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

Appointment of New Members

Ali Syed Arbab, MD, PhD

Dr. Arbab is a professor in the Department of Biochemistry and Molecular Biology and College of Graduate Studies and Leader of the Tumor Angiogenesis Initiative at Georgia Regents University. Previously, he was the Senior Scientist and Director of the Cellular and Molecular Imaging Laboratory (CMIL), Department of Radiology, at Henry Ford Hospital in Detroit. Prior to Henry Ford, Dr. Arbab oversaw the Nuclear Medicine Division at Yamanashi Medical University in Japan.

He received his MD from the Institute of Post-graduate Medicine and Research in Bangladesh and his PhD in Radiological Science from Yamanashi Medical University, Japan. His postdoctoral training in Cellular MR Imaging was at The National Institutes of Health. Dr. Arbab's research interests include: Involvement of bone marrow progenitor cells in resistance to anti-angiogenic treatments, differentiation of glioma from radiation injury, cell mediated gene therapy, changes in tumor vascular permeability, SPECT technology, stem cell biology, and optical imaging.

Jason A. Burdick, PhD

Dr. Burdick is a Professor of Bioengineering at the University of Pennsylvania. His research involves the development of hydrogels for various biological applications and his laboratory is specifically interested in understanding and controlling polymers on a molecular level to control overall macroscopic properties. These hydrogels include photocrosslinkable systems based on natural polymers that exhibit spatially and temporally distinct properties and can be processed into fibrous structures, as well as self-assembled materials designed from non-covalent chemical interactions that are useful as injectable hydrogels. The applications of his research range from controlling stem cell differentiation through material cues to fabricating scaffolding for regenerative medicine and tissue repair. Dr. Burdick currently has over 140 peer-reviewed publications and has been awarded a K22 Scholar Development and Career Transition Award through the National Institutes of Health, an Early Career Award through the Coulter Foundation, a National Science Foundation CAREER award, a Packard Fellowship in Science and Engineering, and an American Heart Association Established Investigator Award. He is on the editorial boards of Tissue Engineering, Biomacromolecules, Journal of Biomedical Materials Research A, and ACS Applied Materials and Interfaces and is an Associate Editor for ACS Biomaterial Science & Engineering.

Timothy A. Hacker, PhD

Tim Hacker completed his PhD. at the University of Wisconsin, Madison in 1996 in Exercise Physiology under the direction of A. James Liedtke developing swine models of cardiac hibernation and stunning. Next, he joined the faculty at Concordia University Wisconsin to help create a new school of Physical Therapy. He returned to the UW in

2000 to join the Cardiovascular Research Core Lab. He was promoted to Director in 2003 and Senior Scientist in 2010. Hacker participates in several peer-review activities, including the UW Institute for Clinical and Translational Research and is a reviewer for several cardiovascular-related journals.

His work at the Cardiovascular Research Core Lab facility provides researchers with surgical models of disease as well as non-invasive imaging and invasive physiologic monitoring of the disease process. Dr. Hacker has established cardiac disease models in mice, rats, rabbits, pigs, dogs and primates. Currently, the facility is conducting studies focusing on cell delivery devices and targeting, cell tracking, heart failure, arrhythmias, gene, drug and cell therapy and other cardiovascular diseases. His work examining defects in the lamin protein have led to a phase I clinical trial starting in 2014 to test a drug which slows or even reverses heart failure associated with lamin mutations.

Ali Khademhosseini, PhD
Ali Khademhosseini is an Associate Professor at Harvard-MIT Division of Health Sciences and Technology, Brigham and Women's Hospital and Harvard Medical School as well as an Associate Faculty at the Wyss Institute for Biologically Inspired Engineering and a Junior PI at Japan's World Premier International-Advanced Institute for Materials Research at Tohoku University where he directs a satellite laboratory. He has authored over 340 journal papers (H-index = 61, >14100 citations) and 50 book chapters. In addition, he has delivered 250+ invited/keynote lectures. Dr. Khademhosseini's interdisciplinary research has been recognized by over 30 major national and international awards. He has received early career awards from three major engineering discipline societies: electrical (IEEE Engineering in Medicine and Biology Society award and IEEE Nanotechnology award), chemical (Colburn award from the AIChE) and mechanical engineering (Y.C. Fung award from the ASME). He is also a recipient of the Presidential Early Career Award for Scientists and Engineers, the highest honor given by the US government for early career investigators. He is a fellow of the American Institute of Medical and Biological Engineering (AIMBE) and the American Association for the Advancement of Science (AAAS). He is an Associate Editor for ACS Nano (IF: 12) and a standing member of NIH BTSS study section. He received his Ph.D. in bioengineering from MIT (2005), and MASc (2001) and BASc (1999) degrees from University of Toronto both in chemical engineering.

Edmund Mikunas
Edmund Mickunas is an Independent Consultant with extensive experience in regulatory affairs, quality assurance and contract manufacturing management in the development of pharmaceutical, biologic, medical device and combination products.

