

## SHOUKHRAT MITALIPOV, PhD

Citizenship: United States of America

### PRESENT ADDRESS:

Center for Embryonic Cell and Gene Therapy  
Oregon Health & Science University  
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### EDUCATION:

#### **PhD in Developmental and Stem Cell Biology, 1994**

Research Center for Medical Genetics, Russian Academy of Medical Sciences, Moscow, Russia, PhD dissertation: **Analysis of Mouse Embryonic Stem Cell Pluripotency in Vitro and in Vivo.**

#### **Master of Science in Reproductive Biology, 1987**

Timiriasev Academy, Moscow, Russia

### ACADEMIC EXPERIENCE:

- **Director**, Center for Embryonic Cell and Gene Therapy, Oregon Health & Science University, 2013 – present
- **Professor**, Division of Reproductive & Developmental Sciences, Oregon National Primate Research Center, Oregon Health & Science University, 2012 – present
- **Professor**, Dept. of Biomedical Engineering and Dept. of Obstetrics, Gynecology and Pediatrics, School of Medicine, Oregon Health & Science University, 2012 – present
- **Faculty Member**, Reproductive Endocrinology and Infertility Fellowship Program, Mar 2017-present
- **Associate Scientist**, Director, Assisted Reproductive Technologies and Embryonic Stem Cell (ART/ESC) Core Laboratory, Division of Reproductive & Developmental Sciences, Oregon National Primate Research Center, Oregon Health & Science University, 2007 – 2012
- **Associate Professor**, Dept. of Obstetrics and Gynecology, Dept. of Molecular and Medical Genetics and Oregon Stem Cell Center, School of Medicine, Oregon Health & Science University, 2009 – 2012
- **Assistant Scientist**, Director, ART/ESC Core Laboratory, Division of Reproductive Sciences, Oregon National Primate Research Center, Oregon Health & Science University, 2006 – 2007
- **Assistant Professor**, Oregon Stem Cell Center and Dept. of Obstetrics and Gynecology, Oregon Health & Science University, 2007 – 2009

- **Staff Scientist**, Division of Reproductive Sciences, Oregon National Primate Research Center Oregon Health & Science University, 1998 – 2006
- **Postdoctoral fellow**, Dept. of Animal, Dairy and Veterinary Sciences, Utah State University, 1995-1998
- **Postdoctoral fellow**, Institute of Human Genetics, Muenster University Muenster, Germany, 1995
- **PhD Student**, Laboratory of Developmental Genetics, Research Center for Medical Genetics, Moscow, Russia, 1989-1995

## RESEARCH SUPPORT

### ACTIVE

Burroughs Wellcome Fund, Mitalipov (PI)  
Innovation in Regulatory Science Award

9/15/2016 - 9/14/2021

#### **Mitochondrial Replacement Therapy**

The main goal of this study is to provide critical translational evidence concerning the efficacy and long-term safety of Mitochondrial Replacement Therapy in a nonhuman primate model. Our main hypothesis is that mtDNA can be efficiently replaced with donor mitochondria in oocytes or zygotes without interfering with subsequent nDNA-mtDNA compatibility and the normal development of rhesus macaque offspring.

1R56AG045137 Mitalipov (PI)  
NIH/NIA

9/30/2015-8/31/2017

#### **Mitochondrial Aging and Reprogramming**

The objective of this proposal is to test the hypothesis that age-related metabolic decline in somatic cells and tissues is associated with accumulation of mtDNA mutations. We will provide the direct experimental proof that accumulation of damage and loss of mitochondrial genome integrity plays a central role in the aging process in a mouse model. We will also determine whether the age related mitochondrial erosion in somatic cells affects the developmental potential of iPSCs.

Fondation Leducq Mitalipov (PI)

1/1/2012-12/31/2017

Transatlantic Networks of Excellence in Cardiovascular Research Program

#### **Translating Human Pluripotent Stem Cells from Heart Disease Models to Cardiac Repair**

The Transatlantic Alliance consisting of multiple PI's in the US and Europe, is focused on the potential of human iPS and ES cells as a model to study cardiac diseases, as well as a source of cells for regenerative therapy. Specifically we propose to delineate the genetic, epigenetic, metabolic (mitochondrial) and physiological properties of human ES and iPS cell populations, and their cardiovascular derivatives, with regard to regenerative potential and clinical applicability.

