The Stanford University Center for Human Embryonic Stem Cell Research and Education

Grant Award Details

The Stanford University Center for Human Embryonic Stem Cell Research and Education

Grant Type: Shared Labs

Grant Number: CL1-00518-1.2

Project Objective: The objective the shared lab is to provide a resource to the stem cell community for training, stem cell use, and equipment.

Investigator:

Name:	Vittorio Sebastiano
Institution:	Stanford University
Type:	PI

Human Stem Cell Use: Adult Stem Cell, Embryonic Stem Cell, iPS Cell

Award Value: $3,434,600

Status: Closed

Progress Reports

Reporting Period: Year 1 & 2

View Report

Reporting Period: Year 3

View Report

Reporting Period: Year 4

View Report

Reporting Period: Year 5

View Report

Reporting Period: Year 6

View Report

Reporting Period: Year 7/NCE

View Report

Grant Application Details

Application Title: Center for Human Embryonic Stem Cell Research and Education

Public Abstract: The goal of this proposal is to establish a premiere center for human embryonic stem cell (hESC) research and education in the state of California. Our center builds on the established excellence of faculty with research organized into four thematic areas:

Human embryology, derivation of hESC lines, including disease-specific lines, and SCNT, Cell fate specification and hESC reprogramming,Cancer and cancer stem cells, and Directed differentiation to cardiac and neural lineages.

Here, we seek funding to renovate facilities that will house a human embryo/oocyte resource center and database, hESC line derivation, as well as other research and educational training including a central repository for growth, characterization and distribution of hESC lines to scientists in our community. The success of the faculty in this Center in garnering funding for hESC research, including CIRM funding, mandates the expansion of our research facilities. In addition, an accompanying curriculum in Stem Cell Techniques Courses is complementary to the research efforts and builds on a history of teaching excellence. This curriculum will encompass three areas:

Basic hESC Biology covering core essentials of hESC biology for individuals with little or no previous experience in hESC research, Advanced or Specialized Stem Cell Techniques courses that will provide individuals with tailored instruction to enhance forward momentum in selected scientific topics, and
Systems Biology that reaches across institutions to bring together scientists in hESC and computational research.

We anticipate that the outcome of our training initiatives will be both an expansion of knowledge and the building of teams to tackle tough basic and clinical challenges. Finally, we note that our human embryo/oocyte resource center will provide expertise, materials and a complete, decoded database for use of precious resources in hESC research. This will enhance efforts to provide early diagnostics for reproductive and somatic disorders, cancers and onset of disease. Thus, this Center builds on a regionally unique combination of scientific and clinical excellence of Stanford University and neighboring institutions to provide critical research and educational support to scientists in California.

Statement of Benefit to California:	This proposal provides real benefits and value to the citizens of California in that our Center is established with a foundation built on: a scientific faculty that is unsurpassed in knowledge of human development and disease and dedicated to pushing forward in hESC research, a program director with numerous publications on hESCs and extensive experience in the State of California in establishing and directing an hESC Center with both research and teaching components, a Shared Tissue Resource that is supported by the largest, and most accomplished academic IVF (in vitro fertilization) Clinic in California to support research protocols, in an appropriate manner, that range from derivation of normal and affected or disease-specific lines to reprogramming of somatic cells via nuclear transfer, an established, decoded database system that will allow data from hESC research to be translated back to improvements in assessing embryo health (and thus decrease adverse outcomes that impact women's health such as repetitive miscarriages), a core curriculum that has been successfully implemented for group and individualized instruction, and a central location in Northern California within Silicon Valley that allows us to draw additional expertise from neighboring institutions and open our doors to training diverse members of the scientific community on one contiguous campus. Thus, the combined facility and teaching resource proposed will benefit the citizens of California by consolidating and accelerating research within the northern and central California region as well as by providing advanced training opportunities for investigators and research personnel throughout the State. This will enable a broad range of stem cell applications, promote the rapid translations of new discoveries to the clinic and also provide well characterized clinical grade reagents to support these efforts.