Mr. Mickunas served as the Vice President of Regulatory Affairs and Quality Assurance at Advanced Cell Technology where he was in charge of spearheading the company's effort to translate research into FDA approved therapies ready for clinical trials. Mr. Mickunas has over 30 years of experience across a breadth of disciplines including the biotechnology, medical device and pharmaceutical fields. During his career he has worked in preclinical program development, clinical affairs, regulatory

affairs/compliance and quality assurance, and has worked closely with all disciplines involved in product development. Prior to joining ACT, Mr. Mickunas was Executive Director, Regulatory Affairs and Quality Assurance for Applied Genetic Technologies Corporation, a privately held gene therapy and genomics-focused biotech company. Before joining Applied Genetic Technologies, he was Vice President, Regulatory, Quality and Clinical Affairs for Oragenics, a company engaged in the development of vaccines, biologics and pharmaceuticals. Mr. Mickunas was previously Senior Director of Regulatory Affairs and Compliance for Control Delivery Systems, Inc., where he managed the submissions of IND filings, among other responsibilities. He also held senior regulatory positions at Bioheart, Inc., Cytomed and Del Laboratories. He received his B.S. and pursued graduate studies in human biochemistry at Fairleigh Dickinson University, as well as a Masters Degree from Fairfield University.

Reappointment of Scientific Members to the Grants Working Group

Grants Working Group Members originally appointed in late 2006 and early 2007 have terms that are now expiring or just expired. We are seeking the reappointment of the individuals listed in the table below. Their updated biographies follow. In accordance with the rules set forth by Proposition 71, reappointments should be staggered into thirds, each with a 2, 4, or 6-year term. The first reappointment of GWG members occurred over a year ago and the ICOC approved reappointment of 13 members all for 6-year terms. We propose 2 and 4-year reappointment terms for this cohort (as indicated in table) to realign with the required staggered approach.

Proposed Reappointments to GWG

Last	First	Term (Yrs.)	Expertise
Bhatia	Sangeeta	2	Bioengineering; Nanotechnology
Eaton	Douglas	2	Cellular Signaling Mechanisms
Glicksman	Marcie	2	Assay Development; Preclinical Development; Animal Pharmacology
Navran	Stephen	2	Stem Cell Culture Methods & Applications
Nilson	John	2	Gametogenesis; Endocrinology; Gonadotropins
Takayama	Shuichi	2	Bioengineering; Nano/Micro Technologies
Werner-Washburne	Margaret	2	Cell Biology; Growth Control; Genomics
Wright	Robin	2	Cell Biology; Organelle Biogenesis in Yeast
Mao	Hai-Quan	4	Material Science; Nano Technology; Drug/Gene Delivery; Stem Cell Expansion
Mendez	Ivar	4	Neurotransplantation; Neurosurgery; Robotics
Niklason	Laura	4	Cardiovascular & Cardiopulmonary Tissue Engineering
Robertson	Gail	4	Cardiac & Neuronal Electrophysiology
DiPersio	John	6	Leukemias; Bone Marrow Transplantation
Edelberg	Jay	6	Cardiovascular Disease Therapies; Biomarkers: Cardiovascular Drug Development
Furth	Mark	6	Fetal & Adult Stem Cells in Regenerative Medicine
Glass	Jonathan	6	Neuromuscular Disorders; Peripheral neuropathies (ALS)
Gunter	Kurt	6	Regulatory Affairs & Therapy Development
Kulesa	Paul	6	Cell Migration; Imaging; Stem Cell Biology
Kung	Andrew	6	Tumor & Stem Cell Biology; Clinical Transplantation

Sangeeta N. Bhatia, M.D., Ph.D.
Dr. Bhatia is a Howard Hughes Medical Institute Investigator and the John J. and Dorothy Wilson Professor of Health Sciences and Technology (HST), Electrical Engineering and Computer Science (EECS) and Institute for Medical Engineering and Science (IMES) at the Massachusetts Institute of Technology. She is a member of the Koch Institute for Integrative Cancer Research, the Ludwig Center for Molecular Oncology, the Harvard Stem Cell Institute, a Senior member of the Broad Institute, and a Biomedical Engineer at the Brigham & Women's Hospital. The research in her laboratory is focused on the intersection of engineering, medicine, and biology to develop novel platforms for understanding, diagnosing and treating human disease. She has pioneered technologies for interfacing living cells with synthetic systems, enabling new applications in tissue regeneration, stem cell differentiation, medical diagnostics and drug delivery. Her work has been profiled broadly such as in Scientific American, Popular Science, Forbes, PBS's NOVA scienceNOW, the Economist and MSNBC.