Role: PI

P51 OD011092 Robertson (PI)  
NIH/OD

05/01/14-04/30/19

Support for Oregon National Primate Research Center

Role: Professor (partial salary support only)

OHSU and private funds Mitalipov (PI)

The goal of this funding is to support human embryo and stem cell research projects and establishment of a new program with the hope of attracting additional non-federal and private funding.  
Role: PI

## COMPLETED

R01 EY021214 Neuringer (PI) 2/1/11-1/31/16  
NIH/NEI

### **Evaluation of stem cell-derived RPE cells**

The goal of this proposal is to study the functionality of retinal pigment epithelial (RPE) cells generated from ES, iPS and SCNT-ES cell sources. Functionality will be assessed in vitro and after transplantation into the subretinal space. The immune response to these cells in various situations that mimic their clinical application will also be investigated.

Role: Co-I

R01 HD063276 Mitalipov (PI) 4/1/10-3/31/15  
NIH/NICHD

### **Mitochondrial Gene Therapy**

The goal of this project is to explore the feasibility, efficiency and safety of mitochondrial replacement in mature eggs, prior to fertilization, in a clinically relevant nonhuman primate model.

Role: PI

R01 HD059946 Mitalipov (PI) 2/1/10-1/31/15  
NIH/NICHD

### **Altered Nuclear Transfer**

The goal of this project is to explore modifications in somatic cell nuclear transfer that dramatically improve the efficiency of reprogramming and the derivation of patient-specific pluripotent cells for cell replacement therapy while avoiding the creation and destruction of viable embryos

Role: PI

R01 HD057121 Mitalipov (PI) 8/15/09-6/30/14  
NIH/NICHD

### **Histocompatible Primate Embryonic Stem Cells**

The goal of this project is to generate important new insights concerning reprogramming of primate somatic cells to the pluripotent state employing somatic cell nuclear transfer (SCNT) and direct reprogramming approaches.

Role: PI

P51-RR00163 Robertson (PI) 5/1/09-4/30/12  
NIH/NCRR

### **ART/ESC Core**

The major goal of this project is to maintain the Assisted Reproductive Technologies (ART) core program in monkeys. The development component of the Core includes improving gamete and in vitro embryo production and novel protocols for propagation of animals using ARTs. Another goal is to maintain the Embryonic Stem Cell (ESC) program including all aspects of primate ESC derivation, propagation and characterization. The research component of the Core includes development of pluripotent stem cells by reprogramming of somatic cells and protocols for introduction of genetic modifications into primate ESCs.

Role: Director of the ART/ESC Core

Circle of Giving, Mitalipov (PI)  
OHSU Center for Women's Health

7/1/10-6/30/12

**Correcting of mitochondrial gene mutations in human oocytes**

The goal of this project is to explore the possibility of replacing mutated mitochondrial genes in human oocytes derived from patients and producing ES cells from genetically corrected oocytes.

Role: PI

R01 HD47721, Reijo Pera (PI)  
NIH/NICHD,

4/01/05 to 03/31/10

**Genetic Analysis of Germ Cell Formation**

The major goal of this project is to use human embryonic stem cells (hESCs) to specifically probe the genetics of germ cell formation in vitro and in vivo using federally approved hESC lines and a primate model.

Role: Subcontract PI

P01 - 1 P01 HD047675, Gerald Schatten (PI)  
NIH/NICHD

12/01/08- 11/30/10

**Primate Pluripotent Cells for Autologous Transplantation**

The main aim of this application is to generate genetically identical SCNT-ES and iPS cells from adult monkey skin fibroblasts and compare them to each other and to ES cells produced from fertilized embryos using an array of extensive tests including the ability to generate chimeras, the ultimate validation of their pluripotency.

Role: Subcontract PI

Stem Cell Research Foundation, Mitalipov (PI) 3/1/07-2/28/09

**Primate Parthenogenetic ESCs for transplantation studies**

The aim of the proposal is to generate important new insights concerning the genetic and epigenetic constitution of parthenogenetic ESCs in the NHP model in anticipation of clinical use of ESCs in the cell-based therapy of human diseases. Our working hypothesis is that primate parthenogenetic ESCs hold great potential as an isogenic source of immunologically compatible cells for treatment of degenerative diseases in a large cohort of the female population.

