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

Sangeeta N. Bhatia, M.D., Ph.D.

Dr. Sangeeta Bhatia is a Professor of Health Sciences and Technology and Electrical Engineering at the Massachusetts Institute of Technology and a Biomedical Engineer at the Brigham and Women's Hospital. She received a B.S. at Brown University, an S.M. in Mechanical Engineering and a Ph.D. in Biomedical Engineering at the Massachusetts Institute of Technology (MIT) and an M.D. at Harvard University.

Dr. Bhatia's work focuses on using micro- and nanotechnology tools to repair damaged tissues. After postdoctoral training at the Massachusetts General Hospital, she was a member of the Bioengineering Department at University of California at San Diego for 6 years. In 2005, she returned to Boston to join the MIT faculty. She has been awarded the David and Lucile Packard Fellowship given to 'the nation's most promising young professors in science and engineering,' the MIT TR100 Young Innovators Award, the Global Indus Technovator Award, and is a Fellow of the American Institute for Medical and Biological Engineering. In 2008, she was named a Howard Hughes Medical Investigator. She co-authored the first undergraduate textbook on tissue engineering and is a frequent advisor to governmental organizations on cell-based sensing, nanobiotechnology, and tissue engineering. She holds 15 issued or pending patents, has worked in industry at Pfizer, Genetics Institute, ICI Pharmaceuticals, and Organogenesis, and is a co-founder of Zymera and Hepregen.

Paula Marie Bokesch, M.D.

Dr. Paula Bokesch is Global Medical Director and Chairman of the Scientific Research Committee at Hospira, Inc., a global specialty pharmaceutical and medication delivery company. She received a Bachelor' degree at Bowling Green State University in Ohio, and an M.D. from Wake Forest University.

Dr. Bokesch's responsibilities since joining Hospira have been focused primarily on development of a proprietary drug, the alpha-2-agonist Precedex, including study/protocol design, study start up and conduct, eCRF design, writing clinical study reports, two sNDA submissions to FDA, registration ex-US, design pediatric Phase I-III clinical trials, provide oversight and direction for medical strategy and life-cycle management, manuscript preparation and review, Investigator's Brochure update, PSUR preparation and review, global marketing strategy, multiple international post-marketing registries, leading cross-functional teams including marketing/commercial, and strategic planning. Other work with injectable generics and biosimilars, managing/developing direct reports and working with KOLs and advisors.

Prior to joining Hospira, Dr. Bokesch was Associate Professor of Anesthesiology at Emory University and Director of Pediatric Anesthesia Research at Children's Healthcare of Atlanta at Egleston. Before that, she was Assistant Professor of Anesthesiology at the University of Massachusetts School of Medicine in Worcester (from 1984-1988) and Tufts University (1992-1997), and was a staff anesthesiologist at

several medical institutions including The Cleveland Clinic Foundation (from 1996-2003).

Mark Furth, Ph.D.

Dr. Mark Furth is the Technical Development Officer of the Institute for Regenerative Medicine at Wake Forest Baptist Medical Center (WFIRM). He received his B.A. from Harvard University and a Ph.D. in Molecular Biology from the University of Wisconsin-Madison. He did postdoctoral research on novel stem cell antigens with Sydney Brenner at the MRC Laboratory of Molecular Biology, Cambridge, UK, and on oncogenes with Edward Scolnick at the National Cancer Institute.

Dr. Furth's current research, in collaboration with Dr. Anthony Atala, focuses on the use of fetal and adult stem cells as sources for new tissues and organs for regenerative medicine and pharmaceutical research; regulation of lineage specification in differentiation from stem cells. The WFIRM specializes in the manipulation of AFS cells to efficiently produce a variety of specialized cells that may have therapeutic value and/or utility for pharmaceutical research. These include cells of bone, cardiac muscle, nerves, liver, and the endocrine pancreas. One major project, supported in part by the Juvenile Diabetes Research Foundation, concerns the generation of insulin-secreting cells similar to beta-cells of the pancreatic islets of Langerhans. Prior to joining the WFIRM, Dr. Furth founded Renaissance Cell Technologies (the technology platform developed by Renaissance Cell Technologies is now being developed by Vesta Therapeutics).