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. She is an elected Fellow of the Massachusetts Academy of Sciences, Biomedical Engineering Society, American Institute for Medical and Biological Engineering, and American Society for Clinical Investigation. She has been awarded the David and Lucile Packard Fellowship given to "the nation's most promising young professors in science and engineering," the NSF CAREER Award, the Y.C. Fung Young Investigator Award of the American Society of Mechanical Engineers, the Young Investigator Award of the American College of Clinical Pharmacology, the Brown Engineering Alumni Medal, and was named a Merkin Fellow of the Broad Institute. As a passionate mentor and advocate for diversity in science and engineering, she has been the recipient of the Harvard Medical School Diversity Award and the Harvard-MIT Thomas McMahon Mentoring Award. She co-authored the first undergraduate textbook on tissue engineering and is a frequent advisor to governmental organizations on nanobiotechnology, biomedical microsystems, and tissue engineering. She and her over 150 trainees have contributed to more than 45 issued or pending patents and launched 9 biotechnology companies with 95+ commercial products at the intersection of medicine and miniaturization. She has published well over 100 manuscripts which have been cited a total of over 11,000 times. Prior to her position at MIT, she held a tenured position at UCSD, and has worked in industry at Pfizer, Genetics Institute, ICI Pharmaceuticals, and Organogenesis.

Douglas Eaton
Dr. Eaton is the Distinguished Professor and Chair of Physiology at Emory University School of Medicine. Dr. Eaton earned an M.S. degree in Marine Biology from Scripps Institute of Oceanography and a Ph.D. in neuroscience from the University of California, San Diego. Dr. Eaton completed postdoctoral training in the Department of Physiology at the University of California at Los Angeles and then was appointed to Visiting Research Associate, Division of Biology at California Institute of Technology, Pasadena. Dr. Eaton served as Professor and Director in the Department of Physiology and Biophysics

Graduate Program at the University of Texas Medical Branch at Galveston until 1986 prior to moving to Emory.

The goal of Dr. Eaton's research is to examine the cellular signaling mechanisms which control all aspects of cellular function including cell growth, division, and responses to external stimuli, but with particular emphasis on the role of membrane ion channels in these processes. To examine these signaling mechanisms, Dr. Eaton uses contemporary methods of cellular and molecular biology including patch voltage clamp methods and expression of cloned signaling molecules in Xenopus oocytes and other expression systems. Dr. Eaton has been particularly interested in the cellular responses which involve steroid hormones and other lipid molecules.

John F. DiPersio, M.D., Ph.D.
Dr. John F. DiPersio, Deputy Director, Alvin J. Siteman Cancer Center and Chief of the Division of Oncology at Washington University School of Medicine in St. Louis and the Virginia E. and Samuel J. Golman Professor of Medicine.

Dr. DiPersio's research focuses on fundamental and translational aspects of leukemia and stem cell biology. These studies include identification of genetic abnormalities in human leukemias, understanding processes involving stem cell and leukemia cell trafficking, and clinical and translational programs in both leukemia/myelodysplastic syndrome and stem cell transplantation.

Dr. DiPersio is Chair of ASH Scientific Committee on Hematopoiesis, a member of the Board of Scientific Counselors (Clinical Science and Epidemiology) of the National Cancer Institute, and the 2013 recipient of the Daniel P. Schuster Distinguished Translational Investigator Award from Washington University, the 19th Annual AACR Joseph H. Burchenal Memorial Award for Outstanding Achievement in Clinical Cancer Research in 2014 and the 2014 recipient of the American Society of Hematology Mentor Award for Clinical Investigations.. He has authored or co-authored more than 275 publications and over 60 invited reviews and book chapters.

Dr. DiPersio received his M.D. and Ph.D. from the University of Rochester and his B.A. in Biology from Williams College. He completed an internship and residency at Parkland Memorial Hospital and The University of Texas Southwestern Medical Center in Dallas. After serving as chief resident at Parkland Memorial Hospital, Dr. DiPersio completed a fellowship in the Division of Hematology/Oncology at the University of California, Los Angeles (UCLA).

Jay Edelberg, MD, PhD
Dr. Edelberg is currently the head of the PCSK9 Development and Launch Unit at Sanofi-Aventis. He is an attending clinical cardiologist with specialties in stem cells, regenerative medicine, clinical biomarkers, thrombosis and vascular biology. Previously, he was Group Director of Clinical Biomarkers at Bristol-Myers Squibb. He earned his medical and doctorate degrees at Duke University Medical School in Durham, NC, and

went on to complete an internal medicine residency at Massachusetts General Hospital and a cardiology fellowship at the Beth Israel Hospital Boston, MA. Before joining Bristol-Myers Squibb, Dr. Edelberg was Director of Biomarkers, Biochemistry-Translational and Regenerative Medicine, and Stem Cells at GlaxoSmithKline. He was also an Associate Professor of Medicine and Cell and Developmental Biology at the Weill Medical College of Cornell University, where he directed the Cardiac Vascular Biology Laboratory in the Greenberg Division of Cardiology. Dr. Edelberg established the Cardiac Vascular Biology Laboratory at the Weill Medical College of Cornell University (New York, NY). He served as its Director from 1999 through 2006.

Dr. Edelberg's team is responsible for overseeing biomarker identification and testing for Bristol-Myers Squibb therapeutic programs for cardiovascular, metabolic and neurological diseases. His team is also responsible for human genetics core technology across all therapeutic areas. Dr. Edelberg's research has focused on the age-related impairment in endogenous cardioprotective pathways that contribute to the increased severity of cardiovascular pathophysiology observed in older persons. He has developed molecular and cellular approaches to reverse these changes to improve cardiac and vascular regenerative potential as a foundation for new therapeutic strategies.