Role: PI

R01-NS044330 Mitalipov (PI)  
NIH/NINDS

8/15/02-2/30/08

**Genetically Modified Rhesus Monkeys**

The objective was to create the infrastructure necessary to produce genetically modified somatic cells in culture and to use those cells as donors for nuclear transfer. The resultant viable embryos of the desired genotype can then be transferred into surrogate mothers. Produced animals should provide a resource for the study of human neurogenetic diseases and serve as pre-clinical models for new experimental treatments including gene and stem cell based therapies.

Role: PI

R01-RR16030-05 Mitalipov (PI)  
NIH/NCRR

7/01/01-6/30/07

**Propagation of Monkey Models of Human Disease**

Major goal was to propagate MHC type Mamu A-01 rhesus macaques through application of the Assisted Reproductive Technologies.

## **PROFESSIONAL ACTIVITIES SERVICES**

- California Institute for Regenerative Medicine, Grant Review Panel Member, 2012-present
- NIH, Board of Scientific Counselors (BSC) for NHLBI, Division of Intramural Research, 2015
- NIH, Special Emphasis Panel - Beyond HAART: Innovative Therapies to Control HIV-1, Dec 2011
- NIH, ZRG1, Complex Human Genetics, Study Section Member, December 2010
- NIH, DEV2 Study Section Member, June 2010
- NIH, Loan Repayment Program Special Emphasis Panel, April, 2010
- NIH, CMIR Study Section Member, January 2010
- NIH, DEV2 Study Section Member, June 2009
- New York State Stem Cell Research Program (NYSTEM) Review Board, 2008
- NIH, Neurogenesis and Cell Fate Study Section Member, June 2008
- W. M. Keck Foundation Review Board, 2006
- National Science Foundation Review Board, 2007
- OHSU, MD/PhD committee member, 2009-2014
- OHSU, Oregon Embryonic Stem Cell Research Oversight (OSCRO) committee member, 2009-2014

## **AWARDS, HONORS AND RECOGNITIONS**

- 2013 – Recognized by journal Nature as top 10 people who mattered in 2013
- 2010 – Recipient of the 2010 Discovery Award, The Medical Research Foundation of Oregon
- 2010 - Recipient of the 2010 Women’s Health Research Award, the Center for Women’s Health, Circle of Giving
- 1995 - Fellowship award, Exchange Visitor Program “Cooperation in Applied Sciences and Technologies (CAST)”. Development of culture system to maintain pluripotency of bovine embryonic stem cells. Utah State University

