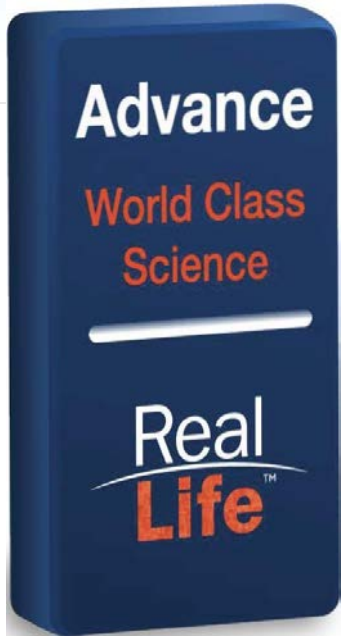


Real Life™

Uta Grieshammer, Ph.D.
Senior Science Officer
CNS Consortium Workshop
2.24.22

CIRM
CALIFORNIA'S STEM CELL AGENCY

Day 1 – What are the opportunities to share resources and promote collaborative research?



Approach:

To build infrastructure that organizes and democratizes data through:

- **Competency hubs**
- Knowledge networks

Session I: Overview of CIRM-funded Research Resources

Session II: Discussion - gather feedback that will inform CIRM about potential opportunities to share resources and promote collaborative research.

Session I: CIRM-funded Research Resources (Proposition 71):

1. Shared Laboratories
2. hiPSC Repository
3. Stem Cell Genomics

Objectives

- Provide dedicated (safe harbor) research space, specialized instrumentation, cell lines and culture materials
- Provide training and instruction in stem cell culture and technologies

Funded Awards (2007-2016)

- 17 Shared Labs Awards
- Specialized services and tools
- 6 Shared Labs were funded to develop and provide Advanced Techniques Course

Objective

- Create a comprehensive collection of research grade hiPSC lines for reliable distribution worldwide for modeling of prevalent, genetically complex diseases

Centralized hiPSC bank

- hiPSC lines from 2184 unique donors
- Created with uniform production method
- Consented appropriate for intended use
- Demographic, medical and/or diagnostic information from each donor

- Alzheimer's disease
- Blinding Eye Diseases
 - Age-related Macular Degeneration
 - Diabetic Retinopathy
 - Primary Open Angle Gaucoma
- Cardiomyopathies
- Liver Disease
 - Fatty Liver Disease
 - Hepatitis C
- Major Depressive Disorder
- Neurodevelopmental Disorders
 - Autism Spectrum Disorder
 - Cerebral Palsy
 - Epilepsy
 - Intellectual Disabilities
- Pulmonary Fibrosis
- Rare Diseases
 - Movement Disorders (ADCY5)
 - Optic Nerve Hypoplasia
 - Phelan-McDermid Syndrome



Deriver and Distributor

Center of Excellence for Stem Cell Genomics

Objective

- Enable application of cutting-edge genomics approaches to substantive problems of human stem cell biology

Funded Awards (2014-2019)

- CESC: 7 institution collaboration
 - Including a Data Coordination and Management Center
- Conducted 3 Center-initiated research projects
- Provided genomics support to 14 collaborative stem cell projects at 8 institutions

Stanford
University

UC San Diego

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3 Center-Initiated, 14 Collaborative Research Projects

Data Coordination and Management Center

- Genomics-based stem cell knowledge gained
- Data analysis tools developed
- Metadata reporting standards created
- Data warehouse created

WGS
Amplicon-seq
RNA-seq
Capture-seq
Frac-seq
broad-ChIP-seq
narrow-ChIP-seq
TCL-seq
WGBS
RRBS
ATAC-seq
Hi-C
GUIDE-seq

Genomics
Transcriptomics

Epigenomics

Gene editing profiling

Session I: CIRM funded Research Resources (Proposition 71): CASE STUDIES

- **Shared Laboratories**
 - *David Schaffer, UC Berkeley*
- **hiPSC Repository**
 - *Ralda Nehme and Sulagna Ghosh, Broad Institute*
 - *Jacquelyn Maher, UCSF*
 - *Ajamete Kaykas, insitro*
- **Stem Cell Genomics**
 - *Aparna Bhaduri, UCLA, and Max Haeussler, UCSC*