

# Eric Chiao, Ph.D.

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## Background

Expertise in human embryonic stem cell research, functional genomics, molecular biology, developmental biology, bioinformatics, and mouse genetics.

## Work Experience

### *Director of Stanford University Human Embryonic Stem Cell Core Facility*

#### *Clinical Instructor, Department of Obstetrics and Gynecology*

Stanford University, Institute for Stem Cell Biology and Regenerative Medicine,  
Palo Alto, CA, USA

April 2007 – Present

#### Responsibilities:

- Establish and oversee the operations of the Stanford Human ES Cell Core Facility and CIRM sponsored Stanford University Human Embryonic Stem Cell Training Course.
- Develop advanced methods for growing, differentiating and deriving human ES cells.
- Manage staff and execute research collaborations.
- Write grant applications, progress reports and scientific publications.

#### Memberships:

Stanford Center for Biomedical Ethics Program on Stem Cells in Society  
The International Society of Stem Cell Research

### *Post-doctorate Research Fellow in Dr. Julie Baker's Lab*

Stanford University, Department of Genetics, Palo Alto, CA, USA

July 2001 – May 2007

#### Projects:

- Modification, differentiation and characterization human embryonic stem cells.
- High-throughput functional genomic screen for mammalian genes involved in cardiovascular, pancreatic and neural development.

#### Awards:

2003 Fellowship from NIH Stanford Genome Training Program.

2001 Fellowship from the Stanford University Department of Cardiology.

### *Scientist (Temporary Assignment)*

April 2001 – July 2001

Rigel Pharmaceuticals Inc. South San Francisco, CA, USA

#### Assignment:

- Design and implement a high throughput mouse model for evaluating the efficacy of compounds under development in the Mast Cell/ Asthma program.
- Develop animal care and use protocol for IACUC. Oversee off-site mouse studies.
- Liaison between Pharmacology, Chemistry and Biology departments to facilitate *in vivo* testing of lead compounds.

### *Graduate Student in Dr. Argiris Efstratiadis' Lab*

Columbia University, Dept. of Genetics and Development, New York, USA

Sept. 1992-August 2000

Thesis Title: "Genetic Analysis of Growth Pathways Controlled by Glypican-3 and Insulin-Like Growth Factors: A Mouse Model of the Simpson-Golabi Behmel Overgrowth Syndrome"

#### Accomplishments included:

- Developing a mouse model for the human disease, Simpson-Golabi Behmel Syndrome.
- Targeting of genes in mouse embryonic stem cells.
- Analysis of growth factors and signal transduction pathways in mutant cell lines.
- Creation of relational database to catalogue and track mouse breeding program.

### ***Research Assistant to Dr. Walter Miller***

Dept. of Pediatrics and Metabolic Research, University of California, San Francisco  
May 1991-August 1991

#### Primary duties included:

- Computer modeling of the active site of cytochrome P450c17.

### ***Research Assistant to Dr. Bon Chu Chung***

Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan  
Feb. 1990-May 1991

#### Primary duties included:

- Analysis of promoter regions of human genes in mammalian cells.
- Design, construction and expression of chimeric human cytochrome P450s.

### ***Research Assistant to Dr. Ray Wu***

Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan  
Sept. 1989- Feb. 1990

#### Primary duties included:

- Screening library of rice genomic DNA. Screening transgenic plants with PCR, Southern and dot blot analysis. Characterization of rice genomic sequences.

### ***Laboratory Technician for Dr. Fred Heffron***

Scripps Clinic and Research Foundation, La Jolla, California  
June 1988- Sept. 1989

#### Primary duties included:

- Cloning and sequencing of genes, compilation and analysis of DNA sequences. Manager of DNA synthesizer core facility for Scripps Molecular Biology Research Department.

## **Education**

Ph.D. in Genetics and Development  
Columbia University, August 2000

Bachelor of Arts in Biochemistry / Cell Biology  
Minors in Economics and Chinese Studies  
University of California, San Diego, March 1989

## **Academic/Teaching Experience**

Lecturer, "Ethical, Legal, and Social Dimensions of Stem Cell Research," MED 83Q, Stanford University, April 2<sup>nd</sup>, 2009.

Symposium Organizer, "iPS Cells: Today and Tomorrow," February 25th, 2009, Stanford University.

Seminar Series Organizer, "Stem Cell Research Seminars," Spring, 2009, Stanford University.

Lecturer, San Jose State University, Department of Biological Sciences Graduate Seminar Series, October 8<sup>th</sup>, 2008.

Symposium Organizer, "Differentiating Stem Cells", July 11<sup>th</sup>, 2008, Stanford University.

Lecturer, "Med School 101," Stanford School of Medicine, February 29<sup>th</sup>, 2008.

Founding Course Director, Stanford University Human Embryonic Stem Cell Laboratory Course, Stanford University Center for Human Embryonic Stem Cell Research and Education, (2007- Present)

Lecturer, "The Stem Cell," Stanford University Continuing Studies, (2005- 2008)

## Research Support

6/01/08 to 5/31/11 CIRM New Cell Line Grant (Co-PI with Dr. Michael Longaker), "Derivation and analysis of pluripotent stem cell lines with inherited TGF- $\beta$  mediated disorders from donated IVF embryos and reprogrammed adult skin fibroblasts".

