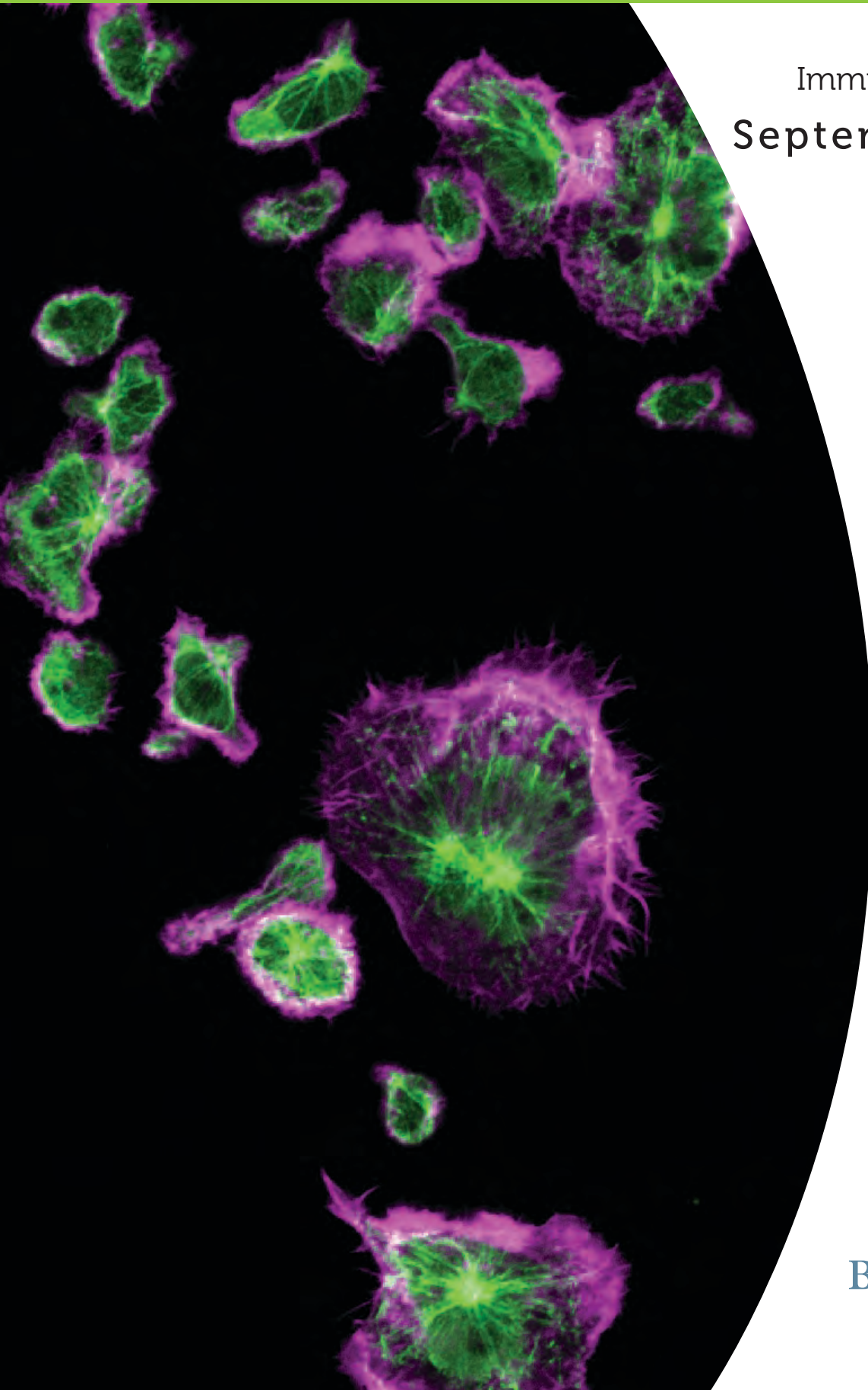
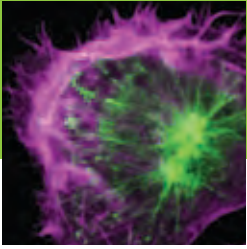


7th Annual CHIS

Center for Human
Immunology Symposium
September 26, 2013





BloodCenter and Blood Research Institute: Discoveries, Diagnosis and Treatment

A Brief History

BloodCenter of Wisconsin (BCW) is a private, not-for-profit organization that provides blood, blood products, and specialized transfusion medicine services to hospitals in Wisconsin. In partnering with Heartland Blood Centers, BCW also serves northern Illinois and parts of Indiana. A commitment to pursue research and advance the understanding of blood and blood transfusions was written into the articles of incorporation by visionary members of the board of directors when BCW was founded in 1947. The current mission statement calls for BCW to “advance patient care by providing life-saving solutions grounded in unparalleled medical and scientific expertise.”

