CIRM Scientific and Medical Research Funding Working Group
Biographical information of candidates nominated to serve as
Alternate Scientific Members of the Working Group

Freda Diane Miller, Ph.D.

Dr. Freda Miller is a cell and molecular neurobiologist in the Department of Developmental Biology at the Hospital for Sick Children in Toronto, and a Professor and Canada Research Chair in the Departments of Molecular Genetics and Physiology at the University of Toronto. She received her Ph.D. in 1984 from the University of Calgary and did postdoctoral work in pharmacology at the Scripps Research Institute in La Jolla. She later held positions at the University of Alberta and McGill University. Dr. Miller has received numerous awards for her research on stem cells in the adult nervous system. In 2004, she was elected president of the International Society for Developmental Neuroscience and a councilor of the Society for Neuroscience. In 2005 she was awarded a Canada Research Chair in Developmental Neurobiology and was elected a fellow of the Royal Society of Canada. In 2006, she was appointed an International Research Scholar by the Howard Hughes Medical Institute (HHMI).

Dr. Miller is interested in the role that stem cells play in the biology of adult tissues, and in using adult stem cells to study and treat diseases of the nervous system and neural crest. She is best known for her studies of neuronal stem cells and of neuronal growth, survival and apoptosis. Her lab also identified, isolated, and characterized Skin-derived Precursors (SKPs), a population of multipotent cells that first appear in the dermis of rodents and humans during embryogenesis and persist into adulthood, and might represent adult stem cells for the dermis. SKPs share properties with embryonic neural crest stem cells, raising the possibility that skin-derived precursors can generate the many and varied cell types that the neural crest produces during development. Dr. Miller's lab is interested in determining whether human SKPs can be used as a general tool to study events that lead to human neural crest disease pathology, in the hope that, by generating SKPs from human patients, they will be able to study the relevant neural crest–derived cell types at a molecular/cellular level and thus obtain novel insights into the pathology underlying these syndromes. Dr. Miller has authored more than 100 scientific papers, reviews and book chapters and has 13 patents (issued and pending). Dr. Miller is also a founder of Aegera Therapeutics Inc., a biotechnology company based in Montreal and Ottawa.

Stephen Lewis Minger, Ph.D.

Dr Stephen Minger is the Director of the Stem Cell Biology Laboratory and a Senior Lecturer in the Wolfson Centre for Age Related Diseases at King's College London. Dr Minger received his PhD in Pathology (Neurosciences) in 1992 from the Albert Einstein College of Medicine. From 1992-1994, he was a postdoctoral fellow at the University of California, San Diego, where he first began to pursue research in neural stem cell biology. In 1995, Dr Minger was appointed an Assistant Professor in Neurology at The University of Kentucky Medical School. He moved his stem cell research program to Guy's Hospital in 1996 and was appointed a Lecturer in Biomolecular Sciences at King's College London in 1998. Dr Minger is also one of the co-organizers, together with Dr Chris Mason of UCL, of the London Regenerative Medicine Network, a grassroots,

research-led organization designed to stimulate clinical translation of cell- and gene-based therapies within London. He is also the Senior Editor of Regenerative Medicine, a new journal launched in Jan 2006 by Future Medicines, which recently won the 2006 ALPSP/Charlesworth Award for Best New Journal.

Over the last 15 years, Dr. Minger's research group has worked with a wide range of somatic stem cell populations, as well as mouse and human embryonic stem (ES) cells. In 2002, together with Dr Susan Pickering and Professor Peter Braude, Dr Minger was awarded one of the first two licenses granted by the UK Human Fertilization and Embryology Authority for the derivation of human ES cells. His group subsequently generated the first human embryonic stem cell line in the UK and was one of the first groups to deposit this into the UK Stem Cell Bank. They have now generated five new human ES cell lines, including one that encodes the most common genetic mutation resulting in Cystic Fibrosis and another one that contains the Huntington's disease mutation. In addition to the derivation of human ES cell lines, the Stem Cell Biology Laboratory is focused on the generation of a number of therapeutically relevant human somatic stem cell populations from embryonic stem cells. These include cardiac, vascular, retinal, mesenchymal and neural stem/progenitor cell populations, as well pancreatic β-cells and oligodendrocyte progenitors. The Stem Cell Biology research team has established a number of significant collaborations with biological and clinical scientists throughout the UK specifically related to clinical translation of stem cells for a wide variety of human disorders.

