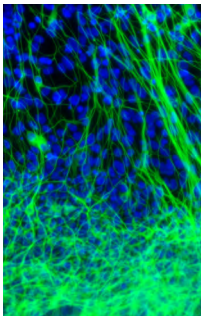


Participant Biographies

Rob Buckle, Ph.D., is the head of the Neurosciences and Mental Health Board of the Medical Research Council (MRC) Head Office in London. He is also the lead on Stem Cells and Regenerative Medicine. Buckle's responsibilities span research strategy and funding, as well as policy and public communications. In addition to the MRC's role in supporting stem cell research, it also provides the secretariat to the independent steering committee for the U.K. Stem Cell Bank and the Use of Stem Cell Lines, which has an important role in the oversight of ethical embryonic stem cell research in the United Kingdom. In addition, the MRC chairs two strategic coordination committees — the U.K. Stem Cell Funder's Forum, which encompasses all major funders of stem cell research in the United Kingdom, and the International Stem Cell Forum, which currently has 22 member organizations from 20 different countries.

Joaquin Cortiella, M.D., is an associate professor of anesthesiology and has been director of the Regenerative and Nano-Medicine Laboratory at The University of Texas Medical Branch at Galveston since 2001. He is currently a colonel in the U.S. Army Medical Corps, serving with the 399th Combat Support Hospital in Massachusetts. He has been deployed to Kosovo (2001), Kuwait and Qatar (2003), as well as Iraq (2006–2007), and has firsthand experience with battlefield-related injuries. Apart from his experience as a physician, Cortiella has extensive expertise in tissue engineering, including the production of skin, lung, cartilage (trachea repair/replacement) and hematopoietic tissues. As both a clinician and stem cell biologist, he has used cytologic, histologic and physiologic methods to analyze cell function. He has expertise in the areas of general physiology, inflammation, disease pathogenesis, cell biology, cell metabolism, stem cell characterization/differentiation and wound healing. Cortiella has been using adult and embryonic stem cells as well as tissue engineering techniques to produce human ex vivo organoids/tissue constructs to use as human model systems to study disease pathogenesis, tissue response to injury and mechanisms of cellular/tissue healing. Cortiella's publications include research in cell biology, anesthesiology, tissue engineering and nanobiology. His research has been published in numerous journals, including the Journal of Burn Care and Rehabilitation, American Journal of Physiology, American Journal of Clinical Nutrition, Journal of Tissue Engineering and Langmuir. Cortiella graduated from Harvard University with a B.A. and received his M.D. from Boston University Medical School. He completed a pediatric residency program at Children's Hospital, Boston, and an anesthesiology residency at Massachusetts General Hospital, Boston.

Elizabeth Cosgriff-Hernandez, Ph.D., is an assistant professor of biomedical engineering at Texas A&M University. Her graduate research, under the guidance of Professors Anne Hiltner and James Anderson, elucidated key cell–material interactions and biodegradation mechanisms of biomedical polyurethane elastomers. Cosgriff-Hernandez was the recipient of the 2005 Society for Biomaterials Student Award for Outstanding Research. She was also awarded the UT-TORCH Postdoctoral Fellowship and conducted bone tissue engineering research with Professor Tony Mikos at Rice University. Her postdoctoral research focused on the development of fabrication techniques for high porosity scaffolds utilizing emulsion templating. Her current research interests include biomaterial synthesis, structure–property relationships, cell–material interactions, musculoskeletal tissue engineering and biodegradation characterization. Specifically, novel block copolymer systems are under investigation as polymeric scaffolds for tendon and ligament tissue engineering. Complementary experiments that generate quantitative models of tissue remodeling will be used to improve the design of new biomaterials and guide tissue regeneration strategies. She received her B.S. in biomedical engineering and Ph.D. in macromolecular science and engineering from Case Western Reserve University in Cleveland, Ohio.

Participant Biographies (continued)

Francesco Dazzi, M.D., Ph.D., is the chair and head of the stem cell biology section and an honorary consultant hematologist in the Department of Hematology and the Kennedy Institute at Imperial College London's Faculty of Medicine. In 2005, he became professor and also head of the stem cell biology section, with a joint appointment between the Department of Haematology and the Kennedy Institute of Rheumatology. Dazzi pioneered one of the largest cellular immunotherapy programs for leukemia in the world and established several animal models to investigate outstanding clinical problems. He was one of the first to characterize the immunosuppressive effects of mesenchymal stem cells (MSC), identifying a new mechanism of immune tolerance with distinctive tissue repair activity. His team successfully tested MSC in preclinical models of immune mediated diseases, and this work has formed the basis of U.K.-wide clinical studies of MSC. His work, published in high-impact scientific journals, was awarded prizes from the European and the American Societies of Bone Marrow Transplantations. Dazzi serves in the boards of international societies and top scientific journals. He is a faculty member of a group of experts (F1000) who update the scientific community on stem cell discoveries, and also sits on various national and international scientific committees for the development of standards on the preparation and delivery of stem cell therapies. Dazzi obtained his M.D. and Ph.D. at Padua University Medical School, and subsequently trained as a hematologist at Verona University and at the Royal Postgraduate Medical School.