### **Editorial (Ad Hoc reviewer)**

New England Journal of Medicine

Nature

Cell

Science

Nature Biotechnology

Nature Communications

Cell Stem Cell

Cell Metabolism

Development

Stem Cells

Biology of Reproduction

BMC Developmental Biology

Mitochondrion

### **Invited Speaker – National**

- Invited Speaker, March 15, 2017, Columbia University Stem Cell Seminar Series, “Germline and Somatic mtDNA Mutations”, New York, NY
- Invited Speaker, March 16, 2017 Cornell University, “Cell and Gene Therapy in Reproductive Medicine”, New York, NY
- Invited Speaker, February 28, 2017, Science Café Series, Genetic Approaches to Medical Progress, “Gene Therapy for Inherited Diseases”, Portland Community College, Beaverton, OR
- Invited Speaker, 2017 Scientific Congress of the American Society for Reproductive Medicine, “Cell & Gene Therapies in Reproductive Medicine,” October 28-Nov 1, 2016, San Antonio, TX.
- Keynote speaker, the 6th Regional Translational Research in Mitochondria, Aging, and Disease Symposium, October 28-29, 2016, Philadelphia, PA, 19104
- Invited speaker, the United Mitochondrial Disease Foundation Annual Symposium on Mitochondrial Medicine, June 15-18, 2016 , Seattle, WA, Mitochondrial Replacement Therapy”
- Invited speaker, Stem Cell Institute, University of Minnesota, April 20, 2016, ”Cytoplasmic Control of Nuclear Identity”
- Invited speaker, Broad CIRM Center, USC Keck School of Medicine, December 7, 2015, ”Cytoplasmic Control of Nuclear Identity”
- Keynote speaker, the Fertilization and Activation of Development, Gordon Research Seminar, July 18-19, 2015, the Holderness School in Holderness, New Hampshire, “Nuclear Transfer and Reprogramming”
- Invited speaker, American Society of Gene & Cell Therapy, 18th Annual Meeting, May 13-16, 2015, New Orleans, LA, “Mitochondrial Replacement Therapy in Reproductive and Regenerative Medicine”
- Keynote speaker, 2015 Annual Meeting and Educational Conference of the American Association of Bioanalysts, College of Reproductive Biology Symposium, “Evidence Based IVF: Foundations for Modern ART”, May 12-16, 2015, Red Rock Resort, Las Vegas, Nevada, “Is three a crowd? An update on nuclear transfer, cloning, and other exciting stories”
- Invited speaker, Society for Inherited Metabolic Disorders, Annual Meeting, March 28 - 31, 2015, Grand America Hotel, Salt Lake City, Utah. “Mitochondrial replacement therapy”
- Invited speaker, Pacific Coast Reproductive Society, 62nd Annual Meeting, March 19-23, 2015, Omni Rancho Las Palmas Resort & Spa. “Mitochondrial replacement therapy”
- Keynote speaker, George M. Eisenberg Foundation for Charities Annual Lecture in Regenerative Medicine, Center for Clinical and Translational Sciences Grand Rounds, Mayo Clinic, Rochester, Minnesota, September 26, 2014. “Nuclear Transfer and Reprogramming”

- Keynote speaker, Annual conference of the Society for Theriogenology and the American College of Theriogenologists, Portland OR, August 6-9, 2014. "Pluripotent Stems Cells".
- Invited speaker, the Ansary Symposium on Stem Cell Research, Weill Cornell Medical College, New York City, June 6, 2014. "Reprogramming by Embryonic Cytoplasm".
- Invited speaker, Johns Hopkins University/ School of Medicine, March 25, 2014. "Reprogramming of Somatic Cells to Pluripotency by Somatic Cell Nuclear Transfer".
- Invited speaker, Salk Institute, Feb 27, 2014. "Human therapeutic cloning: step forward in reprogramming and regenerative medicine"
- Invited speaker, University of Washington, Institute for Stem Cell and Regenerative Medicine lecture series, Dec 11, 2013. "Reprogramming of somatic cells to pluripotency by somatic cell nuclear transfer"
- Invited speaker, Rockefeller University, New York, NY, Nov 21, 2013. "Reproductive and Reprogramming Approaches for Treatment of mtDNA Disease"
- Invited speaker, 10<sup>th</sup> Annual Gilbert S. Greenwald Symposium on Reproductive and Regenerative Medicine, Kansas City, MO, Oct 16-18, 2013. "Reproductive and Reprogramming Approaches for Treatment of mtDNA Disease"
- Invited speaker, Center For Human Reproduction, New York, March 12, 2013. "Mitochondrial genome during reproduction, development and aging"
- Invited speaker, Stem Cell Institute, University of Connecticut Health Center, December 5, 2012. "Mitochondrial genome during reproduction, development and reprogramming"
- Invited speaker, Center for Integrated BioSystems, Utah State University, April 5, 2012, Logan, UT, "Mitochondrial genome during reproduction and development"
- Invited speaker, Center for Mitochondrial and Epigenomic Medicine (CMEM), The Children's Hospital of Philadelphia, January 31, 2012, Philadelphia, PA, "Mitochondrial genome during reproduction and development"
- Invited speaker, Southern California Stem Cell Consortium lecture, August 11, 2011, Sanford-Burnham Medical Research Institute, La Jolla, CA , "Mitochondrial genome during development, aging and reprogramming"
- Keynote Speaker, Institutional Development Award (IDeA) Meeting, May 23-25, 2011, University of Nebraska Medical Center, Omaha, Nebraska, "Manipulating Developmental Program"
- Invited speaker, 2010 Northwest Reproductive Sciences Symposium, May 21-22, 2010, Spokane, WA, "Nonhuman Primate Model for Mitochondrial Gene Therapies"
- Invited speaker, Frontiers in Biomedical Sciences, Cellular and Molecular Biology Dept., and the Molecular, Cellular and Integrative Neurosciences Program (MCIN), Colorado State