The Junior League of Milwaukee founded the Junior League Blood Center in 1947 as a community blood bank with five paid staff and 70 regular volunteers. By 1952, the center was serving 30 regional hospitals. The name was changed to Milwaukee Blood Center in 1954 and an active research focus was initiated in the early 1950s. The first federal grant was received by the Milwaukee Blood Center in 1957. The name of the center was changed to the Blood Center of Southeastern Wisconsin in 1979 and again to BloodCenter of Wisconsin in 2005 to more accurately reflect the geographically growing area of its service. With the success of life-saving discoveries, increased research funding and committed scientific staff, BCW built the Blood Research Institute (BRI) on the grounds of the Milwaukee Regional Medical Center in 1991.

Over the years, the contributions of BloodCenter investigators have made a lasting impact on the fields of Transfusion Medicine, Immunology and Vascular Biology. We are proud of the fact that, despite the national lack of NIH funded physician-researchers, eight of our 21 investigators are physicians. Research at BCW extends from basic cellular, molecular and genetic studies, to participation in NIH clinical trial networks such as the Retroviral Epidemiology Donor Study (REDS) II, the Transfusion Medicine-Hemostasis (TMH) Clinical Trials Network and the Center for Human Immunology. Research activities are also strengthened by physical proximity of the BRI to the immediately adjacent Medical College of Wisconsin (MCW) and Children’s Hospital of Wisconsin (CHW). BRI investigators hold faculty appointments at MCW and participate actively in the teaching, mentoring and research activities.

Center for Human Immunology: Advancing, Accelerating and Promoting

The Center for Human Immunology (CHI) at the Blood Research Institute (BRI) was formed in 2006 under the leadership of Dr. Jack Gorski, Senior Investigator at BRI. Its mission is to improve human health by advancing the basic understanding of the human immune system by accelerating the transition of discoveries from murine studies to clinical practice and by promoting interactions between regional immunologists and leading experts.

The formation of the CHI also embodies the goal of BloodCenter of Wisconsin to leverage its important resource of blood donor/volunteers to help advance human immunology. With the increasing emphasis by the National Institute of Health on translation of basic mouse immunology into human health-related areas, the CHI plays a prominent role in supporting the regional immunologists at the BRI, Medical College of Wisconsin and Children's Hospital of Wisconsin.

To promote the interaction between regional immunologists and the leading experts, the CHI has been sponsoring an Annual Symposium on Human Immunology. The first of these was held in 2007. The topics of the symposia are either directly related to analysis of the human immune system or cover important areas of study with direct ramifications for human health and disease.

This year's CHI Symposium is organized with the generous financial support from the BloodCenter Research Foundation, the Cancer Center, MCW, the Joan and Fred Brengel Family Foundation and other sponsors.



Dr. Jack Gorski, Senior Investigator at BRI and founder of the Center for Human Immunology.

A Success in the Making: Topics and Speakers of our Past Symposia

2007 – Human Immunology

Bill Kwok, PhD, Benaroya Research Institute at Virginia Mason
Martin Hessner, PhD, Medical College of Wisconsin
Karolina Palucka, MD, PhD, Baylor University
Jorg Goronzy, MD, PhD, Emory University School of Medicine
Elena Naumova, PhD, Tufts University School of Medicine
David D. Eckels, PhD, University of Utah School of Medicine

2008 – Integrating Hemostasis and Immunity

Charles Esmon, PhD, University of Oklahoma Health Sciences Center
May Han, MD, Stanford University
Jay L. Degen, PhD, University of Cincinnati College of Medicine
Hartmut Weiler, PhD, Blood Research Institute

2009 – Immune Memory

Rafi Ahmed, PhD, Emory University
Ignacio Sanz, MD, University of Rochester
Jack Gorski, PhD, Blood Research Institute
Anne West, MD, PhD, Duke University Medical Center

2010 – Systems and Computational Immunology

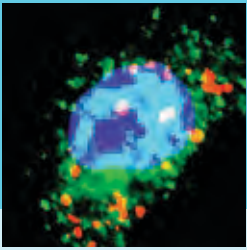
Tim R. Mosmann, PhD, University of Rochester
Greg E. Lemke, PhD, Salk Institute
Steven H. Kleinstein, PhD, Yale University School of Medicine
Elena Naumova, PhD, Tufts University School of Medicine