Mark Furth, PhD

Dr. Furth is Executive Director for Product Innovation at Wake Forest Innovations, the commercialization enterprise of Wake Forest Baptist Medical Center, Winston-Salem, NC. He has worked at Wake Forest since 2005, leading translational programs in the Institute for Regenerative Medicine and Comprehensive Cancer Center before assuming his present post. Previously, Furth worked for 18 years as an executive in biotechnology and pharmaceutical companies, pursuing parallel and sometimes overlapping interests in regenerative medicine, cancer, and drug discovery. He was the first scientist at Regeneron, where his team identified several human neurotrophic factors that entered clinical testing for neurodegenerative diseases. As VP for Molecular Sciences at the Glaxo Research Institute, now GlaxoSmithKline, he helped to introduce genomics into drug discovery and supervised biochemistry and structure-based drug design technologies. As Chief Executive Officer of Ingenex Inc., a subsidiary of Titan Pharmaceuticals, Furth oversaw one of the first human trials of gene-modified hematopoietic stem cells in cancer patients, as well as programs to identify drug targets for cancer and HIV. When Pharmaceutical Product Development, a leading contract research organization, acquired Ingenex's functional genomics technology along with a combinatorial chemistry unit, Furth became Chief Scientific Officer of PPD Discovery. He subsequently served as head of research for early stage biotechnology companies in pharmacogenomics (PPGx, a joint venture of PPD and Sequana Therapeutics) and regenerative medicine (Incara, Endogeny Bio). In collaboration with his wife, Lola Reid (University of North Carolina at Chapel Hill), Furth has contributed to the identification of adult stem cells from the human liver and biliary tree that are candidates for therapy of hepatic disorders and type 1 diabetes.

Dr. Furth received his BA degree in Biochemical Sciences from Harvard University and PhD in Molecular Biology from the University of Wisconsin-Madison. He carried out

postdoctoral studies with Nobel laureate Sydney Brenner at the MRC Laboratory of Molecular Biology, Cambridge, UK, and Lasker Award winner Edward Scolnick at the National Cancer Institute. With Scolnick he developed the first monoclonal antibodies to several oncogene proteins. He led the Laboratory for Molecular Oncogenesis at the Memorial Sloan-Kettering Cancer Center, New York, NY, before moving into the biopharmaceutical industry.

Jonathan D. Glass, MD
Dr. Jonathan D. Glass heads the division of Neuromuscular Diseases in the Department of Neurology and is the Director of the Emory ALS Center. Dr. Glass received his undergraduate degree from Middlebury College (Vermont) and his MD from the University of Vermont. He trained in Neurology and Neuropathology at Johns Hopkins where he was a faculty member until moving to Emory in 1996.

Dr. Glass is widely known for his research on the pathogenesis and prevention of axonal degeneration in neurological diseases, and for his work in human and experimental neuropathology. His laboratory is currently focusing on the role of axonal degeneration in animal models of ALS as well as on proteomic biomarkers of ALS, in animals and in humans. Dr. Glass is a passionate advocate for bringing science to the clinic, and involving patients in the study of their own disease. In collaboration with ALS patients, he is exploring the biological markers of disease activity and progression. He is also the principle investigator for a first-in-human, phase 1 study of spinal cord injection of neural stem cells for patients with ALS (funded by Neuralstem, Inc).

Dr. Glass is an active clinician who has been cited each year since 2001 as one of "America's Top Doctors" (Castle Connelly) and since 2005 as one of only 5 neurologists in "Atlanta's Top Doctors" (Atlanta Magazine). He is also a teacher and mentor to young physicians and served as the director of Emory's Neurology residency program from 2001-2006.

Marcie Glicksman, Ph.D.
Dr. Glicksman is the Co-Director of the Laboratory for Drug Discovery in Neurodegeneration (LDDN) which is focused on accelerating the identification of new therapeutics. She spends about three quarters of her time focused on central nervous system diseases, the rest on other areas such as cancer and diabetes. Dr. Glicksman has extensive experience in assay development, high throughput screening, as well as animal pharmacology and preclinical development. She has been in the field of drug discovery for more than 20 years, the most recent ten years at LDDN and thirteen years in the pharmaceutical industry. Previously, she was at the company, Descartes Therapeutics focused on pain therapeutics and Cubist focused on anti-infectives. Prior to these positions, she was at DuPont-Merck and at Cephalon, Inc. She has led multiple advanced programs for neurodegenerative diseases including co-inventorship of CEP1347, a drug candidate directed at a kinase that has been in Phase III clinical trials. She has also been part of the team to prepare an IND for a drug for neuropathic pain that has just completed Phase II clinical trials. She was elected (2005-2009) to the Board of Directors and served

as Chairman of the Board for the Society for Biomolecular Sciences (now Society for Laboratory Automation and Screening). She is on the science advisory board for the Alzheimer's Drug Discovery Foundation (ADDF) and the California Institute for Regenerative Medicine (CIRM), and reviews grants for NIH, Department of Defense, SBIR, the Michael J Fox, Alzheimer's Association, the Canadian Cancer Society, and Rett Foundation. Dr. Glicksman co-founded the Academic Drug Discovery Consortium with three colleagues as a way to build a collaborative network for the academic drug discovery community. Dr. Glicksman designed and developed an annual drug discovery course supported by NIH. She also regularly consults and this has included filing an Investigational New Drug application with the FDA, as well as projects involving the development of new technologies. Dr. Glicksman received a bachelor's degree from Brown University and a Ph.D. degree in Neuroscience from Washington University.

