CALIFORNIA'S STEM CELL AGENCY

Nominations for Appointment to the Grants Working Group (GWG)

Appointment of New Members

Linzhao Cheng, PhD
Linzhao Cheng, PhD, the Edythe Harris Lucas and Clara Lucas Lynn Professor of Hematology, is a professor of medicine, oncology and gynecology/obstetrics. He is a founding member of the Stem Cell Program in the Institute for Cell Engineering, Johns Hopkins University School of Medicine. Dr. Cheng is also the associate director for basic research in the Division of Hematology and a member of the Johns Hopkins Kimmel Cancer Center. Cheng received his Ph.D. in molecular biology and genetics from The Johns Hopkins University in 1991 and joined its faculty in 1999.

While a doctoral student, Dr. Cheng worked on human DNA replication models and transcriptional factors, including one of the first two DNA-binding proteins from mammalian cells (NF-I/CTF). He initiated his stem cell research career as a postdoctoral fellow, helping establish mouse pluripotent stem cell lines from primordial germ cells, a landmark study published in *Nature* in 1992. Since 1994, his research has focused on human stem cell biology and cell engineering. Dr. Cheng led groups within the industry and at Johns Hopkins and has published more than 78 original research papers, including those in *Nature Biotechnology, Nature Medicine, Nature Genetics, Cell, Stem Cell, Blood,* and *Proceedings of the National Academy of Sciences*. His lab is currently focused on using human stem cells for blood disease modeling and treatment.

Dr. Cheng's involvement in stem cell research has included investigations at the National Institutes of Health (NIH), in the biotech industry, and as a faculty member at Johns Hopkins. He was the recipient of the USA Presidential Early Career Award for Scientists and Engineers in 2003. In 2012, Dr. Cheng was elected as a fellow of American Association for Advancement of Sciences (AAAS). Dr. Cheng also received an award in 2004 from National Natural Sciences Foundation of China (NSFC) to promote international collaborations. He has served frequently as a reviewer/adviser for granting agencies including the NIH, NSF (USA), Cancer Research UK, Canada FFI, Swiss NSF, NSFC, and STCSM (Shanghai) and as an editorial board member for *Stem Cells (USA), Regenerative Medicine (UK),* and *Cell Research (China)*. Dr. Cheng is a member of the International Affairs Committee for the International Society for Stem Cell Research (ISSCR), the Stem Cell Policy and Ethics (SCoPE) Program at The Johns Hopkins University, and the (international) Hinxton Group focusing on stem cell policies and ethics.

Seth Pollack, MD
Seth Pollack, MD, is an Assistant Member in the Clinical Research Division's Program in Immunology at the Fred Hutchinson Cancer Research Center, Assistant Professor at the University of Washington and attending physician at the Seattle Cancer Care Alliance. He received a BA in Mathematics at Haverford College and his MD at the George Washington Universtiy School of Medicine. He subsequently did a residency in internal medicine at the George Washington University Medical Center, followed by an oncology fellowship at the University of Washington (UW)/ Fred Hutchinson Cancer Research Center.

The Pollack Lab develops novel immunotherapies for patients with advanced sarcoma, with a particular focus on those sarcomas that express high levels of the cancer testis antigen NY-ESO-1, Synovial Sarcoma (SS) and Myxoid/ Round Cell Liposarcoma (MRCL). His translational lab works mainly with human samples, both both freshly procured biopsy samples from patients on immunotherapy clinical trials and samples maintained in novel ex vivo culture systems. His main objective is to manipulate these cold tumor micro-environment to allow cellular therapies, vaccines and checkpoint inhibitors to function better.

Vijay Sankaran, MD, PhD
Vijay G. Sankaran is an Assistant Professor of Pediatrics at Harvard Medical School and an Attending Physician in Hematology/Oncology at Boston Children's Hospital and the Dana-Farber Cancer Institute. He received a B.A. and M.S. from the University of Pennsylvania in biochemistry, an M.Phil. from the University of Cambridge in biochemistry, and earned his M.D. and Ph.D. degrees from Harvard Medical School. He subsequently did a residency in pediatrics at Boston Children's Hospital and Boston Medical Center, followed by a fellowship in pediatric hematology/oncology at Boston Children's Hospital and the Dana-Farber Cancer Institute. Dr. Sankaran has received a number of awards for his work on using human genetics to better understand the process of blood cell production, including most recently the 2015 Young Investigator Award from the Society for Pediatric Research and the 2014 Cohen Memorial Lectureship from the Children's Hospital of Philadelphia.