Marcie Glicksman, PhD

Dr. Marcie Glicksman is the Senior Director of the Leads Discovery Group Laboratory for Drug Discovery in Neurodegeneration (LDDN) at Brigham and Women's Hospital and part of the Harvard NeuroDiscovery Center. She received a bachelor's degree from Brown University and a Ph.D. in Neuroscience from Washington University in St. Louis

Dr. Glicksman has extensive experience in assay development, high throughput screening, and chemical databases, as well as animal pharmacology and preclinical development. She has been in the field of drug discovery in the pharmaceutical industry for thirteen years, most recently at Descartes Therapeutics. Before this, she was Director of Leads Discovery at Cubist leading a group in the development of antibiotics with a structure-based drug design approach using x-ray crystallography and chemical modeling, which resulted in lead molecules suitable for testing in animal models. She was also in Leads Discovery at DuPont-Merck (later DuPont Pharmaceuticals) and Cell Biology at Cephalon. She led the assay development and screening program for a cell-based protease project and numerous G-protein coupled receptor projects, many of which were continued when Bristol Myers Squibb bought DuPont Pharmaceuticals. She also has led a program for Alzheimer's and Parkinson's disease that resulted in co-inventorship of CEP1347, a drug candidate directed at a novel kinase currently in Phase III clinical trials. She was elected in 2005 to the Board of Directors for the Society for Biomolecular Sciences and currently serves as its Chairman. She is on the science advisory board for ADDF/ISOA, an Alzheimer's disease foundation, and reviews grants for the NIH and the Michael J. Fox foundation. Dr. Glicksman is also a consultant, and in this capacity has filed an Investigational New Drug application with the FDA as well as providing expertise on new technologies.

Kurt C. Gunter, M.D.

Dr. Gunter is currently Global Medical Director of Regenerative Medicine at Hospira, Inc., a specialty pharmaceutical and medication delivery company and a world leader in specialty generic injectable pharmaceuticals. Dr. Gunter received his B.S. in Biological Sciences at Stanford University, and an M.D. at University of Kansas School of Medicine. His specialty boards were in Anatomic Pathology, Clinical Pathology, and Transfusion Medicine.

Dr. Gunter has extensive experience in medicine and medical regulatory affairs. He served in the U.S. Food and Drug Administration for six years, where he was appointed an Acting Deputy Director within the Center for Biologics Evaluation and Research (CBER) in 1993. He then accepted a position as Assistant Professor in the Department of Pathology and Pediatrics of George Washington University Medical School, where he remained for three years. During his tenure at George Washington, he served as the Assistant Director of Transfusion Medicine in Hematology at the Children's National Medical Center in Washington, D.C., and later as Director of the Stem Cell Processing and Donor Center at the same department, Prior to joining Hospira, Dr. Gunter served as Vice President of Clinical and Regulatory Affairs at Transkaryotic Therapies, Inc. (1996-2001), as Senior Vice President of Clinical and Regulatory Affairs and Government Relations at ViaCell, Inc. (2001-2005), and as Vice President of Clinical and Medical Affairs and Government Relations at ZymeQuest, Inc (2005-2006). .

Dr. Gunter has also held various drug and therapy product review and evaluation positions for the U.S. Food and Drug Administration. He has been involved with the FDA Regulatory Scientist Peer Review Promotion Committee, the FDA Working Group on Growth Factors, the FDA Somatic Cell and Gene Therapy Policy Committee, FDA (alternate) Liaison to the NIH Recombinant DNA Advisory Committee, and NIAID, Strategic Program for Innovative Research for AIDS Study Section. In addition, Dr. Gunter has been an ad hoc reviewer for the Journal of Immunology, and is sought out as a speaker both for academic topics and for issues relating to regulatory affairs and policy.

Paul Kulesa, Ph.D.