Paul J. Simmons, Ph.D.

Dr. Simmons is a Professor and Director of the Centre for Stem Cell Research at the Brown Foundation Institute of Molecular Medicine (IMM), a research institute at the University of Texas Health Science Center at Houston. He is also the immediate past President of the International Society for Stem Cell Research (ISSCR). Dr. Simmons received his B.Sc. in Cell Biology from the Queen Elizabeth College at the University of London, and a Ph.D. at the University of Manchester. He became tenured at the Hanson Centre for Cancer Research (HCCR) in Adelaide, Australia. In 1999, Dr Simmons was recruited to the Peter MacCallum Cancer Centre (Peter Mac) in Melbourne Australia as Program Head in Stem Cell Biology. From 2003 until his recruitment to the IMM in December 2006, Dr Simmons also held the position of Director of the Adult Stem Cell Platform of the Australian Stem Cell Centre. He is currently Scientific Advisor to the Spinal Cord Society of Australia (www.spinalcordsociety.org). Prior to his appointment at the IMM, Dr Simmons was a member of Gene and Related Therapies Advisory Panel, an expert committee of the National Health and Medical Research Council (NHMRC) that provides advice to the Australian Government on human cellular therapies, gene and related therapies and xenotransplantation. He is currently serving or has served in the past on the editorial boards of many important journals in stem cell biology.

The major focus of Dr. Simmons' research is on using the hematopoietic system as a model to understand the regulation of stem cells by the tissue microenvironment (stem cell niche) in which the cells reside. Dr. Simmons has received international recognition for his pioneering contributions to basic hematopoietoc research and has an unbroken track record of excellence in this field. Current studies in his lab focus on the characteristics and biological properties of hematopoietic stem cells (HSC) and

mesenchymal stem cells (MSC), and on defining the cell and molecular composition of the respective niches for these two stem cell populations during embryonic development and in the adult skeleton. Additional studies focus on the identification of stem cells in the adult lung as a means to develop novel cellular therapies for treatment of the many disorders that currently affect the respiratory system, and on the application of MSCs as a cell therapy for the treatment of spinal cord injury.

Stephen C. Strom, Ph.D.

Dr. Stephen Strom is an Associate Professor and member of the Division of Cellular and Molecular Pathology at the University of Pittsburgh. He is on the Board of Councilors of the Cell Transplantation Society and the Hepatocyte Users Group, and is on the editorial board of the journal *Cell Transplantation* where he serves as the Section Editor of the Hepatocytes section. Prior to joining the University of Pittsburgh in 1993, Dr. Strom was an Assistant Professor of Radiology and Pharmacology at Duke Medical Center, and Associate Professor of Pathology at the Medical College of Virginia/Virginia Commonwealth University. He received his B.S. degree in Biology and Chemistry at Westmar College in Iowa, and his Ph.D. in Pharmacology at the University of Kansas Medical Center.

Dr. Strom's primary research interests include chemical carcinogenesis and molecular mechanisms of growth control in human liver and prostate. His lab is known for its work on the role of growth factors and growth factor receptor systems in the development and progression of cancer. His research team is currently investigating the progression of cancer within the liver and the regulation of human gene expression.

Megan Sykes, M.D.

Megan Sykes is the Harold and Ellen Danser Professor in the Department of Surgery and a Professor of Medicine (Immunology) at Harvard Medical School. She is an Immunologist at Massachusetts General Hospital, and Associate Director of the Transplantation Biology Research Center. She is also the Immediate Past President of the International Xenotransplantation Association, and is Vice President of The Transplantation Society.