Kim Smith-Whitley, MD
Kim Smith-Whitley, MD, is currently the clinical director of the Division of Hematology and the director of the Comprehensive Sickle Cell Center at The Children's Hospital of Philadelphia (CHOP). In addition, she is also an Associate Professor of Pediatrics at the Perelman School of Medicine at the University of Pennsylvania.

With over 20 years of clinical experience, Dr. Smith-Whitley's research interest focuses on sickle cell survivorship: predicting and preventing long-term, chronic, and life-threatening complications of the disease. She's assisted in the development of two initiatives programs at CHOP, "A short-stay Hematology Acute Care Unit" and "The Blue Tie Tag program to recruit blood donors for pediatric transfusions."

Dr. Smith-Whitley received a Master of Clinical Epidemiology and Biostatistics at the University of Pennsylvania. She then received her medical degree from The George Washington University School of Medicine. Her dedication and hard work led her to receive the Blockley-Osler Award for excellence in teaching clinical medicine at the bedside in 2010.

Reappointment of Scientific Members to the Grants Working Group

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.

Proposed Reappointments to GWG

Last	First	Term	Expertise
Barker	Roger	6	Neuoscience (PD, HD); Cell Therapy; Biomarkers, Neurogenesis
Gunter	Christie	2	Human Genetics & Genomics; Fragile X Syndrome
Isacson	Ole	2	Neurodegenerative Disease (PD, HD); Neuroregeneration
Kim	Daniel	4	Neurological Surgery; Spinal Surgery
Mattick	John	2	Genetics & Genomics; Non-coding DNA
Mehta	Samir	6	Orthopaedic Trauma; Fractures; Articular Cartilage Injury
Meissner	Alexander	6	Stem Cell Biology; Epigenetic and Cellular Reprogramming
Olson	Maynard	4	Genomics; Natural Variation in DNA Sequence; Precision Medicine

Parenteau	Nancy	6	Biotechnology; Biological Products; Drug Development
Roach	Jared	4	Basic & Translational Analysis & Application of High Throughput Systems Biology Data
Surani	Azim	4	Mammalian Germ Cells; Pluripotency; Epigenesis; Single Cell Technology

Roger A Barker, BA, MBBS, MRCP, PhD
Dr. Barker is Professor of Clinical Neuroscience at the University of Cambridge and an Honorary consultant neurologist at the Addenbrooke's Hospital in Cambridge UK. Dr. Barker did his undergraduate training at Oxford University and his clinical training at St Thomas' Hospital in London. He then completed his general medical training in London, during which time he developed the apomorphine test assessing dopaminergic responsiveness in Parkinson's disease (PD). Dr. Barker moved to Cambridge in 1991 to undertake a PhD at the University on neural grafting in PD with Professor Stephen Dunnett and James Fawcett. In 1994, he went on to complete his specialist training in neurology including an 18-month time working at the National Hospital for Neurology and Neurosurgery at Queen Square in London. In 1997 he returned to Cambridge as an MRC Clinician Scientist Fellowship and took up his current position in 2000.

Dr. Barker combines clinical research in Huntington's (HD) and Parkinson's disease (PD) with more fundamental research in the laboratory on better therapies for these conditions, including cell-based approaches. The clinical research concentrates on defining the spectrum of deficits in these disorders and the heterogeneity of these diseases and the basis for this. He also is an active neurologist who sees patients with general neurological problems in clinics and in the hospital, in addition to which he runs specialist clinics for patients with HD and PD.