Dr. Paul Kulesa is Director of the Imaging Center at the Stowers Institute for Medical Research in Kansas City, Missouri. He joined the Stowers Institute after completing a Burroughs Wellcome Fund postdoctoral fellowship in the laboratory of Dr. Scott E. Fraser at the California Institute of Technology. Dr. Kulesa received a Ph.D. in applied mathematics under Dr. J.D. Murray at the University of Washington.

Dr. Kulesa conducts research exploring cell migration in development and cancer and helps Institute researchers visualize the cells and tissues they are studying in new, more powerful ways through the use of time-lapse imaging and advanced microscopy. Dr. Kulesa's laboratory has concentrated on three separate areas: 1) in vivo analyses of neural crest migration and the role of the embryonic microenvironment in this process, with a focus on the molecular cues involved in migration; 2) exploring the chick neural crest microenvironment as a model for cancer cell reprogramming; and 3) development of innovative tools for tracking cell movements in embryos non-invasively. They use techniques in molecular biology, tissue transplantation/avian embryo microsurgery, 4D

confocal and 2-photon time-lapse imaging, photoactivation of GFP cell labeling, multispectral imaging, and mathematical modeling.

Hai-Quan Mao, Ph.D.

Dr. Mao is currently an Assistant Professor in both the Department of Materials Science and Engineering and the Whitaker Biomedical Engineering Institute at Johns Hopkins University. He received his B.S. in Polymeric Chemistry and Ph.D. in Polymeric Biomaterials from Wuhan University in China.

Dr. Mao's work focuses on the development of polymeric nanomaterials for stem cell engineering and drug or gene delivery, with the long-term goal of providing new strategies for therapeutic interventions in the treatment of neurodegenerative disorders and traumatic injuries. His lab centers on 2 nanomaterials platforms:
1) Functional nanofiber niches for stem cell regulation and neural regeneration
Nanofibers can regulate cellular functions by providing relevant topographical guidance and biochemical cues. Dr. Mao's laboratory is optimizing the potential of nanofibres to promote stem cell expansion and differentiation. The laboratory intends to expand the nanofiber platform to manipulate human embryonic stem cell-derived neural stem cells to promote axonal regeneration, and to enhance hematopoietic stem cells for angiogenic therapies.
2) Polymeric materials for drug and gene delivery. Here research focuses on the development of biodegradable and biocompatible polymers that can self-assemble, upon complexing with DNA, into micelles of different size and morphologies (spherical, rod-like, and worm-like). Dr. Mao's laboratory has been developing micelle systems for liver-targeted and central nervous system- targeted gene delivery.

Dr. Mao has been on several NIH review panels, editorial boards, and has co-chaired symposia in his field, Among other awards and honors, Dr. Mao recently received a National Science Foundation Faculty Early Career Award and a Johns Hopkins University Alumni Association Excellence in Teaching Award.

Todd C. McDevitt, Ph.D.

Dr. Todd McDevitt is an Assistant Professor at the Wallace H. Coulter Department of Biomedical Engineering, & The Parker H. Petit Institute for Bioengineering and Bioscience, at Georgia Institute of Technology / Emory University. He received his B.S.E. at Duke University after double-majoring in Biomedical Engineering and Electrical Engineering, and earned a Ph.D. in Bioengineering at the University of Washington in Seattle. His post-doctoral work in Pathology, also at the University of Washington, focused on signaling pathways mediating proliferation of cardiomyocytes derived from stem cells for the purpose of myocardial repair.

Dr. McDevitt's current work focuses on the use of engineering approaches to translate stem cell research into viable regenerative therapies, focusing on cardiomyocytes. His laboratory is developing ways of controlling the spatial and temporal presentation of morphogenic factors to stem cells, as a way of achieving more homogeneous differentiation of these cells. They are also optimizing fluid shear forces and hydrodynamic culture conditions to enhance differentiation. Finally, Dr. McDevitt is interested in exploring the regenerative potential of extracellular molecules and cytokines produced by differentiating stem cells.

