
CIRM Research Training Program in Stem Cells and Aging

Grant Award Details

CIRM Research Training Program in Stem Cells and Aging

Grant Type: Research Training II

Grant Number: TG2-01155

Project Objective: The objective of the grant is to support a training program for postdoctoral fellows in stem cell research including courses and mentored hands on experience.

Investigator:

Name:	Xianmin Zeng
Institution:	Buck Institute for Age Research
Type:	PI

Award Value: \$1,472,416

Status: Closed

Progress Reports

Reporting Period: Year 3

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Reporting Period: Closeout Progress Report

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Grant Application Details

Application Title: CIRM Research Training Program in Stem Cells and Aging

Public Abstract:

We propose to sponsor a CIRM Research Training Program in stem cell and regenerative medicine, which will provide six postdoctoral Ph.D. or M.D. (Type III) trainees per year with state-of-the-art stem cell-related research experience and coursework in a rich scientific environment. The goal is to prepare trainees for productive, independent research careers in stem cell and regenerative medicine, with an emphasis on training individuals from scientifically and demographically diverse backgrounds. Consistent with our mission, the program will focus on stem cells in aging and age-related disease, with particular concentration in neurodegenerative disorders. Required courses will be offered in Stem Cell Biology; Neurodegenerative Disorders; Legal, Ethical and Social Issues in Stem Cell Research; and Career Development. Trainees will also be invited to participate in other courses and related activities at the Institute, including weekly laboratory meetings, a weekly journal club in stem cell and regenerative medicine, a special lecture series titled Seminars in Stem Cell Biology, professional development workshops, and a Summer Scholars Program for high school and college students, whom trainees will participate in mentoring. Research opportunities will be available in a broad range of disciplines related to the goals of the CIRM, including human embryonic stem cell biology, adult neurogenesis, neurodegenerative disease (stroke, Alzheimer's disease, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis), cancer, biology of aging, programmed cell death, DNA damage and repair, model organisms (yeast, *C. elegans*, *Drosophila*), mitochondrial physiology, epigenetics, and stem cell research methodology (imaging, genomics, proteomics, knockout/transgenics, drug screening). Trainees will have access to a variety of multidisciplinary activities, including the Program in Stem Cell and Regenerative Medicine, CIRM Shared Research Laboratory and Stem Cell Techniques Training Course, CIRM Major Facility for stem cell research, [REDACTED] AAALAC-accredited vivarium, and research cores devoted to hESC culture, hESC characterization, FACS, morphology/imaging, genomics, epigenetics, chemistry/proteomics, drug screening, and knockouts/transgenics.

Statement of Benefit to California:

The 2000 US Census showed that 10.6% of Californians were aged 65 or older and 1.3% were 85 or older. According to a 2003 special report from the California Policy Research Center on "The Growth and Aging of California's Population", the proportion of Californians aged 65 or older will increase to 20.5% over the next 50 years, and 4% will be 85 or older. As noted in the California Health and Human Services Agency's 2003 Strategic Plan for an Aging California Population, many of these individuals can be expected to suffer from chronic diseases such as cancer and Alzheimer's disease, so that a key element in preparing for the aging of California will be "developing new treatment modalities and medications that slow disease progression, improve treatment of symptoms, and/or reverse the course of disease". To this end, we propose a postdoctoral training program focused on the role of stem cells in the pathogenesis and potential treatment of aging and age-related disorders. Research opportunities will be available in a broad range of disciplines related to the goals of CIRM, including human embryonic stem cell biology, adult neurogenesis, neurodegenerative disease (stroke, Alzheimer's disease, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis), cancer, biology of aging, programmed cell death, DNA damage and repair, model organisms (yeast, *C. elegans*, *Drosophila*), mitochondrial physiology, epigenetics, and stem cell research methodology (imaging, genomics, proteomics, knockout/transgenics, drug screening). The proposed training program will benefit the state of California and its citizens by preparing the next generation of stem cell researchers, by improving current understanding of stem cell biology in relation to human disease, and by pointing the way toward new cell-based treatments.

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