Dr. Barker has published over 400 papers and sits on the editorial boards of many journals and is Co-Editor in chief of the Journal of Neurology and an Associate Editor of the Journal of Parkinson's Disease. Dr. Barker is a Director of the ISSCR and currently chairs their clinical translational committee. He is also the new Director of the UK MRC funded Regenerative Medicine Platform hub in pluripotent stem and engineered cells. He is the coordinator of the FP7 TRANSEURO project looking at fetal cell grafting in patients with early PD and a founding member of GFORCE-PD.

Christie Gunter, PhD
Dr. Gunter earned her PhD in human genetics at Emory University in 1998, studying fragile X syndrome and mechanisms of dynamic mutation. She then moved to Case Western Reserve University and completed both postdoctoral work on X chromosome inactivation and an editorial fellowship at the journal Human Molecular Genetics. From 2002 to 2008, Dr. Gunter served as a senior editor for the journal Nature, handling the areas of genetics, genomics, and gene therapy.

She then joined the HudsonAlpha Institute for Biotechnology as the Director of Research Affairs. Currently, she holds adjunct professor appointments at the University of Pennsylvania, University of Alabama Huntsville and University of Alabama Birmingham. She is a frequent lecturer on the editorial process for publishing in several leading journals, the changing landscape of publication and the importance of science communication. At Marcus Autism Center, Dr. Gunter coordinates genetics activities and science communication, working with researchers and the public to publish and translate scientific findings

Ole Isacson, MD, PhD
Dr. Isacson is Professor of Neurology and Neuroscience at Harvard Medical School and Director of the Neuroregeneration Research Institute at the McLean Hospital at Harvard Medical School. He received his Medical Bachelor (1984) and Doctor of Medicine (as a full PhD doctoral degree and training in Medical Neurobiology, 1987) from the University of Lund (Sweden). His postdoctoral fellowship and training were at Cambridge University (England) from where he was recruited as assistant Professor to Harvard University (1989). Dr. Isacson's fundamental research has provided novel concepts and discoveries using ES and iPS cells to model brain diseases and for therapeutic neuroprotection and restoration of degenerated brain cell circuitry in Parkinson’s disease.

Dr Isacson is the founding Director of the Neuroregeneration Research Institute at McLean Hospital/Harvard Medical School, which has grown from his original laboratory established in 1989. Dr. Isacson is principal faculty of the Harvard Stem Cell Institute and a member of the Advisory Board for the Harvard NeuroDiscovery Center. He is the Executive Director of the NIH/NINDS PD iPS Research Consortium. He is a recipient of awards, including the Fernstrom Foundation Research Scholarship Award (Lund University), the Royal Swedish Academy of Sciences: Lindahl Young Investigator Award, the Bernard Sanberg Memorial Prize for Brain Repair (ASNTR), and the Druker Memorial Lecture Award (Boston). He is a member of the MJFF Scientific Advisory Board and the Scientific Advisory Council for NeuroStemCell of the Eurostem Consortia. He is the current Editor in Chief of *Molecular and Cellular Neuroscience*. He has published over 300 original peer- reviewed scientific articles and reviews.

Daniel H. Kim, MD
Dr. Kim is a fellowship-trained, board-certified neurosurgeon who is an expert in minimally invasive spinal surgery, both endoscopic and robotic; peripheral nerve surgery; and complex spinal reconstruction. He is currently Director of Reconstructive Spinal and Peripheral Nerve Surgery at the Mischer Neuroscience Institute and Professor in the Vivian L. Smith Department of Neurosurgery at the University of Texas Health Science Center at Houston (UTHealth) Medical School. Dr. Kim has won numerous awards and honors, authored hundreds of papers and published seventeen surgical textbooks. He is a preeminent researcher in peripheral nerve repair through nerve transfer and nerve graft, and is also recognized for his work in neurorehabilitation through robotics and cortical stimulation, spinal biomechanics and innovative neuromodulation treatments for chronic pain. Dr. Kim is also an adjunct professor in the Department of Bioengineering, Electrical Engineering and Computer Science at Rice University.

Before his appointment at the Mischer Neuroscience Institute, Dr. Kim served as a Professor in the Departments of both Neurosurgery and Orthopedic Surgery at the Baylor College of Medicine (BCM). He was the Director of Spinal Neurosurgery and Reconstructive Peripheral Nerve Surgery for both programs. Before that, he was a full Professor at the Stanford University School of Medicine.

