
Strengthening the Pipeline of Masters-level Scientific and Laboratory Personnel in Stem Cell Research

Grant Award Details

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Grant Type: Bridges

Grant Number: TB1-01184

Project Objective: To provide a Master of Arts Stem Cell Concentration within a Professional Science Masters program, including a 7 month internship conducted at UC Davis. Training Course taken at the Buck Institute for Age Research.

Investigator:

Name:	Lisa Hammersley
Institution:	Cal State Univ, Sacramento
Type:	PI

Award Value: \$3,057,754

Status: Closed

Grant Application Details

Application Title: Strengthening the Pipeline of Masters-level Scientific and Laboratory Personnel in Stem Cell Research

Public Abstract:

The applicant institution will partner with a CIRM Shared Research Laboratory to create a comprehensive curricular program that will produce 30 masters degree graduates with the scientific foundation, research experience, practical laboratory skills and motivation to pursue careers in stem cell research. Graduates of the masters program will develop knowledge and skills suitable for basic research as well as its translation into clinical applications for patients. Graduates will help fill the future demand for laboratory managers and other research-support professionals in a growing number of laboratories devoted to stem cell research. Rather than a traditional, independent master's thesis project, students engage in activities specifically intended to improve the professional preparation of graduates desiring industry or laboratory careers in applied biosciences. The masters program builds upon curricular strengths in cellular and molecular biology at the applicant institution and the outstanding research facilities of the CIRM Shared Research Laboratory. The twenty-month program of study consists of graduate courses taken at the applicant institution and an internship at the CIRM Shared Research Facility. During the seven-month internship, student interns will work with mentors as part of disease teams that bring students and research scientists together with clinicians to work toward cellular therapy trials. In addition, Students will receive advanced training during a five-day Stem Cells Techniques Training Course at a CIRM Shared Research. Education enhancement activities will include a six-week lecture course entitled Introduction to Cellular Therapy, a short course in Good Manufacturing Practice and a seminar series with invited speakers from renowned laboratories. Proximity of the Home and Internship Host Institutions will facilitate program coordination, and ensure that students have ready access to mentors from both institutions. The applicant institution has considerable potential to attract students from underserved populations. The applicant institution will advertise its masters degree program to students attending four-year institutions of higher education throughout California. With a combination of research and professional skills graduates will fill roles vital to progress of stem cell research. Graduates experienced in team-based research and GMP will have high potential for career advancement, transitioning easily beyond entry-level positions or into doctoral programs. The intense, twenty-month program moves students quickly into the workforce. Professionally oriented masters programs, with their limited durations, practical training and potential for advancement have proven especially appealing to women and minority students. This masters program will help widen participation in stem cell research.

Statement of Benefit to California: The proposed program will create opportunities for students in California to pursue in a new type of professional master's degree that combines research experience with professional skills. Graduates of the 20-month program will move quickly into the workforce, and will have high potential for career advancement, transitioning easily beyond entry-level positions or into doctoral programs. Professionally oriented master's programs have proven especially appealing to women and underrepresented populations, and will help widen participation in high-paying jobs in stem cell research. This program aims to include students representing California's diversity in stem cell research by utilizing the network of California State Universities and community colleges, with their diverse student populations, and taking full advantage of established, highly effective mechanisms for fostering academic success of underrepresented students. Over the next two years, 12 new stem cell research laboratories will be built in California. In addition, a growing number of disease teams will pursue basic and advanced research involving stem cell therapies. The proposed program will produce at least 30 graduates to help fill existing and future needs for laboratory managers and stem cell researchers with practical experience in stem cell research techniques, laboratory safety, clinical trials and regulatory issues. Well trained stem cell researchers will be needed to for California to become a world leader in the development of stem cell therapies. Participants in the proposed program will be integrated into a large collaborative of over 31 laboratory investigators and clinical faculty, configured specifically to remove barriers preventing the transfer of promising stem cell therapies to patients. Disease teams of investigators, physicians and trainees will develop research and treatment approaches to a wide variety of conditions, including health problems related to liver, kidney, heart and lung diseases; neurodegenerative disorders such as Parkinson's, Huntington's and Alzheimer's disease; vision and hearing loss; infections diseases such as AIDS; circulatory problems that result in loss of limbs and poor heart function; diseases of cartilage and bone; and skin conditions such as non-healing ulcers and burns. This program will expand the pipeline of stem cell researchers needed to accelerate the application of stem cell biology to clinical use and improve health care for patients and communities in California.

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