Kurt C Gunter, MD
Dr. Gunter is Chief Medical Officer at Cell Medica Inc. He attended Stanford University and the University of Kansas School of Medicine. He completed medical residencies at the University of Kansas and Johns Hopkins. He is board certified in anatomic pathology, clinical pathology, blood banking and transfusion medicine. He completed an immunology fellowship at the US National Institutes of Health. His work experience has included the FDA as a Medical Officer in the Center for Biologics, Deputy Director of the FDA Division of Cell and Gene Therapy, Assistant Professor at Children's National Medical Center in Washington DC and several leadership positions in private industry (including Transkaryotic, ViaCell and Hospira Inc). At ViaCell he was Medical Director of the Viacord Cord Blood Bank. At Hospira, he led the Cell Therapy program and was also VP for Clinical Development. In his current position at Cell Medica, he is responsible for all medical activities, and is focused on development of the company's personalized cellular therapeutics. Outside interests include the International Society for Cellular Therapy (Immediate Past President), International Society for Stem Cell Research, American Association of Hematology, and the FDA Cell, Tissue and Gene Therapy Advisory Committee (3-year term as Industry Representative).

Paul M. Kulesa, PhD
Dr. Paul M. Kulesa is the Director of Imaging/Kulesa lab at the Stowers Institute for Medical Research, where he conducts research in embryonic cell migration and develops imaging technology to better interrogate in vivo complex cell dynamics. Dr. Kulesa received a bachelor's degree in aerospace engineering from the University of Notre Dame and a master's in applied mathematics from the University of Southern California. He completed his PhD in applied mathematics at the University of Washington, working with Prof JD Murray, FRS, an expert in applying mechanochemical models to biological pattern formation. He trained at the interface of experiment and theory as a Sloan Foundation and Burroughs Wellcome Fund postdoctoral fellow in the laboratory of Prof Scott E Fraser at the California Institute of Technology before joining the Stowers Institute. He has an adjunct appointment as Professor in the Department of Anatomy and Cell biology at the University of Kansas School of Medicine.

The goal of his research is to better understand the mechanisms that regulate cell migration and cell plasticity during development and cancer. The embryonic neural crest are an excellent model system to investigate these questions, since the neural crest are multipotent,highly invasive cells that travel in discrete, cohesive groups to nearly every organ. Neural crest cells may also de-differentiate to become aggressive melanoma and neuroblastoma cancers. Thus, he suggests that the significance of my studies is to reveal novel cellular and molecular mechanisms underlying collective neural crest migration in order to prevent human birth defects and reprogram the metastatic phenotype.

He has specific training and expertise in dynamic in vivo imaging, image analysis, and computational modeling. His laboratory has discovered exciting evidence for cell chemotaxis and cell communication through dynamic filopodia that has changed the paradigm of neural crest migration. By integrating his interdisciplinary background with development of in vivo imaging tools, his approach may yield novel insights into neural crest cell migration that will translate to human birth defects and metastatic cancers that derive from the neural crest.

Andrew L. Kung, MD, PhD
Dr. Kung, the Robert and Ellen Kapito Professor of Pediatrics, joined the New York-Presbyterian Morgan Stanley Children's Hospital/Columbia University Medical Center on July 1, 2012 as Chief of the Division of Pediatric Hematology Oncology and Stem Cell Transplantation. In this role, he oversees the clinical and research programs of the Division with the dual goal of providing outstanding care for patients today, and developing the next generation of therapies for children with cancer and blood disorders.

Dr. Kung received his M.D. and Ph.D. at Stanford University School of Medicine and completed a residency at Boston Children's Hospital. He served as a fellow in Pediatric Hematology/Oncology at the Dana-Farber Cancer Institute, where he also worked with Dr. David Livingston, a prominent cancer biologist, as a postdoctoral fellow. After completion of his training in 1999, Dr. Kung joined the faculty of the Harvard Medical School and was promoted to Assistant Professor in 2002 and Associate Professor in 2012. He is the recipient of numerous honors and awards, including the Howard Temin Award from the National Cancer Institute, and the Eugene O'Kelly Award from the American Cancer Society. Dr. Kung is an elected member of the Society for Pediatric Research and the American Society for Clinical Investigation.

Informed by a multidisciplinary approach, Dr. Kung's translational oncology research integrates molecular biology, genomics, proteomics, bioinformatics, cell biology, preclinical models, drug development and molecular imaging. The research in his lab is focused on identification of novel cancer targets, cancer genomics, and development of targeted therapies. Dr. Kung has published over 160 scientific papers, and his research has been funded by the National Institutes of Health, American Cancer Society, St. Baldrick Foundation, and the Leukemia Lymphoma Society.