A graduate of the University of Oklahoma in chemical engineering, Dr. Kim received his medical degree at Tulane University School of Medicine before completing his neurosurgery residency at Louisiana State University. He completed a fellowship in spinal surgery at the University of Florida with Richard Fessler, MD, PhD.

John Mattick, AO, FAA, FTSE, FAHMS, FRCPA (Hon)
John Mattick is Senior Research Fellow with Visiting University Professorship at Green Templeton College, Oxford, and a Distinguished Visitor at St John's College, Oxford. He was most recently Chief Executive of Genomics England (2018-2019), and Director of the Garvan Institute of Medical Research in Sydney (2012-2018), where he established one of the first HiSeq X10 sequencing and clinically accredited genome analysis facilities. He was previously the Foundation Director of the Institute for Molecular Bioscience, the Australian Genome Research Facility and the Australian Research Council Special Research Centre for Functional and Applied Genomics at the University of Queensland.
Dr Mattick was a member of the Australian Health Ethics Committee of the Australian National Health & Medical Research Council, where he was involved in the development of the National Statement on the Ethical Conduct of Research involving Humans (including in vitro fertilization and stem cell research), and the joint Australian Law Reform Commission / AHEC Enquiry into the Protection of Human Genetic Information. He has served on the editorial boards of many journals, institutional advisory bodies and research review committees including the Council of Scientists of the Human Frontier Science Program, and was Chair of several Genome Canada competitions and reviews.

Dr Mattick is well known for his work showing that the majority of the human genome is not junk but rather specifies an RNA-based regulatory system that organises multicellular differentiation and development. He has published over 300 research articles and reviews, which have been cited over 40,000 times (Scopus, h-index 95; Google Scholar >60,000 citations, h-index 111), and was among the top 1% of cited authors in his field in 2018. His work has received editorial coverage *in Nature, Science, Scientific American, New Scientist* and the *New York Times*.

Dr. Mattick was appointed as an Officer in the Order of Australia (AO) for his services to molecular biology and genomics in Australia. In 2002, he was elected as an Honorary Fellow of the Royal College of Pathologists of Australasia (FRCPA), and in 2003, he was awarded the Centenary Medal by the

Australian Government for services to biotechnology. In 2006, he was awarded the CSIRO Eureka Prize for Leadership in Science. In 2007, he was awarded the inaugural Gutenberg Chair at the Université Louis Pasteur De Strasbourg and elected as an Associate (Foreign) Member of the European Molecular Biology Organization. He was elected a Fellow of the Australian Academy of Science in 2008, the Australian Academy of Health & Medical Sciences in 2015, and the Australian Academy of Technology & Engineering in 2017.

Dr. Mattick was awarded the 2011 International Union of Biochemistry and Moelcular Biology (IUBMB) Medal, the 2012 Human Genome Organisation Chen Medal for Distinguished Academic Achievement in Human Genetics and Genomic Research, the 2014 University of Texas MD Anderson Cancer Center Bertner Award for Distinguished Contributions to Cancer Research, and the 2017 Lemberg Medal of the Australian Society for Biochemistry and Molecular Biology.

Samir Mehta, MD
Dr. Mehta is Assistant Professor in the Department of Orthopaedic Surgery at the Hospital of the University of Pennsylvania. He completed his BA degree at Northwestern University in the Integrated Science Program with a minor in English and then returned to his hometown of Philadelphia to earn his MD at Temple University. Dr. Mehta completed an orthopaedic surgery residency at the University of Pennsylvania where he was a research fellow and was also awarded the DeForest Willard Award. Having developed an interest in orthopaedic traumatology, Dr. Mehta furthered his education as an orthopaedic trauma fellow at Harborview Medical Center in Seattle, Washington. Upon completion of his orthopaedic trauma fellowship, he was awarded the AO John Border European Trauma Award as the best graduating orthopaedic trauma fellow from North America and continued his education at the University of Saarland in Homburg, Germany. Dr. Mehta then took a faculty position at the Hospital of the University of Pennsylvania as Chief or the Orthopaedic Trauma and Fracture Service. He has a particular interest in pelvic and acetabular fractures, repair of non-unions and malunions, and reconstruction of peri- articular fractures.