Benjamin Deneen, Ph.D., is an assistant professor and member of the Center for Stem Cell and Regenerative Medicine Center at Baylor College of Medicine. His laboratory studies the molecular and cellular mechanisms that control the generation and differentiation of glial cells. Glia constitute 90 percent of the central nervous system (CNS), but the transcriptional mechanisms that control their development and diversity are a mystery. Using prospective isolation of stem cell populations from different stages of embryonic spinal cord, coupled with microarray analysis, Deneen's lab has identified a family of transcription factors (the Nuclear Factor I family, or NFI) that control the specification of glial cell identity. One line of investigation in the laboratory involves temporal profiling of spinal cord stem cell populations from knockout embryos to identify target genes of NFI family members required for the initiation of gliogenesis. Another includes the identification of the mechanisms that control NFI gene induction during CNS development. Many of the markers in glial cells are also expressed in gliomas, glial-based malignancies of the CNS and the most common and deadly form of adult brain cancer. NFI genes are also expressed in gliomas, and manipulation of NFI gene expression in established glioma cell lines impacts tumor formation. Currently, the lab is validating and extending these studies in more contemporary models of glioma. Given that NFI genes are expressed in gliomas and may be important for tumorigenesis, the biology surrounding their normal function during gliogenesis is also implicated in glioma biology. Thus, any of the NFI target genes or mechanisms that control their induction identified in the developmental studies may also be pertinent to glioma biology. Deneen received his Ph.D. from the University of California, Los Angeles, and completed a postdoctoral fellowship with the division of biology at California Institute of Technology.

Larry Denner, Ph.D., is a professor in the Division of Endocrinology of the Department of Internal Medicine at The University of Texas Medical Branch (UTMB) at Galveston. He is also director of McCoy Stem Cells and Diabetes Mass Spectrometry Research Laboratory, associate director of research of the Nelda C. and H.J. Lutcher Stark Diabetes Center and a scientist at the Sealy Center for Molecular Medicine. Previously, Denner worked at a start-up drug discovery company in Houston — Texas Biotechnology Corporation — as a senior scientist, eventually being promoted to director of the Department of Molecular and Cellular Biology. He was a founder and chief scientific officer of a subsidiary in Berlin, Germany. Denner joined UTMB as an associate professor in 2003, becoming professor in 2007. Denner is committed to bringing cutting-edge technologies, such as proteomics, to the discovery of stem cell therapeutics and drugs in chronic diseases in the fields of Alzheimer's disease, diabetes, reproductive endocrinology and traumatic brain injury. In addition, he is pursuing the translation of basic research discoveries to improvements in patient care through community-based education on prevention and control of chronic diseases. Denner is a graduate of the University of California, Irvine, where he earned a B.S. in biology. He completed a Ph.D. in neuroscience at Baylor College of Medicine, where he subsequently trained in molecular endocrinology in the Department of Cell Biology.

Participant Biographies (continued)

Glenn Dickson, Ph.D., is head of the Tissue Engineering Research Team of the School of Medicine, Dentistry and Biomedical Sciences at Queen's University of Belfast (QUB). He also is a university senior lecturer and recently joined the Cancer and Cell Biology Research Centre as a principal investigator. In addition, Dickson is a principal investigator in a Department of Health–recognized research group in trauma and rehabilitation. He has researched and lectured for many years on anatomy and orthopaedic surgery. Dickson's research is on in vitro and in vivo aspects of bone and cartilage development, repair, mineralization and disease and on fracture repair and cell therapy. In recent years he has focused on biomaterial and cell research for bone tissue engineering applications. He founded the QUB Belfast Bone Tissue Engineering Research Team and convened several Belfast Bone Tissue Engineering Workshops. Previously, Dickson also served as president for The Northern Ireland BioMedical Engineering Society and as a member of the BioEngineering Section of the Royal Academy of Medicine in Ireland. Dickson's team has developed rodent models for fracture repair and fracture non-union and investigated the potential of adult mesenchymal stem cells to repair bone defects. His research has evaluated the potential of e-beam technology to change the degradation profile of biodegradable polymers used in medical devices; investigated the osteogenic efficiency of human and animal marrow mesenchymal cells; and examined novel peptides and biodegradable polymers as delivery vehicles for tissue engineering and regenerative medicine. Dickson edited the seminal book "Methods of Calcified Tissue Preparation" (Elsevier), and was awarded the 2009 President's Medal of the U.K. Institute of Biology for meritorious service to biology. He received both his M.Sc. and Ph.D. in anatomy from the Queen's University of Belfast.