University, April 8, 2009, "Promise for the Future: New Developments in Stem Cell Research"

- Invited speaker, OHSU MD/PHD Retreat, Timberline Lodge, Oregon Oct 11. 2008, "Oocyte-induced epigenetic reprogramming"
- Invited lecture, Marquam Hill Lectures, OHSU, Portland OR, October 16, 2008, "Promise for the Future: New Developments in Stem Cell Research"
- Invited speaker, Stem Cell Center, University of California Riverside, May 15, 2008, "Oocyte-induced epigenetic reprogramming"
- Invited speaker, Pacific Coast Reproductive Society (PCRS), 56<sup>th</sup> Annual Meeting "Re-Creating Reproductive Medicine in Practice: A Fresh Approach " April 9-13, 2008, Rancho Mirage, California, "Oocytes and Epigenetic Reprogramming" and "Somatic Cell Nuclear Transfer: Current Progress and Future Perspectives"
- Invited speaker, Annual Scholars Forum on the Totipotency, the Westchester Institute, May 16 - 18, 2007, The Wyndham Washington, DC, "The Science of Parthenogenesis and SCNT".
- Invited speaker, Animal Science Department, University of Connecticut, October 13, 2006, "Advances and Challenges of Primate Embryonic Stem Cell Research"
- Invited speaker, Department of Biology, University of Texas at San Antonio, April 4, 2006, "Somatic Cell Nuclear Transfer and Embryonic Stem Cells in Nonhuman Primates: Recent Advances and Future Perspectives"
- Invited speaker, Harvard Stem Cell Institute, Harvard University, March 20, 2006, "Nuclear Reprogramming Following Somatic Cell Nuclear Transfer in Nonhuman Primates"
- Invited speaker, University of Miami, November 2005, "Applications of nonhuman primate ES cells and Assisted Reproductive Technologies for development of preclinical models of regenerative diseases"
- Invited speaker, Northwest Reproductive Symposium, Oregon National Primate Research Center, April 2002, "Nuclear Transfer and Embryo Twinning in the Rhesus Monkey"
- Invited speaker, Center for Biologics Evaluation and Research, Food and Drug Administration, March 26, 2002, "Nuclear Transfer and Embryonic Stem Cells in Rhesus Monkeys"

### **Invited Speaker – International**

- Invited Speaker, October 3-15, 2016, "Somatic and Germline mtDNA Mutations" and "Embryonic Stem Cells Derived by Somatic Cell Nuclear Transfer: A Horse in The Race?", Asan Medical Center, Seoul, South Korea
- Keynote speaker, 8th National Conference of Gynecological and Reproductive Endocrinology, Guangzhou, China, May 15, 2016, "Cell therapies for treatment of infertility"
- Invited speaker, ASAN Medical Center, Seoul, South Korea, February 21-23, 2016



“Mitochondrial Replacement Therapy for mtDNA Disorders”