Dr. Mehta is also actively involved with the American Academy of Orthopaedic Surgery (AAOS), the American Orthopaedic Association, and the Orthopaedic Trauma Association. He has been awarded the prestigious American Orthopaedic Association-North American Traveling Fellowship and also has served as an AAOS Health Policy Fellow on Capitol Hill. Dr. Mehta has participated in over fifty peer review publications, has multiple current studies, and has presented on numerous occasions nationally and internationally. He has been actively involved in multiple research projects examining graduate medical education and is currently a faculty member for the AAOS Course for Orthopaedic Educators. Dr. Mehta is actively involved in the Department of Orthopaedic Surgery at the University of Pennsylvania serving on the Graduate Medical Education Committee, Finance Committee, as the Trauma Liaison, and participating in Resident Applicant Interviews. In addition, Dr. Mehta enjoys running and traveling.

Alexander Meissner, PhD
Dr. Meissner is Associate Professor of Stem Cell and Regenerative Biology at Harvard University, Principal Faculty at the Harvard Stem Cell Institute, and Senior Associate Member at the Broad Institute, which is a collaborative, multidisciplinary initiative of Harvard University and the Massachusetts Institute of Technology (MIT), and a Robertson Investigator at the New York Stem Cell Foundation. He received his degree in medical biotechnology at the Technological University of Berlin, and his PhD at MIT's Whitehead Institute, where he also completed a postdoctoral fellowship.

Dr. Meissner's laboratory uses genomic tools to study stem cell biology with a particular focus on epigenetic reprogramming. The term epigenetic refers to stable modifications of the chromatin and DNA that do not alter the primary nucleotide sequence. The global epigenetic makeup of a cell is a powerful indicator of its developmental state and potential. His laboratory applies next generation sequencing technologies to study the epigenome in early development, stem cells and cancer. He is developing and applying high-throughput bisulfite sequencing (HTBS) technologies for genome-wide (nucleotide resolution) DNA methylation analysis. To gain insights into the interaction and regulation of epigenetic modifications (histone modifications and DNA methylation), Dr. Meissner's laboratory uses loss of function and gain of function systems. Pluripotent stem cells have enormous potential for regenerative medicine, and provide a powerful tool for studies in developmental biology and pharmacology. Recent advances in transforming somatic cells directly into pluripotent (iPS) cells provide an attractive avenue for

generating patient-specific stem cells. Dr. Meissner is identifying the epigenetic changes and components involved in reprogramming and maintaining cellular states.

Dr. Meissner has published in many peer-reviewed journals including *Nature*, *Nature Genetics, Nature Biotechnology*, *Nature Methods*, *Cell*, and *Trends in Molecular Medicine*. He has received several awards, and has been nominated for Technology Review's "Top Innovators Under 35" award. Support for his research includes funding from the National Institutes of Health's Roadmap Epigenomics initiative, the NIGMS and the NYSCF.

Maynard Olson, PhD
Dr. Olson is Professor Emeritus of Medicine and Genome Sciences at the University of Washington. His undergraduate education was at the California Institute of Technology, and he received his PhD in chemistry from Stanford University in 1970. After earlier faculty appointments at Dartmouth College and Washington University, he came to the University of Washington in 1992.

During his research career, Olson developed a number of experimental and computational methods, such as high-resolution, clone-based physical mapping, sequence-tagged-site-content mapping, and yeast-artificial-chromosome cloning that have been widely used in genome analysis. He also carried out numerous studies of natural genetic variation in the human and bacterial genomes. Dr. Olson participated extensively in the formulation of policy for the Human Genome Project, serving on the original National Research Council Committee on Mapping and Sequencing of the Human Genome, the National Advisory Council of the National Human Genome Research Institute, and numerous other advisory groups, as well as testifying several times about the Human Genome Project in front of Congressional Committees. In 2011, Dr. Olson served on a National Research Council Committee that issued the report "Toward Precision Medicine".