Malcolm Gillis, Ph.D., is the Ervin K. Zingler Professor of Economics at Rice University and the executive director of the TX–UK Collaborative. After distinguished careers at Harvard and Duke Universities, Gillis served as president of Rice for more than a decade. He has dedicated more than 25 years of his professional career to teaching and applying economic analysis to important issues of public policy spanning nearly 20 countries. He has published more than 70 journal articles and authored several leading economic textbooks. He was co-founder and chair of the board of trustees of the Center for World Environment and Sustainable Development and the Duke Center for Tropical Conservation. From 2005 to 2008, Gillis was chair of BIOHOUSTON, an organization promoting Houston as a major center for the biotechnology industry. In 2008, Texas was ranked in the top five locations in the world for the development of the biotech industry. In March 2008, he was appointed by the governor of Texas to serve as vice chairman on the Cancer Prevention and Research Institute of Texas Oversight Committee, a $3 billion effort over the next decade. Gillis holds several degrees, including a B.A. and an M.A. from the University of Florida and a Ph.D. from the University of Illinois.

Preethi H. Gunaratne, Ph.D., is an assistant professor in the Biology and Biochemistry Department at The University of Houston. Her laboratory strives to understand the role of microRNAs (miRNAs), a species of short noncoding RNAs in regulating the balancing act underlying a stem cells decision to self-renew or differentiate. The discovery of miRNAs led to a paradigm shift and uncovered a hidden layer of gene regulation that integrates the transcriptome (complete set of RNAs) with the proteome (complete set of proteins). Since then, miRNAs have been linked with stem cells, which have a dual role in development. They can either continuously replenish themselves (self-renew), or differentiate irreversibly into cells that execute a limited number of specific actions. The Gunaratne lab's goal is to understand how and under what conditions miRNAs make this determination through post-transcriptional gene silencing and transcriptional gene silencing. The lab applies genomic strategies that combine genome-wide in silico predictions, next generation sequencing using Solexa and 454 technologies, and custom microRNA microarrays in order to uncover dynamic genome-wide patterns that relate to miRNA-directed stem cell epigenome and proteome. Through its preliminary work, Gunaratne's lab has uncovered miRNA-mRNA pairs that exhibit dynamic changes during embryonic stem cell self-renewal and differentiation. They are currently designing novel strategies to validate these miRNA-mRNA relationships through miRNA-mRNA binding and miRNA loss/gain of function studies. They are exploring the possibility of a miRNA-directed priming marks chromatin regions for TGS during the establishment of the mammalian epigenome. Gunaratne received her B.S from the University of Colombo, Sri Lanka, and M.S. and Ph.D. from Cornell University.

Participant Biographies (continued)

Mariah Hahn, Ph.D., is an assistant professor in the Department of Chemical Engineering at Texas A&M University. Her current research focuses on uncovering key cause-effect relationships between specific input stimuli and resulting cell responses toward rational biomaterial design for complex tissue regeneration. Hahn has been recognized for her research through the American Chemical Society Dreyfus Lectureship Award and the College of Engineering Young Faculty Award. She received her Ph.D. under the guidance of Dr. Robert Langer at Massachusetts Institute of Technology where she specialized in vocal fold tissue engineering, followed by a postdoctoral fellowship with Dr. Jennifer West at Rice University studying cardiovascular tissue engineering and biomaterial patterning.

Denis Headon, Ph.D., is the director of the TX-UK Collaborative research initiative and founding president of BioLink USA-Ireland. He spent 25 years as lecturer/professor in biochemistry departments at University College Cork from 1972 to 1977 and at National University of Ireland, Galway, from 1978 to 1995. During his tenure in these positions he spent sabbatical periods at the University of Minnesota Medical School and at Baylor College of Medicine. In 1995, Headon co-founded and became chief scientific officer and later president and CEO of Agennix Inc. Headon is a recipient of the Royal Irish Academy Medal in Biochemistry and a Fogarty International Fellowship from the National Institutes of Health. He has co-authored more than 70 publications and is a co-inventor on more than 40 issued patents worldwide. He is an adjunct professor in the Department of Molecular and Cellular Biology at Baylor College of Medicine in Houston. Headon received his B.Sc. and Ph.D. in biochemistry from the National University of Ireland.