Dr. Sykes' research is in the areas of hematopoietic cell transplantation, organ allograft tolerance induction, and xenotransplantation. Her research program aims to utilize bone marrow transplantation as immunotherapy to achieve graft-versus-tumor effects while avoiding the common complication of such transplants, graft-versus-host disease (GVHD). Her laboratory studies in this area have led to novel approaches that have been evaluated in clinical trials at MGH. Another major area of her research has been to utilize bone marrow transplantation for the induction of transplantation tolerance, both in organs from the same species (allografts) and from other species (xenografts). Her laboratory has worked toward the development of clinically feasible, non-toxic methods of re-educating the T cell, B cell and natural killer (NK) cell components of the immune system to accept allografts and xenografts without requiring long-term immunosuppressive therapy. Her work has also extended into the area of xenogeneic thymic transplantation as an approach to tolerance induction. Dr. Sykes' lab has also

been interested in the mechanisms by which non-myeloablative induction of mixed chimerism reverses the autoimmunity of Type 1 diabetes.

Viviane Tabar, M.D.

Dr. Viviane Tabar is as Assistant Professor of Neurosurgery at the Memorial Sloan Kettering Institute (MSKI). She serves as an advisor on numerous stem cell research organizations and facilities, including the International Society for Stem Cell Research and the *in vivo* unit of the Memorial Sloan Kettering Stem Cell Characterization core facility. She received her B.S. in biology and an M.D. at the American University of Beirut in Lebanon. In 2002, following residency and fellowship training, she was appointed Assistant Professor of Neurosurgery at Cornell Weill Medical College & New York Presbyterian Hospital and Assistant Professor of Neurosurgery at MSKI.

Dr. Tabar's research centers on developing embryonic stem (ES) cells as potential tools for cell replacement therapies. As a neurosurgeon with fellowship training in neurosurgical oncology, her interests and expertise include intra-operative mapping of the brain to identify critical areas that control language, thought, and memory. Her laboratory studies neural differentiation and neuronal/glial subtype specification as well as on the interaction of human ES cells with the adult brain environment. Projects include the study of radiation damage in the brain with emphasis on the fate of stem cells and oligoprogenitors, as well as the possibility of cell replacement as a means of ameliorating cognitive decline. Other translational applications of human ES cells are in neurodegenerative models, such as ALS (Amyotrophic Lateral Sclerosis) and Parkinson's disease.

Samuel Weiss, Ph.D.

Dr. Samuel Weiss is a Professor and an Alberta Heritage Foundation for Medical Research (AHFMR) Scientist in the Departments of Cell Biology & Anatomy and Pharmacology & Therapeutics at the University of Calgary, Faculty of Medicine. He received his B.Sc. in Biochemistry from McGill University in Montreal and his Ph.D. in Neurobiology from the University of Calgary. Since 2004, Dr Weiss has served as the inaugural Director of the Hotchkiss Brain Institute, a leading edge research enterprise that brings together a diverse group of medical experts and trainees from the neurosciences to discover and develop "new, improved ways to prevent, detect, and treat neurological and mental health conditions." Several of its programs and initiatives, engaging investigators in fields ranging from neural stem cell biology to stroke research and from patient care to brain tumor and brain imaging, aim to translate research discoveries into medical practice.

Dr. Weiss has made seminal discoveries in the fields of neuroscience and stem cell research. In 1985, together with Dr. Fritz Sladeczek, Dr. Weiss discovered the metabotropic glutamate receptor, which has become a major target for pharmaceutical research and development for neurological disease therapies. In 1992, he discovered neural stem cells in the brains of adult mammals. In addition to authoring many publications in his field and sitting on numerous national and international peer review committees, Dr. Weiss holds several patents in the neural stem cell field and has been

the founder of two biotechnology companies - NeuroSpheres Ltd (which was sold to Ciba-Geigy (Novartis) in 1995) and Stem Cell Therapeutics Inc (which was acquired by Transition Therapeutics, Inc. in 2003). Dr. Weiss' current research focuses on identifying the genes and growth factors that regulate the differentiation of central nervous system stem cells. He is also using neurosurgical approaches and behavioral analysis in rodent models of neurodegenerative disease to examine the potential of stem cell therapy in the repair of damaged brain and spinal cord tissue.