



California State University Systemwide Priority Projects for FY 2008

Regional Biotechnology Workforce Training Centers Project

The CSU Program for Education and Research in Biotechnology (CSUPERB) seeks funding to accelerate the creation of three regional biotechnology workforce training centers, to address the need for innovative applied training of this vital industry's specialized workforce. The centers could also meet other regional needs, such as training members of the first responder community in biotechnology-related procedures. The training facilities concept encompasses the full range of academic institutions -- vocational training institutions, community colleges, 4-year colleges and universities -- working in concert with the biotechnology industry and drawing on the resources of stakeholder organizations.

Biotechnology is one of the nation's most promising growth industries. California, with more than half of the nation's 1500 biotechnology companies, is an indispensable contributor to U.S. success. To maintain the lead in global biocommerce, workforce development platforms must be created to prepare this specialized workforce for the high skills jobs of tomorrow. Corporate biotechnology will require future employees who are familiar with the industrial environment and applied and translational research, development, and production that are all associated with commercialization. The biocommerce industry has overwhelmingly endorsed this approach of conducting company-like training programs, in many cases linked to company internship experiences. However, this niche for applied biotechnology training has not yet been effectively filled in California or the nation. California's community colleges and state universities are uniquely positioned to fill this need through the three workforce training centers.

This program will facilitate training and placement of highly skilled individuals -- from entry-level technical and support staff through career scientists -- in the biotechnology industry and other relevant fields. Achieving this goal requires the creation of training programs, laboratories, and applied research settings that:

- Have laboratory and process facilities for short courses, workshops, and skills-training modules covering cutting-edge concepts and techniques that: (a) are unique to the

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biotechnology industry and in a setting that provides hands-on experience in a simulated work environment; (b) operate through both traditional training approaches and real time and on-line means to assure wide distribution of training opportunities; and (c) could function in dual or multi-use modes, including, e.g., for laboratory training of regional first responders dealing with handling, inactivation and disposal of select agents, biowarfare agents, toxins and other toxic materials.

- Train not only specialized students at varying educational levels, but also serve the professional developmental needs of incumbent, dislocated or displaced workers wanting to advance within or change careers into the biotechnology sector.
- Provide a mechanism for establishing a broad spectrum of applied research training collaborations between academic laboratories and biotechnology companies.
- Facilitate internship arrangements for trainees at all levels of career advancement.

This proposal is supported by California's biotechnology industry organizations: BayBio; the Southern California Biomedical Council; BIOCOM; and the California Healthcare Institute. The facilities will be located at or overseen by three CSU campuses and coordinated by the internationally recognized CSUPERB program. The lead regional campuses are **CSU East Bay (in partnership with BayBio, San Jose State University, San Francisco State University, and Contra Costa Community College); CSU Los Angeles (in partnership with the Pasadena Bioscience Center, the Southern California Biomedical Council, Pasadena City College, CSU Fullerton, Cal Poly Pomona, CSU Channel Islands, CSU Dominguez Hills, CSU Long Beach, CSU San Bernardino, and CSU Northridge); and San Diego State University (in partnership with BIOCOM, the San Diego Community College District, Miramar Community College and CSU San Marcos)**. The three centers will focus upon individual specific technologies and develop complementary training functions that work statewide. All three training centers will be functioning through non-profit administrative structures involving their local community colleges, industry partners, and regional biotechnology industry cluster organizations.

Federal funds requested (\$6 million from the L-HHS-Ed/Health Resources and Services Administration account) will be distributed equally among the three non-profit training centers, one in each of the state's regions with the highest concentration of biotechnology companies, and will be used for program development, presentation and staffing, equipment and materials, initial operating costs, and other direct costs. The centers will fill significant gaps in the training of biotechnology workers, offering practical, cutting-edge, hands-on laboratory experiences, short-term workshops, specialized courses, and manufacturing training under FDA-regulated conditions, with sophisticated industry laboratory and manufacturing instrumentation not generally accessible by educational institutions. The \$6 million would be leveraged by existing infrastructure (including physical plant, equipment and personnel). In addition, the CSU has already obtained close to a million dollars in private foundation funding to be distributed among the three regions and is currently applying for further private and government funding for the project. Also, receipt of federal dollars would enable the program to compete effectively for state workforce funding under the Workforce Investment Act, and to garner further industry and foundation contributions. Ultimately, it is envisioned that receipt of this requested funding would enable the program to grow and stabilize over the next three years. Thereafter it would become self-sustaining.

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