Karen Hirschi, Ph.D., is a professor in the Department of Pediatrics and Molecular and Cellular Biology at Baylor College of Medicine. The primary interest of her laboratory is to understand, at the cellular and molecular level, the events leading to blood vessel formation. They are interested in elucidating regulators of vascular cell (endothelial and smooth muscle) recruitment, proliferation and differentiation needed for blood vessel assembly and maintenance. The lab aims to define mechanisms by which soluble effectors, such as retinoids and TGF-b, and cell-cell junctional components, such as gap junctions, modulate vascular cell phenotype and cell cycle progression. Their research uses the mouse model system to study the regulation of blood vessel assembly in vivo (transgenesis), in situ (embryo culture) and in vitro (co-culture systems to study interactions between vascular cells and their precursors). Another focus of the laboratory is investigating the potential of adult stem cells to contribute to neovascularization in response to tissue injury and growth. Utilizing bone marrow transplantation and localized delivery techniques, Hirschi's lab studies mechanisms by which stem and progenitor cells are recruited, induced to differentiate into vascular cells and functionally integrated into existing vascular networks. Insights gained from Hirschi's cell and developmental studies are applied to the optimization of clinically relevant treatments including autologous vascular cell and gene therapy, creation of blood vessels grafts and vascularization of engineered tissues. Hirschi received her B.S from Pennsylvania State University and her Ph.D. from the University of Arizona, followed by post-doctoral work at Harvard Medical School, Boston.

Franchesca Houghton, D.Phil., is a senior lecturer of molecular cell biology (stem cell biology) and Roberts Fellow at the University of Southampton. Her research focuses on: 1) understanding mechanisms involved in the regulation and differentiation of human embryonic stem cells; and 2) investigating the biochemistry of mammalian preimplantation embryos. Houghton has been invited to give the Walpole Lecture by the Society for Reproduction and Fertility (SRF), and the Transatlantic Exchange Lecture at the annual conference of the Society for the Study of Reproduction in Vancouver, Canada. She is responsible for the center's Human Fertilisation and Embryology Authority (HFEA) research license, a member of the HFEA Licensed Centres Panel, a member of the SRF program committee and a former member of the SRF Council (2004-2009). Before being recruited to the University of Southampton, Houghton completed postdoctoral work investigating the assembly and role of gap junctions in development and cellular homeostasis using connexin43 null mutant mice, followed by a Wellcome Trust Research Career Development Fellowship at the University of York. She graduated with a degree in biomedical sciences from the University of Wolverhampton before obtaining a D.Phil in biology from the University of York, followed by postdoctoral work at the University of Western Ontario, Canada.

Participant Biographies (continued)

Frank C. Marini, Ph.D., is an associate professor in the Department of Stem Cell Transplantation and Cellular Therapy at The University of Texas M. D. Anderson Cancer Center. Marini's research has been oriented toward the understanding of key microenvironmental players in tumor stroma formation, particularly the role of normal tissue stem cells in participating in tumor development, as well as during wound healing. Marini's laboratory is interested in bringing new therapeutic strategies to patients. It creates gene-based and cell-based therapies to translate into clinical protocols. The research focuses on: 1) the understanding and use of mesenchymal stem/stromal cells (MSC) in their therapeutic potential as tissue/wound repair cell types, and in their curative properties against cancer; and 2) the design and creation of modified viral vector systems with increased tropism, delivery capacity and infectivity of target tissues. This has centered on creating modified adenoviral vectors, which will efficiently infect nontraditional target cells population, such as mesenchymal stem cells, hematopoietic stem cells and leukemia cells for the creation of tumor vaccines and tumor-selective infections. After four years in the Army, Marini returned to school to complete his B.S. in biochemistry. He completed his Ph.D. at the University of Texas Graduate School of Biomedical Sciences at Houston.

Chris Mason, M.B.B.S., Ph.D., is a professor of regenerative medicine bioprocessing at University College London (UCL). He is internationally recognized as a leader in stem cell and regenerative medicine translation and commercialization. His background in basic science, clinical medicine, bioprocessing and business provides unique insight and understanding of the challenges facing the regen sector as it grows into a competitive and sustainable global health care industry. Mason was a fellow of the Royal College of Surgeons, both of England and in Ireland. He currently holds a personal chair in Regenerative Medicine Bioprocessing, leads the Regenerative Medicine Bioprocess Group in the Advanced Centre for Biochemical Engineering at UCL, and is on the steering committee for the UCL Centre for Stem Cells and Regenerative Medicine. Other accomplishments include being senior editor of the journal Regenerative Medicine, co-founder and director of the London Regenerative Medicine Network, and founding steering committee member of the U.K. National Stem Cell Network. Mason is also on a number of national and international committees, working groups and initiatives related to the academic, clinical and commercial advancement of cell therapies and tissue engineering. He has a broad range of expertise in commercial consultancy and is presently on scientific advisory boards of a number of regen companies based in North America. Mason also led the U.K. government-sponsored "Advanced Cells and Tissue Therapy Global Watch Mission" to the United States in 2006. Mason holds a clinical sciences degree from Imperial College London, a medical degree from the United Medical and Dental Schools of Guy's and St. Thomas's Hospitals (now King's College London) and a Ph.D. from University College London.