At Columbia, Dr. Kung has led the development of a comprehensive personalized medicine program for children with cancer and blood disorders. Through the PIPseq

program, the power of comprehensive genetic sequencing is made available to every child treated in the Division. Coupled with the PCF Developmental Therapeutics Program and a robust clinical trials portfolio, the Division endeavors to formulate a personalized treatment plan for every patient. In addition to bringing the latest science to the clinic, under the stewardship of the Center for Comprehensive Wellness, equal emphasis is placed on providing holistic and compassionate care for every child and their family.

Hai-Quan Mao, PhD
Dr. Mao is a professor in the Department of Materials Science and Engineering at Johns Hopkins University. He received his B.S. in chemistry in 1988 and Ph.D. in polymer chemistry from Wuhan University in China. He completed his postdoctoral training in the Department of Biomedical Engineering at Johns Hopkins University from 1995 to 1998, and moved to Johns Hopkins in Singapore as a co-principal investigator for the Tissue and Therapeutic Engineering Laboratory. He also taught at the Department of Materials Science in the National University of Singapore as an adjunct assistant professor from 2001 to 2003. Dr. Mao joined the Department of Materials Science and Engineering and the Whitaker Biomedical Engineering Institute at the Johns Hopkins University as an assistant professor in 2003, and was promoted to associate professor with tenure in 2009. Prof. Mao became a member of the Translational Tissue Engineering Center in 2010. He is also affiliated with the Institute for NanoBiotechnology and the Johns Hopkins Center for Global Health.

Dr. Mao's research work received the Capsugel Awards for Outstanding Research from the Controlled Release Society in 1998 and 2001 for his innovative research in nanoparticle designs for gene delivery, the Young Investigator Award from the National University of Singapore in 2002, the Faculty Early Career Award from the National Science Foundation in 2008. Dr. Mao also received the Johns Hopkins University Excellence in Teaching Award in 2008. He has co-authored 73 peer reviewed journal publications and 17 issued US patents (15 more pending). His current research focuses on engineering polymeric nanomaterials for molecular therapy and for regenerative medicine applications.

Ivar M. Mendez, MD, PhD, FRCS
Dr. Ivar Mendez is the Fred H. Wigmore Professor and Unified Head of the Department of Surgery at the University of Saskatchewan and Saskatoon Health Region.
Dr. Mendez received his MD and PhD in Anatomy from the University of Western Ontario, London, Ontario where he also completed his post-graduate training in Neurosurgery. After completion of his neurosurgical residency, Dr. Mendez was awarded the Resident Research Prize by the American Congress of Neurological Surgeons and the William P. Van Wagenen Fellowship by the American Association of Neurological Surgeons. His research Fellowship was done at the Department of Medical Cell Research, University of Lund, Sweden. From 2000 to 2012, Dr. Mendez was the Chairman and Founding Member of the Halifax Brain Repair Centre, the most comprehensive neuroscience research institute in Atlantic Canada. Dr. Mendez was the Head of the Division of Neurosurgery at Dalhousie University and the QEII Health Sciences

Centre for more than a decade.

Dr. Mendez is a Fellow of the Royal College of Physicians and Surgeons of Canada and the American College of Surgeons. As a Clinician/Scientist, Dr. Mendez' research focus is in functional neurosurgery, brain repair, stem cells, robotic neurosurgery and computerized systems in neurosurgical applications. His laboratory research has been supported by peer-reviewed funding from a number of sources including the Canada National Centers of Excellence, Canadian Institutes of Health Research, Canada Foundation for Innovation and Parkinson's Disease Foundation of USA. He is recognized internationally as an expert in his field, having over 200 international and national presentations as well as over 200 scientific publications. For the past decade he has worked in the use of remote-presence robots for medical care in neurosurgery. In 2002, Dr. Mendez and his team performed the first long distance telementoring neurosurgery in the world and in 2013, he reported the first experience in remote programming for neuromodulation devices. Dr. Mendez was the President of the Canadian Neuromodulation Society (CNS) from 2009 – 2012 and under his leadership he promoted the access of neuromodulation therapy to all citizens of Canada. Dr. Mendez has taken an active role in humanitarian and global health issues. He has been instrumental in establishing and equipping neurosurgical units in several developing countries. Through the Ivar Mendez International Foundation, he has instituted programs for school breakfast, dental care and computer education in his native Bolivia. In 2010, Dr. Mendez was awarded a Canadian Red Cross Humanitarian of the Year Award and was named one of 10 most Influential Hispanic Canadians for his clinical research and humanitarian contributions. Dr. Mendez also received the Health Canada - 2011 Contribution to the Improvement of the Health of Canadians Award and The Queen Elizabeth II Diamond Jubilee Medal in 2012.

Dr. Mendez is also a gifted photographer and sculptor. He has published three books of photography of Bolivia and has exhibited his sculptures in Bolivia, Canada and the United States.