- Invited speaker, International Symposium on Epigenome Dynamics and Regulation in Germ Cells, February 17-19, 2016, Kyoto University, Japan, “Cytoplasmic control of nuclear identity”
- Invited speaker, Ovarian Club, VI Meeting, November 14-15, 2015, Barcelona, Spain, “Mitochondrial replacement therapy in reproductive medicine”
- Keynote speaker, Mexican Society for Stem Cell Research, October 28-30, 2015, Mexico City, Mexico, “Applications of Nuclear Transfer in Regenerative and Reproductive Medicine”
- Invited speaker, International Congress on Stem Cell and Cellular Therapies (ICSCCT) October 15-18, 2015, Kaya Palazzo Golf Resort in Antalya, Turkey. “Nuclear transfer and reprogramming”
- Keynote speaker, International Society of In Vitro Fertilization (ISIVF), the 18th World IVF Congress of In Vitro Fertilization, Copenhagen, Denmark, September 27-30, 2015, “SCNT and IVF - Novel Approaches for Treating Mitochondrial Disease”
- Invited speaker, the 31st Annual Meeting of European Society of Human Reproduction and Embryology (ESHRE), Lisbon, Portugal, June 14-17, 2015, “Human therapeutic cloning: advances and technical challenges”
- Invited speaker, 8th International Meeting of the Stem Cell Network, North Rhine-Westphalia. April 21 – 22, 2015, Bonn, Germany, “Nuclear Transfer and Reprogramming”
- Invited seminar speaker, Max Planck Institute for Molecular Biomedicine, Muenster, Germany, April 24, 2015, ““Cytoplasmic control of nuclear identity”
- Invited seminar speaker, Gyeongsang National University, Jinju, South Korea, December 2, 2014, “Nuclear Transfer and Reprogramming”
- Invited speaker, Hankyond National University, Anseong, South Korea, December 3, 2014, “Mitochondrial Replacement Therapy”
- Invited speaker, Symposium on Stem Cells and Immunity, Santa Cruz de Tenerife, October 20-23, 2014, “Reprogramming of somatic cells to pluripotency by Somatic Cell Nuclear Transfer”
- Invited speaker, International Conference on Translational Science of Rare Diseases – From Rare to Care 2, Herrenchiemsee, Germany, Oct 8-10, 2014. “Germline gene therapy of mitochondrial diseases”
- Invited speaker, World Stem Cell Summit, San Diego, CA, Dec 4-6, 2013. “Nuclear Transfer (Therapeutic Cloning) Has Arrived! All Things Reconsidered”
- Invited speaker, ITMAT 8<sup>th</sup> Annual International Symposium, Harnessing the Paradox: Personalization and the Science of Scale, Oct 14-15, 2013, University of Pennsylvania, Philadelphia, PA. “Reproductive and Reprogramming Approaches for Treatment of mtDNA Disease”

- Invited speaker, Uyghur Academy Conference, Oct 5-6, 2013, Istanbul, Turkey. “Role of mitochondrial genome in stem cells”
- Invited speaker, Wellcome Trust Conference, Mitochondrial disease: translating biology into new treatments, Oct 2-4, 2013, Hinxton, UK. “Reproductive and reprogramming approaches for treatment of mitochondrial disease”
- Invited speaker, International Society for Stem Cell Research (ISSCR), 11<sup>th</sup> annual meeting. June 12-15, 2013, Boston MA, USA. Plenary session VI: Genomics and Epigenomics of Stem Cells: “Reprogramming of human somatic cells to pluripotency by somatic cell nuclear transfer”
- Invited speaker, International symposium on mitochondrial diseases, May 20-21, 2013, Madrid, Spain. “Towards germline gene therapy of inherited mitochondrial diseases”
- Invited speaker, 11th annual meeting of the International Society for Transgenic Technologies (ISTT), February 25-27, 2013, Guangzhou, Canton, China. “Primate chimeras and ES cells”
- Keynote speaker, 13th Royan International Congress on Reproductive Biomedicine and 8th Royan International Congress on Stem Cells Biology and Technology, September 5 - 7, 2012, Iran, Tehran. “Novel Reproductive Technologies for Preventing Mitochondrial DNA Diseases”
- Invited speaker, 5th International Symposium on Stem Cell and Gene Therapies, May 28, 2012, Moscow, Russia, “Gene Therapy for Inherited Mitochondrial Diseases ”
- Invited speaker, NIH, Symposium “Improving Animal Models for Regenerative Medicine”, May 23-24, 2012, Lister Hill Auditorium/NIH, Bethesda, MD. “Rhesus Macaque Model for Stem Cell and Gene Therapies”
- Invited speaker, Vavilov Institute of General Genetics, Russian Academy of Sciences, March 14, 2012, “Mitochondrial genome in germline and somatic lineages”
- Invited speaker, International Symposium "Neural Development: Stem Cell Perspective", January 17-18, 2012, Keio University, Tokyo, Japan, "Primate totipotent and pluripotent cells"
- Invited speaker, International symposium “Mitochondrial Medicine 2011” organized by the United Mitochondrial Disease Foundation (UMDF), the Mitochondria Research Society, the Mitochondrial Medicine Society and the Mitochondrial Physiology Society, June 15-18, 2011, Schaumburg, IL, “Correcting mtDNA Mutations in Human Oocytes”
- Invited speaker, Advances in Reproductive and Biology and Genetics Conference, University of Missouri, Columbia, May 16-17, 2011, “Methods and promise for reprogramming somatic cells”
- Invited speaker, The Stem Cell Network Germany, 6th International Meeting, April 5-6, 2011, Essen, Germany, "Primate pluripotent cells from in vivo and in vitro sources"
- Keynote speaker, Annual Meeting of Taiwan Society for Reproductive Medicine, January 16, 2011, Taipei, Taiwan, “Correcting mitochondrial gene mutations in human oocytes”