Kirstin R. W. Matthews, Ph.D., is a fellow in science and technology policy at the Baker Institute. She is responsible for managing the activities of the Science and Technology Policy Program, which include planning conferences, conducting policy research, and writing policy reports and briefs. Matthews' research focuses on the intersection between traditional biomedical research and public policy. Her current projects include the Baker Institute International Stem Cell Policy Program, the Civic Scientist Lecture Series and Outreach Program, and policy studies in research and development funding, genomics and climate change. Matthews came to Rice University as a postdoctoral research associate in the department of physics and astronomy and a research assistant at the Baker Institute in 2003. From 2004 to 2006, Matthews was also the project director for the task force, Access to Health Care in Texas: Challenges of the Uninsured and Underinsured. The task force released the report "Code Red: The Health of Texas" in April 2006, followed by an update, "Code Red 2008," in March 2008. Matthews has a B.A. in biochemistry from The University of Texas at Austin and a Ph.D. in molecular biology from The University of Texas Health Science Center at Houston.

Participant Biographies (continued)

Antonios G. Mikos, Ph.D., is the Louis Calder Professor of Bioengineering and Chemical and Biomolecular Engineering at Rice University. He is also the director of the John W. Cox Laboratory for Biomedical Engineering and the director of the Center for Excellence in Tissue Engineering at Rice. Mikos' research focuses on the synthesis, processing and evaluation of new biomaterials for use as scaffolds for tissue engineering, as carriers for controlled drug delivery, and as nonviral vectors for gene therapy. His work has led to the development of novel orthopaedic, dental, cardiovascular, neurologic and ophthalmologic biomaterials. He is the author of more than 380 publications and 24 patents. He is the editor of 10 books and author of "Biomaterials: The Intersection of Biology and Materials Science" (Pearson Prentice Hall, 2008). Mikos is a fellow of the International Union of Societies for Biomaterials Science and Engineering and a fellow of the American Institute for Medical and Biological Engineering. He has been recognized by various awards, including the Alpha Chi Sigma Award for Chemical Engineering Research of the American Institute of Chemical Engineers, the Robert A. Pritzker Distinguished Lecturer Award of the Biomedical Engineering Society and the Edith and Peter O'Donnell Award in Engineering of The Academy of Medicine. Mikos received his Dipl.Eng. from the Aristotle University of Thessaloniki, Greece, and his Ph.D. in chemical engineering from Purdue University. He was a postdoctoral researcher at the Massachusetts Institute of Technology and Harvard Medical School.

Hoang Nguyen, Ph.D., is an assistant professor in the Department of Molecular and Cellular Biology of Baylor College of Medicine's Center for Cell and Gene Therapy. Her research focuses on skin stem cells. Her lab's long-term goal is to understand the molecular mechanisms that underlie how stem cells self-renew, maintain their multipotent state and differentiate into multiple lineages. This knowledge of stem cell biology is important to better manipulate stem cells for uses in regenerative medicine and to understand how their aberrations might contribute to a variety of diseases, including tumorigenesis. Nguyen's research uses mammalian skin as a model system to study stem cells. Early embryonic skin epithelium consists of a single layer of unspecified progenitor cells. As development proceeds, some stem cells from the basal layer differentiate upward to form the stratified epidermis, while some stem cells communicate with the underlying mesenchyme and move downward to form hair follicles and sebaceous glands. After morphogenesis, adult skin maintains its epithelial stem cells, which are regularly activated to give rise to progeny that maintain homeostasis of the skin. Currently, her lab is working to provide a deeper understanding of how stem cells maintain their multipotent status and control cell fate specification. Nguyen received her B.A. from Cornell University and her Ph.D from Cornell Medical College, before completing a post-doctoral fellowship at Rockefeller University, New York.

Joan E. Nichols, Ph.D., is an associate professor of internal medicine and of microbiology and immunology, and the associate director for research for the Galveston National Laboratory at The University of Texas Medical Branch at Galveston. As both an immunologist and cell biologist, Nichols has used cytologic, immunologic and physiologic methods to analyze cell function. She has extensive expertise in the isolation and characterization of adult stem cell populations from animal and human tissues, including bone marrow and the lung. She has been involved in research projects looking at the alterations in immune response of the lung after exposure to pollutants and/or respiratory pathogens and stem cell biology. She has expertise in the areas of general immunology, inflammation, disease pathogenesis, stem cell characterization/differentiation, wound healing, lung defense and respiratory pathogens. Nichols is currently funded by the Department of Defense under the Rapid Vaccine Assessment Program to construct an ex vivo human immune system using adult stem cells to be used to develop better vaccines and treatments for human pathogens. Nichols has been using adult and embryonic stem cells as well as tissue engineering techniques to produce human ex vivo organoids/tissue constructs to use as human model systems to study disease pathogenesis and the human response to respiratory pathogens such as avian-influenza and other biosafety level 2, 3 and 4 pathogens. Nichols' publications include research in cell biology, virology, immunology, tissue engineering and nanobiology. Her research efforts have been presented in Nature, Science, Journal of Virology, Journal of Tissue Engineering and Langmuir, as well as numerous other journals. Nichols received her B.S. and M.A. from the State University of New York, Geneseo, and her Ph.D from the University of Texas Medical Branch at Galveston.