Dr. McDevitt has received numerous awards and honors in his field, including a UK-US Stem Cell Collaboration Development Award and a New Investigator Award from the American Heart Association. He is an active member of numerous professional societies related to his interests in bioengineering and stem cell research, and is on the editorial board of the Journal of Biomedical Materials Research A.

Dr. Alan Russell, Ph.D.

Dr. Alan Russell is a Professor of Surgery, Chemical Engineering, Bioengineering, and Biochemistry and Molecular Genetics at the McGowan Institute for Regenerative Medicine at the University of Pittsburgh. He also serves as the Director of the McGowan Institute, Executive Director of the Pittsburgh Tissue Engineering Initiative, and Executive Director of the National Tissue Engineering Center. He received his B.Sc. with honors from the University of Manchester Institute of Science and Technology, and his Ph.D. from the Imperial College of Science and Technology in England.

Dr. Russell's research has focused on the symbiotic relationship between biological macromolecules and materials. His specific areas of interest include biotechnological means of chemical and biological weapons defense, the study of enzymes in extreme environments, biocatalytic polymer synthesis, and rational approaches to biomaterial synthesis for tissue engineering and "smart materials" for biosensors. Dr. Russell's lab utilizes techniques in biochemistry, molecular biology, engineering, and polymer chemistry with the goal of translating basic science into commercially viable technologies. Current projects include study of the synthesis of antimicrobial surfaces (prevention of biofilms in indwelling medical devices such as catheters to reduce infection), enzyme therapy for mitigating the effects of scarring (regeneration of functional tissue to reduce rehabilitation time and frequency of re-injury), *in vitro* folliculogenesis and maturation of ovarian follicles (methods to produce mature eggs from immature follicles to ultimately restore fertility in women undergoing therapies that harm reproductive organs), and plasma modified surfaces for tissue engineering applications (using cold plasma systems to modify the surface of tissue culture polystyrene in an attempt to more easily harvest cells, and exploring computer-based surface patterning of plasma and the possibility of using the plasma to make direct modifications to cell surfaces.)

Dr. Russell has a long history of collaboration with industry. He holds numerous patents and has been the founder of three bioengineering companies. He has also been the recipient of several distinguished honors and awards, including being elected a Fellow of the Fellow of the American Institute for Medical and Biological Engineers in 1998 and, more recently, being selected for the Top Ten Army Inventions in 2004. He holds positions in several Tissue Engineering organizations, has been on the editorial board of several bioengineering journals and is the Senior Editor of the IEEE Transactions on NanoBioscience,

Shuichi Takayama, Ph.D.

Dr. Shuichi Takayama is an Associate Professor in the Department of Biomedical Engineering at the University of Michigan, Ann Arbor. He received his B.S. and M.S. degrees at University of Tokyo in the field of Agricultural Chemistry. He received his Ph.D. in Chemistry at Scripps Research Institute, and continued with post-doctoral

studies in Chemical Biology at Harvard University.

Dr. Takayama's laboratory focuses on understanding cell function through the development and use of novel micro-, nano-, and molecular scale technologies. Current research focuses in 3 areas: 1) Microscale Integrated Cell biology Systems (MICS) and the development of automated microdevices to sort, culture, and analyze cells (Microfluidics, Bio-MEMS, Subcellular signaling). 2) Panscopic design and synthesis of biomaterials, spanning all length scales from the macroscopic to the microscopic, nanoscopic, and molecular, including protein nanopatterning. 3.) Microenvironomics; the systematic study –using MICS and Panscopic Biomaterials- of how micro- and nanoscale environments affect cell function. Honors for his work include Biomedical Engineering Department Award for Outstanding Accomplishment (2006), Collegiate Inventor's Award, National Inventors Hall of Fame & USPTO (2004), NSF Career Award (2003), Ralph E. Powe Junior Faculty Enhancement Award (2002), Green Chemistry Challenge Award (from EPA, 2000), Leukemia and Lymphoma Society Fellow(1998), and the Lesly Shelton Moreaux Excellence in Chemistry Graduate Studies Award (from Scripps Research Institute, 1997).