Stephen Navran, PhD
Stephen Navran is the Chief Scientific Officer at Synthecon, Inc. a company that specializes in the production of 3D Rotary Cell Culture Microgravity Bioreactors. In addition to his duties as CSO at Synthecon, Dr. Navran has also held an adjunct assistant professorship at Baylor College of Medicine, and served on the advisory board for the Texas A&M Program in Biotechnology. Dr. Navran earned his PhD in Pharmacology at Ohio State University and completed his postdoctoral work in Cardiovascular Biology at Baylor College of Medicine

Dr. Navran's research goals include developing in vitro methodology to culture isolated islets of Langerhans prior to transplantation to enhance the function of the graft and the development of large-scale culture methods for culturing stem and progenitor cells for practical applications in cell and tissue therapy. Dr. Navran holds multiple patents in this area.

Laura Niklason, MD, PhD
Dr. Niklason is Professor of Anesthesia and Biomedical Engineering at Yale. She received her Bachelors degrees in Physics and Biophysics from the University of Illinois, and went on to the University of Chicago for her PhD in Biophysics in 1988. Dr. Niklason subsequently received her MD from the University of Michigan, where she did her internship. She then went on to the Massachusetts General Hospital for residency in Anesthesia, followed by fellowship training in Critical Care Medicine. During her time in Boston, Dr. Niklason was also a post-doctoral researcher at MIT with Dr. Robert Langer, where she developed techniques for the tissue engineering of autologous arteries. Dr. Niklason joined the faculty at Duke University in 1998, where she continued her work in cardiovascular tissue engineering, and founded a biotechnology company designed to bring tissue engineered cardiovascular products to the clinic. Dr. Niklason has received national and international recognition for her work in this field, receiving the Discover Magazine award for Technological Innovation in 2000. In January of 2006, Niklason moved to Yale University, where she is expanding her research program in tissue engineering of blood vessels and lung, as well as understanding the basic aspects of cellular aging.

Currently, Dr. Niklason's research program has several areas of focus. With regard to engineered arteries, Niklason is engaged in preclinical studies in large animals to validate the method for generating engineered tissues that are available "off the shelf". Large animal studies on vascular grafts are centered on immune/inflammatory response minimization to these off-the-shelf tissues, and on the long-term function of the grafts in the arterial circulation. In addition, Niklason is developing tissue engineering approaches to generating vascularized cardiac muscle, as well as vascularized lung tissue. In addition, Niklason has active research interests in vascular remodeling that is associated with various disease states, including atherosclerosis and arterial vasospasm.

John Nilson, PhD
Dr. John H. Nilson is the director of the School of Molecular Biosciences and the Edward R. Meyer Distinguished Professor at Washington State University. Dr. Nilson is a member of numerous scientific organizations including the Endocrine Society, and served as President for the Society for the Study of Reproduction. He is Director of CMB T32 Training Program and previously served as Director of the NIH funded Medical Scientist Training Program (MSTP) at Case Western Reserve University. He also chaired the NIH Panel on Innovative Interdisciplinary Graduate Programs for the NIH Roadmap in June 2004 and the NIGMS Panel on Graduate Training Programs in July 2005. Dr. Nilson is deeply committed to graduate education and to undergraduate and post baccalaureate programs, especially those that serve underrepresented groups to create STEM pathways for graduate education in the biomedical sciences. He has served on several NIH study sections, and as a member of the editorial boards of the Journal of Biological Chemistry and Endocrine Reviews, and from 1998 to 2003 he served as Editor-in-Chief for Molecular Endocrinology. Previously, he was named the John H. Hord Distinguished Professor and chair of the pharmacology department at Case Western Reserve University. Dr. Nilson received his BS in Zoology, from the University of Tulsa, and his PhD in Biology from the University of New Mexico in Albuquerque. Following

graduation he completed postdoctoral work as an NIH Fellow at Michigan State University.

Dr. Nilson's laboratory has had a long-standing interest in deciphering critical elements and factors responsible for correct temporal, spatial, and hormonal regulation of the genes that encode the two subunits of LH, αGSU and LHβ. In addition, Dr. Nilson's lab also uses transgenic technology to develop mouse models that mimic human diseases specific to the reproductive endocrine axis. The long-term goal of the Nilson laboratory is to establish a comprehensive bank of gene expression profiles to identify the complete molecular pathways necessary and sufficient for tumorigenesis.

Gail Robertson, PhD
Dr. Robertson is a professor in the Department of Physiology, University of Wisconsin-Madison, and co-founder of the M.S. in Biotechnology Program. Dr. Robertson earned her Ph.D. in Neuroscience at Washington University, St. Louis. Dr. Robertson serves on a panel for the National Institutes of Health responsible for the evaluation of federally funded Ph.D. graduate programs in the biological sciences across the country. She has served as a member of the Editorial Board for The Journal of Biological Chemistry. Her honors include a National Science Foundation CAREER Award and the Established Investigator Award of the American Heart Association.