- Invited speaker, 3rd International Symposium on Stem Cell Technologies, September 27, 2010, Moscow, Russia, “Pluripotent Cells During Development”
- Invited speaker, 43rd Annual Meeting of the Society for the Study of Reproduction 30 July–3 August 2010, Milwaukee, Wisconsin. Minisymposia “Mitochondria and Mitochondrial DNA in Oocytes, Embryos, and Disease”, “Nonhuman Primate Model for Mitochondrial Gene Therapies”
- Invited speaker, Human somatic cell nuclear transfer (SCNT) workshop, organized by California Institute for Regenerative Medicine (CIRM) and the Medical Research Council, UK (MRC) - June 13 - 14, 2010 - San Francisco, CA, USA, “SCNT in the rhesus macaque model”
- Invited speaker, 174th European Neuro Muscular Centre (ENMC) International Workshop: Applying Pre-implantation Genetic Diagnosis to mtDNA Diseases. March 19-21, 2010 Naarden, Netherlands, “Chromosome Transfer in Mature Oocytes”
- Plenary lecture, International Symposium on Animal Biotechnology entitled “Recent Trends in Reproductive Biology” Korean Societies of Animal Reproduction and Embryo Transfer. Chungnam National University, Daejeon, Korea, October 23, 2009, “Nonhuman primate models for stem cell and gene therapies”
- Invited speaker, Keystone Symposium, *Stem Cell Niche Interactions*, Fairmont Chateau Whistler, Whistler, British Columbia, Canada, April 21 -26, 2009, “Pluripotent stem cells derived by SCNT and parthenogenesis”
- Invited speaker, Cold Spring Harbor Laboratory, 6<sup>th</sup> biennial meeting on Germ Cells, New York, October 1-5, 2008, “Oocyte-induced epigenetic reprogramming”
- Invited lecture, Xinjiang University, Urumqi, China, September 10, 2008, “Manipulating the cell fate”
- Invited lecture, Peking Union Medical College, Chinese Academy of Medical Sciences, Beijing, China, September 8, 2008, “Manipulating the cell fate”
- Invited speaker, 3rd International Conference on Cell Therapy and Regenerative Medicine, Barcelona, Spain, June 30<sup>th</sup> – July 1<sup>st</sup> 2008, “Oocyte-induced epigenetic reprogramming”
- Invited speaker, 3rd International Primate Genomics Conference “Primate Genomics & Human Disease” Seattle, WA, April 13-16<sup>th</sup>, 2008, “Development of a monkey model for the study of stem cell-based therapies”
- Invited speaker, Preimplantation Genetic Diagnosis International Society (PGDIS), Annual Meeting “Molecular Reprogramming and Derivation of Individual and Disease Specific hESCs” Belize, Central America, February 15-17, 2008, “Histocompatible Sources of Pluripotent Stem Cells“
- Guest lecturer, Le Centre de Recherche de L’Hôtel-Dieu de Québec, Québec, Canada, March 28, 2008, “Histocompatible Sources of Pluripotent Stem Cells“
- Plenary speaker, Plenary Session: Manipulation of the Epigenetic State, 5<sup>th</sup> Annual Meeting

of the International Society for Stem Cell Research. June 17-20, 2007, Cairns, Australia  
“Reprogramming of adult primate fibroblasts into embryonic stem cells by somatic cell nuclear transfer”