Dr. Olson has received several awards for his contributions to genome research, including the Genetics Society of America Medal in 1992, the City of Medicine Award in 2000, the Gairdner International Award in 2002, and the Gruber Genetics Prize in 2007; he was elected to the National Academy of Sciences in 1994.

Nancy L. Parenteau, PhD
Dr. Parenteau is the co-founder of BioConsultants whose focus is on analyzing, communicating, developing and supporting industry practices that can reduce the development risk of novel technology and increase the efficiency and effectiveness of bioscience R&D. Nancy is also the co-founder, President and CSO of Verik Bio, Inc. which is is developing engineered T cell-based immunotherapies that target the regeneration-capable cells of solid tumors. She is the former Senior Vice President ad CSO of Organogenesis and was co-founder and CEO of a biotech start-up, Amaranth Bio, Inc.

She brings many years of hands-on research and management experience to the challenge of bioscience development, having built and managed top cross-disciplinary teams of engineers, biochemists, cell and molecular biologists, and immunologists. Nancy has operated at technology's cutting edge throughout her career from her academic beginnings in monoclonal antibody research in its earliest days while at Georgetown, developing a novel ELISA assay commercialized while a Harvard postdoc, to pioneering the first living product to achieve clinical trial success and US FDA approval.

Dr. Parenteau was named as an International Fellow of Tissue Engineering and Regenerative Medicine by the Tissue Engineering Regenerative Medicine International Society (TERMIS) "in recognition of [her] formative role in shaping the tissue engineering and regenerative medicine field." She has served on the Chemical Sciences Roundtable of the National Research Council. Dr. Parenteau currently serves as a scientific and strategic advisor to leading companies involved in regenerative medicine and bioactive products and has served as a reviewer for translational projects for the NIH SBIR program.

Jared Roach, MD, PhD
Dr. Roach is Senior Research Scientist at the Institute for Systems Biology. He received his B.S. from Cornell University and his M.D. and his Ph.D. in Immunology under the mentorship of Dr. Leroy Hood from the University of Washington. He studied Internal Medicine at the University of Utah. His areas of expertise include Computational Biology, Genetics, Genomics, and Immunology.

Dr. Roach is interested in basic and translational analyses and applications of high- throughput systems-biology data. He is currently focusing on understanding the genetics of complex neurodegenerative diseases, including Huntington's disease. Dr. Roach is pioneering approaches for the analysis of whole genome sequencing data in the context of family pedigrees. His past studies have included (1) the systems biology of the macrophage, particularly in its role as an information processing device, at the levels of cell surface receptors, signal transduction, and nuclear regulation, (2) the molecular phylogenetics of vertebrate gene families, particularly those genes relevant to macrophage information processing, and (3) analysis and interpretation of transcript enumeration data, including RNAseq and microarray transcriptomics.

Dr. Roach was a co-developer of the pairwise end-sequencing technique. The translational impact of Dr. Roach's research contributes to clinical areas including neurodegeneration, autoimmunity, rare genetic diseases, diabetes, inflammation, and vaccine development.

Azim Surani, PhD, FMedSCi, FRS
Azim Surani is a developmental biologist who has been Marshall–Walton Professor at the Wellcome Trust/Cancer Research UK Gurdon Institute at the University of Cambridge since 1992, and Director of Germline and Epigenomics Research since 2013. He obtained his PhD in Mammalian Development in 1975 at Cambridge University under Professor Sir Robert Edwards FRS, a Nobel Prize winner in Physiology or Medicine in 2010. Dr. Surani established his first research group at the Babraham Institute in 1979, where he discovered the phenomenon of Genomic Imprinting in 1984. He and his colleagues went onto identify several novel imprinted genes and their functions, and contributed to the mechanism of imprinting involving the establishment and erasure of DNA methylation. He returned to the University of Cambridge in his current capacity in 1992.

Dr. Surani’s work over the past twelve years has revealed for the first time the genetic basis for mammalian germ cell specification, and its intimate link with the initiation of the unique and extensive epigenetic reprogramming in early germ cells. He has received several awards, including election as a Fellow of the Royal Society in 1990 and a Royal Medal in 2010 for his contributions to advances in epigenetic mechanisms and pivotal contributions to early mammalian development.