
Curriculum Development and Implementation of Stem Cell Technology and Laboratory Management Emphasis in an Established MS Biotechnology and Bioinformatics Program at California State University Channel Islands and Co-development of a GE Course on Stem Cel

Grant Award Details

Curriculum Development and Implementation of Stem Cell Technology and Laboratory Management Emphasis in an Established MS Biotechnology and Bioinformatics Program at California State University Channel Islands and Co-development of a GE Course on Stem Cel

Grant Type: Bridges

Grant Number: TB1-01177

Project Objective: This grant funds a program to provide a stem cell training emphasis and 1 year internship for 10 Master's students.

Investigator:

Name:	Nitika Parmar
Institution:	California State University, Channel Islands
Type:	PI

Award Value: \$4,165,092

Status: Closed

Grant Application Details

Application Title: Curriculum Development and Implementation of Stem Cell Technology and Laboratory Management Emphasis in an Established MS Biotechnology and Bioinformatics Program at (REDACTED) and Co-development of a GE Course on Stem Cel

Public Abstract:

The mandate of the California Institute for Regenerative Medicine (CIRM) is to oversee and support quality research efforts in stem cell technology and to advance the development of medical therapies using this technology. As a result, many important research programs have already been funded in record time and the stem cell research community in California is growing rapidly. A need has ensued for qualified personnel at the Master of Science (MS) level to support key stem cell research activities in California. Our academic institution currently offers an MS in Biotechnology and Bioinformatics and an MS in Biotechnology/MBA Dual Degree program. These programs boast an enrollment of over 100 students and have a demonstrated track record of yielding highly competitive MS-level professionals. Our graduates have successfully entered the mid- and high-level workforce of the academic research community and biotechnology industry, or have pursued doctoral education. We propose to develop a comprehensive training program in Stem Cell Technology and Laboratory Management (SCT&LM) as an emphasis in our ongoing MS program. The emphasis will include 9 MS-level lecture and lab-intensive courses, 4 elective courses, and a 1-year internship. Most courses have been implemented for our existing MS program. To this end, we are seeking the Bridges Award to (1) assist us in developing 4 new courses for the graduate program, and (2) provide support for 30 one-year internships and an intensive Stem Cell Training course at a CIRM-funded training facility at [REDACTED]. Supplemented by 9 existing courses and 15 additional internships funded by our own institution, our MS program will graduate 45 fully educated and well-trained SCT&LM professional 3 years. We will also develop a general education course on stem cell technology with 3 local community colleges to educate over 1,000 students in the next 3 years. We have established agreements with 5 institutions, with 1 agreement pending, that will accept our graduate interns, offering a variety of research projects using different types of stem cells. A recent survey of our current MS students indicates a strong interest in the SCT&LM program. Many of these students will have completed most of the required courses and be ready for the internship by fall 2009. If our proposal succeeds in its requested funding, our first cohort of students will graduate with an MS degree in Stem Cell Technology and Laboratory Management by summer 2010. This program will be self-sufficient after the 3-year funding period and will sustain itself based on the proven track record of our existing professional science master's programs. We are confident that the SCT&LM program would be a key contribution to the stem cell efforts supported by the people of California in fulfilling the unmet need for highly qualified technical and managerial personnel in stem cell research technology.

Statement of Benefit to California: The effective implementation of numerous research programs in stem cell technology funded by the California Institute for Regenerative Medicine, created after the approval of Proposition 71 by California citizens, has led to a rapid growth of research communities in California. Consequently, an urgent and long-term need for qualified technical personnel to support these research activities has become apparent. Stem cell technology is a relatively new field. The management of stem cells in the laboratory is difficult and arduous. It requires an experienced and knowledgeable technical workforce. Few individuals in California are currently trained to provide research teams with high-quality and routine management of stem cell culture facilities. California does not have any program for advanced training in stem cell technology and stem cell lab management. Our proposal for the CIRM Bridges Award addresses the demand for well-trained professionals capable of managing stem cell culture facilities. We propose to extend our current MS Biotechnology and Bioinformatics program to include comprehensive training in Stem Cell Technology and Laboratory Management. Several new courses will be proposed and incorporated into the new program along with existing courses in the MS program. To arrange the one-year internship program, we have established agreements with 5 institutions and are in the process of reaching agreement with 1 additional institution that will accept our graduate interns, offering them a variety of research projects using different types of stem cells, experimental approaches and human disease models. A recent survey of our current 125 MS students indicates a strong interest in the Stem Cell Technology and Laboratory Management program. Many of these students will have completed most of the required courses and be ready for the internship by fall 2009. If our proposal succeeds in its requested funding, our first cohort of students will graduate with an MS degree in Stem Cell Technology and Laboratory Management by summer 2010. This program will become self-sufficient after the 3-year funding period and will sustain itself based on the proven track record of our existing professional science master's programs. Graduates from our program will be able to integrate readily into the scientific workforce in stem cell research in the State of California. During the 3 years of requested funding, our program will graduate 45 professionals with a Master of Science degree in Stem Cell Technology and Laboratory Management and support 15 internships above and beyond the 30 funded by the CIRM Award. We are confident that our training program at the MS level will be a key contribution to the stem cell efforts supported by the people of California in fulfilling the unmet need for highly qualified technical and managerial personnel in stem cell research technology.

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