Participant Biographies (continued)

Richard Oreffo, D.Phil., is associate dean for innovation and enterprise within the Faculty of Medicine, Health and Life Sciences at the University of Southampton. He also holds the chair in musculoskeletal science and is co-founder of the Centre for Human Development, Stem Cells and Regeneration. Oreffo leads a multidisciplinary research group focused on developing strategies to regenerate bone and cartilage using stem cell technology and innovative scaffolds for orthopaedic application (see www.skeletalstemcells.org) and on understanding bone development. Much of the work is undertaken in multidisciplinary programs in collaboration with clinicians, bioengineers, modelers and bone biologists. In 2008 he was appointed to the Research Council for Health of the Academy of Finland and currently is a member of the Biotechnology and Biological Sciences Research Council's Healthy Organism Panel, ARC Research Committee, Medical Research Council Stem Cells Basic Science Liaison Committee and U.K. National Stem Cell Network Advisory Committee. Oreffo serves on the editorial boards of the journals European Cells and Materials; Regenerative Medicine; and Journal of Tissue Engineering. He has published more than 130 peer-reviewed papers and 20 contributed reviews/book chapters. In 2009, he was elected a fellow of the Institute of Biology.

Paul Rees, Ph.D., is a professor in the School of Engineering at Swansea University, where he is a chair of nanotechnology in the Multidisciplinary Nanotechnology Centre at Swansea University. Current research interests include the theory of the electrical and optical properties of self-assembled and colloidal semiconductor quantum dots for biomedical imaging applications. More recently, he has developed Monte Carlo cell cycle models, which are fitted to flow cytometry data using genetic algorithms to determine cell parameters such as the inter-mitotic time, endosome splitting ratio and their modification due to anti-cancer drugs. Other biomedical research includes the modeling of the time evolution of blood clots and the evolution of cell populations of tissue scaffolds. He has published more than 80 refereed international journal papers and acts as a consultant to many optoelectronics companies. He is also at technical adviser to Eblana Photonics, Dublin, which develops long wavelength laser diodes for telecommunication applications. Prior to his appointment at Swansea, Rees worked at the School of Informatics at the University of Wales in Bangor, United Kingdom, where he was appointed senior lecturer in 2000. Research interests at Bangor included the effect of optical feedback in laser diodes, the use of chaos for data encryption, quantum computing and the theory of quantum-dot lasers. He received his Ph.D. in physics from Cardiff University, followed by a research fellowship in the Department of Physics at Trinity College in Dublin, Ireland.

Krishnendu "Krish" Roy, Ph.D., is an associate professor and graduate adviser in the Department of Biomedical Engineering at The University of Texas at Austin, researching the areas of drug delivery and stem cell bioengineering. He specifically works in developing biomaterials and engineering techniques to manipulate cells and tissues and understand the fundamental processes of immune response and immune system development. By understanding these processes, scientists could eventually use genetic materials and stem cell-derived immune cells to treat incurable cancers and deadly infectious diseases. Roy's lab develops biomaterials and nanodevices for delivery of drugs and genes, and studies tiny, three-dimensional polymer structures to understand how cells differentiate into complex tissues. Roy earned his Ph.D. in biomedical engineering from The Johns Hopkins University in 2000 and joined the Cockrell School of Engineering faculty in 2002.

Paul J. Simmons, Ph.D., serves as professor and director of the Center for Stem Cell Research at The Brown Foundation Institute of Molecular Medicine at The University of Texas Health Science Center at Houston. The major focus of Simmons' research for many years has been to utilize the paradigm of the hematopoietic system as a model to understand the mechanisms that contribute to the extrinsic regulation of stem cells in adult organs by the tissue microenvironment (stem cell niche) in which the stem cells reside. Simmons has received international recognition for his pioneering contributions to basic hematopoiesis research. Current studies in his lab focus on the characteristics and biological properties of hematopoietic stem cells and mesenchymal stem cells as well as defining the cell and molecular composition of the respective niches for these two stem cell populations during ontogeny and in the adult skeleton. Additional studies

Participant Biographies (continued)

focus on the identification of stem cells in the adult lung as a means to develop novel cellular therapies for treatment of the many disorders that currently affect the respiratory system. Simmons is or has served as associate editor on multiple journals in the field of stem cell biology, including Experimental Hematology, Cytotherapy and Stem Cell Research, and is on the editorial boards of Cell Stem Cell, Blood, and Stem Cells. Simmons graduated from Queen Elizabeth College at the University of London, United Kingdom, and received his Ph.D. from the University of Manchester.