- Invited speaker, Newcastle Fertility Centre, International Centre for Life, Newcastle upon Tyne, UK, April 19, 2007, “Histocompatible Sources of Primate Pluripotent Cells”
- Plenary speaker, Plenary Session: Stem Cells and Embryology, 5th Joint Meeting of the UK Fertility Societies, 15 Apr - 18 Apr 2007, City of York, UK, “Advances and Challenges of Primate Embryonic Stem Cell Research”
- Invited speaker and Instructor, Training course “Strategies for Stem Cell Research and Nuclear Transfer Techniques”, Institute of Science and Technology for Research and Development, Mahidol University, Thailand December 1-4, 2006, “Primate ES cells: Current Progress and Future Perspectives” and “Methodologies Associated with Successful Nuclear Transfer”
- Invited speaker, Symposium: From Primate ARTs to ES Cells, 32nd Annual Conference of the International Embryo Transfer Society, January 8-10, 2006, Orlando, Florida, “Genomic Imprinting in Nonhuman Primate Embryos and ES Cells”
- Plenary speaker, Gordon Research Conference on Mammalian Gametogenesis & Embryogenesis, June 18-23, 2006, Connecticut College, New London, CT, “Nuclear Remodeling and Reprogramming Following Somatic Cell Nuclear Transfer in Nonhuman Primates”
- Invited speaker, Karolinska Institute, Center for Hearing and Communication Research, Stockholm, Sweden January 12, 2005, “Genomic imprinting in primate preimplantation embryos and embryonic stem cells”

## **Trainees:**

### **Postdoctoral Scientists (\*current)**

Dan Liang, Ph.D. \*

Stoyana Alexandrova, Ph.D. \*

Tomonari Hayama, Ph.D., M.D.\*

Yeonmi Lee, Ph.D.

Atsushi Sugawara, Ph.D.

Alim Fulati, Ph.D.

Nuria Martí Gutiérrez, Ph.D.\*

Rita Cervera-Juanes, Ph.D.

Eun Ju Kang, Ph.D.

Hong Ma, Ph.D. \*

Niramai Srojajak, Ph.D.

Hyo-Sang Lee, Ph.D.

Yukari Tokuyama, Ph.D.

María Araceli Valle Prieto, Ph.D.

Masahito Tachibana, Ph.D, M.D.

Hathaitip Sritanaudomchai, Ph.D.

Vikas Dighe, DVM

James Byrne, Ph.D.

Ugur Salli, PhD

Hung-Chih Kuo, Ph.D.

Akihisha Fujimoto, Ph.D., MD

Kevin Nusser, Ph.D.

### **PhD Students**

- Dongmei Ji, 2016-2017
- Chunlong Xu, 2015-2017
- Akram Muharram 2015-2016
- Autumn Fletcher, Oregon Health & Science University (Advisory board), 2010-2013
- Andrew Terker, Oregon Health & Science University (Advisory board), 2010-2013
- Yulong Su, Oregon Health & Science University (Advisory board), 2011-2013
- Piyaporn Siratirakun, Mahidol University, Thailand (Co-advisor), 2003-2006
- Hathaitip Sritanaudomchai, Mahidol University, Thailand (Co-advisor), 2003-2006

### **High School and College Students**

- Rafia Razzaque
- Mohammad Nasser
- Nargiz Mitalipov
- Simone Herzberg
- Navneet Mander
- Steve Dobriglo
- Dalida Abdullaeva

### **Fogarty Fellowship Trainees**

- Roberto Curilovic (graduate student)
- Maria D. Juarez, Ph.D.

### **Partners in Science Program**

- Carole Kepler, Clatskanie High School, 2007-2008

### **Apprenticeships in Science and Engineering**

- Dan Cushing, 2007

### **Visiting Scientists**

- Gareth Greggains, PhD student
- Alexandra Harvey, PhD
- Anne-Catherine Fluckiger, PhD

### **PATENTS:**

1. "Primate Totipotent and Pluripotent Stem Cells Produced by Somatic Cell Nuclear Transfer"  
Mitalipov S, Wolf D. Byrne J. U.S. Patent No. 7,972,849 (May 7, 2011)
2. "Human Pluripotent Stem Cells Produced by Somatic Cell Nuclear Transfer", Shoukhrat  
Mitalipov, U.S. Patent No. 9,546,383 (Jan 17, 2017)

3. "Methods for Mitochondrial DNA Replacement in Oocytes" Mitalipov S. U.S. Patent No. 9434921 (Sep 5, 2016)
4. "Metabolic rescue in pluripotent cells from subjects with mitochondrial DNA disease", Mitalipov S. Provisional Application Number: 62192358
5. "Generation of human oocytes by polar body transfer" Mitalipov S, Marti Gutierrez N. US Provisional patent application 62/419,638 (09 November 2016).
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