08: **3**
(\$42,447 total to Channel Islands, Humboldt, Sacramento)

CSUPERB-funded proposal writing workshops: **2**
(Summer 2008 at Humboldt State and CSU Fullerton; total cost \$7628)

Proposal writing workshop institutional participation: **18 CSU, 19 CCC and 1 UC**

CSU Bridges proposals submitted: **17**

Total CSU Bridges awards (#/\$):

10 / \$15,737,727

New Directors in CSUPERB Program Office

IN JANUARY 2009 TWO NEW DIRECTORS JOINED THE PROGRAM OFFICE: **RUPINDER BHATHAL** (BELOW LEFT), DIRECTOR OF INDUSTRY PARTNERSHIPS, AND **RAJNI GARG** (BELOW RIGHT), DIRECTOR OF GRANTS & AWARDS. RUPINDER IS MANAGING THE BIOCOMPASS PROJECT IN THE LOS ANGELES REGION, AS WELL AS BUILDING WORKFORCE DEVELOPMENT PARTNERSHIPS STATEWIDE. RAJNI MANAGES AND ADMINISTERS OUR GRANTS & AWARDS PROGRAMS. SHE JUST COMPLETED THE SPRING 09 GRANT CYCLE, ALONG WITH THE FIRST TRY AT OUR NEW ANNUAL REPORTING PROCESS.



The CSUPERB mission is to develop a professional biotechnology workforce by mobilizing and supporting collaborative California State University student and faculty research, innovating educational practices, and responding to and anticipating the needs of the life science industry.

CSU The California State University

PROGRAM FOR EDUCATION AND RESEARCH IN BIOTECHNOLOGY (CSUPERB)

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 CSU Stanislaus

Jacob Varkey
 Humboldt State University

2008-2009 CSUPERB Grants and Awards Program Summary

Participation

Total Proposals, Applications and Nominations Received (including all competitive grants and awards programs)	288
Number of CSU Campuses Applying	22

Success # Awards / Total Award Dollars

Faculty-Student Research Seed Grants	30 / \$ 442,875
Entrepreneurial Joint Venture Grants	7 / \$ 150,800
Programmatic and Infrastructure Grants	6 / \$ 79,792
Travel Grants (Faculty and Student)	52 / \$ 43,313
Howell-CSUPERB Research Scholar Awards	11 / \$ 33,000
Symposium Awards	5 / \$ 6,250

Total # CSUPERB Awards / Grant & Award Dollars: 111 / \$ 756,030
Number of Campuses Receiving Grants and Awards: 21

"I just found out I got an NIH stimulus supplement funded for undergraduate research summer stipends! ...I am always grateful for everything that CSUPERB has done to help me get started. I couldn't do it without this great organization."

- K. McReynolds
 (CSU Sacramento, '07
 Joint Venture)

CSUPERB Grants Program Impact

(Based on final and long-term reports from faculty funded by Seed, Joint Venture and Programmatic grants only*)

	AY04/05	AY 05/06	AY06/07
CSUPERB Total Awards	\$498,039	\$467,133	\$492,068
CSU Faculty Involved	105	98	90
Students Involved	148	191	150
Peer Reviewed Publications	34	29	27
Follow-on Funding Received by PIs within 6-12 months of grant end date (final reports)	\$2,475,054	\$1,541,900	\$4,097,653
Total Follow-on Funding Received by PIs as of 5/28/09 (based on final & long term reports)	\$3,873,640	\$4,043,052	\$4,774,317**
Percentage Return on Investment (total follow-on funding \$/CSUPERB total award \$)	778%	866%	970%

* Impact reporting is based on final reports and long term reports received from CSUPERB PI's as of 5/28/09. Overall final reporting rates were >87%; long term reporting rates are 31-55%. Changes in follow-on funding totals reported relative to previous annual report are due to reports received later. Going forward, final reports will be due within 90 days of grant end date; long term reports will be collected in June for three years after grant ends.

** Follow-on funding based on long term reports from Fall 2006 grants only; the first set of Spring 2007 long term reports are not due until June 2010.

2008-2009 CSUPERB Funding by CSU Campus

Includes Grants, Awards and Symposium Participation funded by CSUPERB. Unfunded dollars represent proposals or nominations submitted but not funded.