Laura Suggs, Ph.D., is an assistant professor in the Department of Biomedical Engineering at The University of Texas at Austin, which she joined in 2004. In 2002, she received the National Science Foundation's Advance Fellowship for outstanding female professors. Suggs researches the development of biologically active materials and their use and behavior in cardiovascular tissue engineering. She works to better understand molecular and cellular mechanisms during processes such as vasculogenesis (formation of blood vessels) as well as the structure of both natural and synthetic polymers and their effect on living tissues. With this fundamental knowledge base, biomaterials can be designed to mimic naturally-occurring structures found in the supporting extracellular matrix. Suggs' lab uses polymer synthesis and characterization through traditional wet chemistry techniques in addition to various biochemical analysis techniques. She cultures bone marrow stem cells and evaluates differentiated phenotype and function using immunohistochemistry (using antibodies to detect antigens) and polymerase chain reaction (copying DNA to have enough to use in lab experiments). Her lab is also working on developing in vitro models of vascularization (blood vessel growth) based on coronary vessel development during embryogenesis (embryo formation). She earned her Ph.D. in chemical engineering with a concentration in biomaterials and tissue engineering from Rice University.

Alex Thompson, Ph.D., is a lecturer at Queen's University Belfast's School of Medicine, Dentistry and Biomedical Sciences. His main research interests are (i) investigation of the HOX network as a prognostic indicator of disease status in leukemia and solid tumors and (ii) structure/function of HOX-TALE interactions in normal development and disease using appropriate animal models. Development and application of specific Q-PCR platforms to both clinical and experimental models allows us to identify candidate HOX genes predominantly expressed in particular disease subtypes. Epigenetic dysregulation of the HOX network is associated with disease, particularly leukemia. Quantified gene expression profiling is essential to measure the transcriptional flux through the HOX network, determine the output and contribution of individual members and evaluate the benefits of therapeutic intervention. Identification of bona fide candidate HOX elements in disease subtypes will permit the generation of appropriate models in a timely manner to test hypotheses and novel treatments. The HOXA9-MEIS oncogenic axis has become established as a prototype for HOX-TALE interactions and is the focus of our current and future research. Thompson is a member of the American Society of Hematology, International Society for Experimental Hematology, British Society for Haematology, Haematology Association of Ireland and the International Union Against Cancer. Thompson earned his B.Sc. and M.Sc. from the University of Ulster, Coleraine, and his Ph.D. from Boston University School of Medicine.

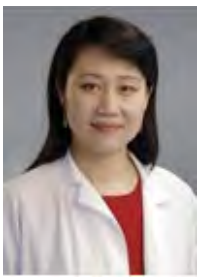
Rick Wetsel, Ph.D., is a professor in the Center for Immunology and Autoimmune Diseases, as well as the director of the Laboratory for Developmental Biology, at the Brown Foundation Institute for Molecular Medicine at The University of Texas Health Science Center at Houston. Wetsel's research interests include understanding the molecular events involved in mediating the inflammatory and immune response in both normal and pathological conditions. His laboratory is also interested in the development of novel therapeutics via embryonic stem cell research. He has received the Mead Johnson Excellence of Research Award and the James W. McLaughlin Award in Infectious Disease and Immunology, as well as an NIH Research Career Development Award. He was associate editor for the Journal of Immunology and has served on several NIH study sections and other national and international foundation peer review committees, including the Arthritis Foundation (Inflammation). He is currently the chair of the NIH Innate Immunity and Inflammation Study Section. Wetsel is a member of the American Society for Biochemistry and Molecular Biology, American Association of Immunologists,

Participant Biographies (continued)

American Association for the Advancement of Science, American Chemical Society, American Society for Microbiology and the International Complement Society. Wetsel graduated from The University of Texas in Austin with a B.S. in chemistry. He received his Ph.D. in biochemistry from The University of Texas Health Science Center in San Antonio. His postdoctoral training was performed at the Scripps Research Institute's Department of Molecular Immunology. Wetsel previously served as assistant professor of pediatrics and molecular microbiology at Washington University School of Medicine.

John O. White, Ph.D., is a professor of reproductive biology at the School of Medicine, Swansea University, where he leads the medical school's activities in reproductive sciences. He is currently chair of the Medical School Research committee and of its Institute of Life Science Executive Committee and a member of the executive committee of the Centre for Nanohealth, a joint initiative between the Schools of Medicine and Engineering at Swansea University. White works closely with clinical colleagues in the adjacent Singleton Hospital, interacting mainly with the Department of Obstetrics and Gynecology and the private sector London Women's Clinic (LWC), Swansea. This collaborating center was designated in 2006 as one of six in the United Kingdom to deliver clinical academic training in obstetrics and gynecology. The focus of research in the Reproductive Biology Group is in human health, understanding infertility and gynecological cancers through investigating the impact of aberrant transcription processes, identifying biomarkers and points of intervention that can be developed for clinical use. External collaborations are with groups at the University of London, LWC, Pfizer and through consortium partnering with groups in Maule, Chile, New York and Milan. White completed his Ph.D. at London University, undertaking postdoctoral research at The Institute of Obstetrics and Gynecology of Queen Charlotte's Hospital, London.