Dr. Robertson's laboratory studies the molecular mechanisms underlying rhythmic activity of the heart. Work in her laboratory uncovered the cause of type 2 Long QT Syndrome (LQTS), a potentially fatal cardiac arrhythmia disease, as a loss of the repolarizing current cardiac IKr. The ion channels underlying IKr, called hERG channels, are also the targets for acquired LQTS, a much more clinically prevalent condition affecting 1-4% of the general population. Acquired LQTS is caused when drugs with other therapeutic targets inappropriately block the hERG or IKr channels, thus mimicking inherited LQTS. Dr. Robertson is actively engaged in the transfer of hERG-related technologies, which are used by drug discovery companies to screen out those drugs that block hERG channels and may therefore trigger acquired LQTS. In addition, she consults for biotechnology and pharmaceutics companies engaged in research on hERG and other ion channel targets.

Shuichi Takayama, PhD
Dr. Takayama is a Professor in the Department of Biomedical Engineering at the University of Michigan and the Macromolecular Science and Engineering Program. He also serves as associate director of the Michigan Center for Integrative Research in Critical Care (MCIRCC), an executive committee member of the Biointerfaces Institute, and director for the Microfluidics in Biomedical Sciences Training Program. He received his PhD from the Scripps Research Institute in 1998 and was a Leukemia and Lymphoma Society Postdoctoral Fellow at Harvard University from 1998-2000. He joined the University of Michigan in fall 2000.

His current technological research interests include organs on a chip, nanofluidic epigenetic studies, microfluidic studies of cell signaling, and multiplex protein biomarker

analysis using aqueous two phase systems. Specific cellular topics include micro-engineered stem cell niches, microfluidic models of lung injury, artificial oviducts for enhanced in vitro fertilization treatment, and 3D models of cancer metastasis. Examples of bioanalysis applications include multiplexed immunoassays for diagnosis of graft-versus-host-disease, multi-color histone modification mapping from single chromatin fibers and dissecting G-protein coupled receptor signaling pathways through biochemical phase locking analysis.

Dr. Takayama serves as associate editor of *Integrative Biology* as well as editorial board members for *Microfluidics and Nanofluidics, Journal of Mechanics in Medicine and Biology, Technology*, and *Biomedical Engineering Letters*. He has published over 180 peer-reviewed articles. He is also a standing member of the Instrumentation and Systems Development (ISD) Study Section at the NIH. Awards and Honors include The Ralph E. Powe Junior Faculty Award, NSF Career Award, College of Eng, George J Huebner, Jr Research Excellence Award, Pioneers of Miniaturization Award, and Rackham Graduate Student Mentor Award.

Margaret Werner-Washburne, PhD
Dr. Werner-Washburne is Regents' Professor of Biology at the University of New Mexico in Albuquerque and an NSF Presidential Young Investigator. From 1997 she was Vice Chair of the Department of Biology at the University of New Mexico. Dr. Warner-Washburne has been interim director of the Southwest Genomics and Biotechnology Alliance, and Program Director of Microbial Genetics at the National Science Foundation. She has received numerous awards for both her science and her mentoring, including a Presidential Award for Excellence in Science, Math, and Engineering Mentoring in 2004, the 2011 Scientist of the Year Award from the Harvard Foundation, and a Proclamation for service to NM from NM House of Representatives in 2003. Dr. Werner-Washburne received her MS in Botany from the University of Hawaii, and her PhD in Botany and a minor in Biochemistry from the University of Wisconsin-Madison.

Dr. Werner-Washburne studies the process of entry into and survival during stationary phase in yeast, which is induced by nutrient limitations. One of the possible outcomes of this work is a better understanding of what regulates entry into and exit from G0 in mammalian cells.

Robin Wright, PhD
Robin Wright is Associate Dean for Faculty and Academic Affairs in the College of Biological Sciences (CBS) and professor of Genetics, Cell Biology, and Development at the University of Minnesota. Her research program has focused on the genetics and physiology of sterol biosynthesis and cold adaptation in yeast. Over the past 21 years, she has mentored more than 100 undergraduate researchers. She is currently working exclusively on undergraduate education research and initiatives. Prof. Wright has experience teaching both large and small classes, including freshman seminars, large introductory biology courses, and skill-oriented courses for honors students. The University of Washington, her previous institution, recognized her teaching innovations with a university-wide Distinguished Teaching Award. Her major goal as Associate

Dean is to catalyze the development of the nation's best biology curriculum, including biology courses that apply principles of active learning, research, and engagement. She helped to develop and co-teaches in an orientation/enrichment course required for all 500 incoming freshmen in the college. She has also been a leader in development of Foundations of Biology, an innovative, team-based introductory biology course for biological sciences majors. Prof. Wright has served on the Education Committee of the American Society for Cell Biology and was formerly the chair of the Education Committee for the Genetics Society of America. In addition, she served as an editor and senior editor of the Journal: Life Science Education. She is a member of the Advisory Committee for the HHMI/National Academies of Science-sponsored Summer Institute on Biology Education, and has served as a mentor and presenter at each annual workshop since the first one in 2003. She is currently the founding editor of a new biology education journal, CourseSource, which will publish biology curriculum materials that are linked to learning outcomes established by biological sciences professional societies. In 2012, she was named as a Fellow of the American Association for the Advancement of Science. In 2014, she was awarded the Elizabeth W. Jones Award for Excellence in Education from the Genetics Society of America.