09/01/07 to 08/31/10 CIRM Facilities and Stem Cell Courses Grant (Reijo Pera, PI)  
The major goal is to establish the premiere center for studies of the basic science and clinical applications of human embryonic stem cells.

## Recent Presentations and Lectures

Invited Speaker, College of Reproductive Biology's 4<sup>th</sup> *Challenges and Strategies in Assisted Reproductive Technology*, January 25<sup>th</sup>-27<sup>th</sup>, 2009.

Invited Speaker, Midwest Reproductive Symposium, Chicago, Illinois, June 6-7, 2008.

Poster Presentation, "Isolation and Expression Profiling of hESC Derived Hepatocyte-like Cells"  
5<sup>th</sup> ISSCR Annual Meeting, Cairns, Queensland, Australia, June 17-20, 2007

Invited Speaker, Council of Physicians and Scientists Annual Meeting, Dallas, Texas, April 12-14, 2007

Invited Speaker, Advanced Training & Research In Fertility Management Conference  
University of the West Indies, Mona, Kingston Jamaica, October 26-28, 2006

Invited Speaker, "Stem Cell Research: Transatlantic Perspectives and Collaboration"  
International Networking for Young Scientists Workshop  
Duke University, Durham, North Carolina, February 19-22, 2006

Invited Speaker, "Stem Cells Research: Challenges and Opportunities"  
International Networking for Young Scientists Workshop  
Cambridge, United Kingdom, January 23-26, 2005

## Consulting

The Stem Cell Advisors, Inc., Palo Alto, Ca.,

A nonprofit public benefit corporation providing consulting services, training programs, and review and oversight of stem cell research.

Venture Capital Firms (Various).

## Publications

Alayne L. Brunner, David S. Johnson, Si Wan Kim, Anton Valouev, Timothy E. Reddy, Norma F. Neff, Elizabeth Anton, Catherine Medina, Loan Nguyen, Eric Chiao, Chuba B. Oyolu, Gary P. Schroth, Devin M. Absher, Julie C. Baker and Richard M. Myers, *Distinct DNA Methylation Patterns Characterize Differentiated Human Embryonic Stem Cells and Developing Human Fetal Liver*, Genome Research, 2009; Published Online in Advance March 9.

Nam-Joon Cho, Menashe Elazar, Anming Xiong, Wonjae Lee, Eric Chiao, Julie Baker, Curtis W Frank and Jeffery S Glenn, *Viral Infection of Human Progenitor and Liver-Derived Cells Encapsulated in Three-Dimensional PEG-based Hydrogel*, Biomedical Materials, 2008, Nov, 4(1). P 11001.

Eric Chiao, Menashe Elazar, Anming Xiong, Muriel Kmet, Maria Millan, Jeff Glenn, Wing Wong and Julie Baker, *Isolation and Transcriptional Profiling of Purified Hepatic Cells Derived from Human Embryonic Stem Cells*, Stem Cells, 2008, Aug; 26(8). P 2032-41.

Eric Chiao, Muriel Kmet, Barry Behr, and Julie Baker, *Derivation of Human Embryonic Stem Cells in Standard & Chemically Defined Conditions*, Methods in Cell Biology, 2008; 86. P 1-14.

Christopher Thomas Scott and Eric Chiao. "Private Stem Cell Bank is a Poor Investment." San Francisco Chronicle, op/ed August 31, 2007.

Eric Chiao, Jeff Leonard, Kari Dickinson and Julie Baker, *High-throughput Functional Screen of Mouse Gastrula cDNA Libraries Reveals New Components of Endoderm and Mesoderm Specification*, Genome Research, 2005, Vol. 15. P 44-53.

Eric Chiao, Peter Fisher, Laura Crisponi, Manila Deiana, Ioannis Dragatsis, David Schlessinger, Guiseppa Pilia and Argiris Efstratiadis, *Overgrowth of a Mouse Model of the Simpson-Golabi-Behmel Syndrome is Independent of IGF Signaling*, Developmental Biology, 2002, 243(1). P 185-206.

Dong Lin, Lin-hua Zhang, Eric Chiao, and Walter Miller, *Modeling and Mutagenesis of the Active Sites of Human P450c17*, Molecular Endocrinology, 1994, 8(3). P 392-402.

Michael Ricketts, Eric Chiao, Mon-chu Hu and Bon-chu Chung, *Amplification of P450c21 Expression in Cultured Mammalian Cells*. Biochem-Biophys-Res-Commun. 1992, Jul 15. 186(1). P 426-31.

Merl Hoekstra, David Burbee, Jeff Singer, Eric Chiao, Emily Mull and Fred Heffron, *A Tn3 Derivative that Can be Used to Make Short In-frame Insertion Within Genes*. Proceedings of the National Academy of Sciences, USA, 1991, Jun 15. 88(12). P 5457-61.

Eduardo Groisman, Eric Chiao, Craig J Lipps, and Fred Heffron, *Salmonella typhimurium phoP Virulence Gene is a Transcriptional Regulator*, Proceedings of the National Academy of Sciences, USA, 1989, Sept., Vol. 86. P 7077-7081.

### **Continuing Education**

Ethical and Social Issues in the Biotechnology and Pharmaceutical Industries  
Stanford University, March 2004.

### **References**

Available upon request.