Cecilia Williams, Ph.D., is an assistant professor in The University of Houston's Biology and Biochemistry Department. Her interests center on the molecular function of the nuclear receptors in cancer and stem cells. Her laboratory is studying the effect on gene regulation, including noncoding RNAs, that activation of nuclear receptors infer, as well as the relationship between cancer and stem cells. They are using mammalian cell lines, knockout mice and human clinical samples that they study using large-scale genomic approaches, e.g. microarrays and next-generation sequencing. Her research has found that specific breast subtypes are more stem-like than others, and that several nuclear receptors are changed during transition of mammary epithelial stem-like cells toward differentiation. Her lab is also evaluating potential breast cancer/stem cell markers found in initial studies and investigating the role of miRNAs, small noncoding RNAs that mediate 20 percent or more of gene regulating events, in this process. Additional research includes the estrogen receptors' mechanisms and function in cancer and stem cells. Williams is interested in the functional genomics of the estrogen receptors, e.g. their complete transcriptomic effects, defining their directly regulated genes and mechanisms, effects of the different splice variants, and the varying functions in different estrogen related cancers and in stem cells. Williams' recent publications include "Gene expression in murine mammary epithelial stem cell-like cells shows similarities to human breast cancer gene expression" (Breast Cancer Research, 2009) and "Tumor Repressive Functions of Estrogen Receptor B in SW480 Colon Cancer Cells" (Cancer Research, 2009). Williams received her M.Sc. and Ph.D. from Royal Institute of Technology in Stockholm, Sweden.



Ping Wu, M.D., Ph.D., is the John S. Dunn Distinguished Chair in Neurological Recovery and an associate professor in the Department of Neurological Cell Biology at The University of Texas Medical Branch at Galveston. She is also affiliated with the George P. and Cynthia Woods Mitchell Center for Neurodegenerative Diseases, the Moody Center for Traumatic Brain and Spinal Cord Injury Research, and The Institute for Rehabilitation and Research (TIRR) Mission Connect. Because of her pioneer studies in human neural stem cell research, she is the inaugural recipient of the Eric Nader Award from the American Spinal Injury Association and was awarded the John S. Dunn Distinguished Chair in Neurological Recovery. Wu's study is currently focused on exploring the biology and therapeutic potential of human fetal neural stem cells for neurodegeneration and neurotrauma. Her research is supported by federal and private funding agencies, including the National Institutes of Health, Department of Defense,

Participant Biographies (continued)

John S. Dunn Research Foundation, Cullen Foundation, TIRR Foundation, Gillson Longenbaugh Foundation and Coalition for Brain Injury Research. Wu also served four years as an instructor at Harvard Medical School's Beth Israel Deaconess Medical Center. She received her medical degree at Beijing Medical University and before receiving a Ph.D. in neuroendocrinology at The University of Texas Medical Branch at Galveston in 1991. She completed her postdoctoral training at the University of Florida.

Thomas Zwaka, M.D., Ph.D., is an associate professor in the Department of Molecular and Cellular Biology of the Center for Cell and Gene Therapy at Baylor College of Medicine. His research focuses on understanding the foundations of mammalian cellular diversity. Comprehending how mammalian cells with apparently identical genetic backgrounds acquire their extraordinarily specific, stable and yet extremely diverse phenotypes poses one of the most daunting challenges of modern biomedical research. Until the molecular principles that govern branching and maintenance of the basic cellular lineages in the embryo and in the mature organism become clear, it will not be possible to fully address persistent questions in developmental biology, regenerative medicine, cancer biology and the pathophysiology of degenerative diseases. Embryonic stem (ES) and ES-like cells (induced pluripotent stem cells, iPS) afford ideal model systems for unraveling the complex molecular networks that give rise to cellular identity. Recent discoveries in Zwaka's laboratory suggest that the complement of factors needed to direct ES cell pluripotency is considerably larger than originally thought. They plan to generate a comprehensive list of pluripotency factors that would serve as a foundation for identifying alternative networks of key factors involved in the maintenance of pluripotency. Cellular reprogramming may not be limited to iPS cells but may also allow differentiation from one somatic cell type to another, assuming that the appropriate core set of regulation genes is found. In this way, Zwaka's laboratory hopes to make important new advances toward a greater understanding of pluripotency and its use in medical and nonmedical settings. Zwaka received his M.D. from Heinrich-Heine-University, Germany, his Ph.D. from the University of Ulm, and completed postdoctoral training at the University of Ulm and at the University of Wisconsin.