2011 – Innate Immunity

David Raulet, PhD, University of California-Berkeley
Alejandro Aballay, PhD, Duke University
Thirumala-Devi Kanneganti, PhD, St. Jude Children's Research Hospital
Subramaniam Malarkannan, PhD, Blood Research Institute
Dan Wu, PhD, Yale University, School of Medicine
Wendy Havran, PhD, The Scripps Research Institute

2012 – Interactions Between the Immune and Nervous Systems

Keith Kelley, PhD, University of Illinois
Alan Lomax, PhD, Queen's University
Katherine Held, PhD, Allergan
Bonnie Dittel, PhD, Blood Research Institute
Jeannette Marketon, PhD, The Wexner Medical Center
Cecelia Hillard, PhD, Medical College of Wisconsin



Center for Human Immunology Annual Symposium

Schedule

7:00 – 8:00 am	Registration
8:00 – 8:10 am	Handover – Jack Gorski PhD, Senior Investigator, BRI Subra Malarkannan, PhD, CHIS Chair, Investigator, BRI
8:10 – 8:20 am	Opening Remarks – Jackie Fredrick President and CEO , BloodCenter of Wisconsin
8:20 – 8:30	Welcome Address – Gilbert White II, MD Director and Executive Vice President, BRI
8:30 – 9:30 am	<i>Speaker Introduction by Ming You MD, Director, Cancer Center, MCW</i> Stanley Riddell, MD Professor, Fred Hutchinson Cancer Research Center University of Washington School of Medicine Title: ‘Engineering defined T cell cancer therapeutics with gene transfer’
9:30 – 10:00 am	Coffee Break – Visit our Sponsors
10:00 – 11:00 am	<i>Speaker Introduction by Marcio Malogolowkin MD, Professor of Pediatrics, Chief, Div Ped HemOnc, MCW</i> Crystal MacKall, MD Head, Immunology Section, Pediatric Oncology Branch National Cancer Institute Title: ‘Chimeric Antigen Receptor Based Adoptive T Cell Therapy for Cancer: Progress and Challenges’
11:00 am – 12:00 pm	<i>Speaker Introduction by Alex Abel, Graduate student, IDP, MCW</i> Pramod Srivastava, MD, PhD Director, Neag Comprehensive Cancer Center University of Connecticut Title: ‘Search for truly tumor-specific antigens’

Cellular Immunotherapy and Hematopoietic Stem Cells

12:00 – 1:25 pm Lunch – “Lunch and Learn” vendor presentations by Sponsors

1:25 – 1:30 pm Reassemble – Behind the Scenes – to Photo Finish

1:30 – 2:30 pm *Speaker Introduction by Demin Wang PhD, Senior Investigator, BRI*

Linheng Li, PhD

Professor, Stowers Institute

University of Kansas School of Medicine

Title: ‘Niche, Signaling, epigenetic regulation of stem cells’

2:30 – 3:00 pm Break – Visit our Sponsors

3:00 – 4:00 pm *Speaker Introduction by Sridhar Rao, MD, PhD, Associate Investigator, BRI*

Stuart Orkin, MD

Chair, Pediatric Oncology

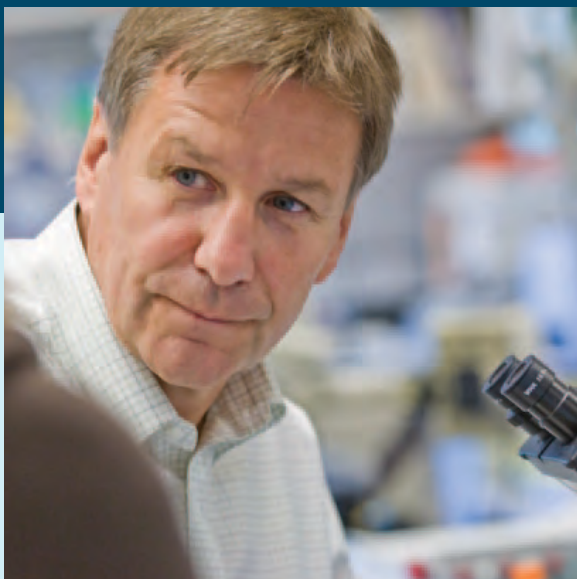
Dana-Farber Cancer Institute

Harvard Medical School

Title: ‘Making sense of heterogeneity in the hematopoietic system’

4:00 – 4:15 pm Wrap Up – Subra Malarkannan, PhD

4:15 – 7:30 pm Reception and social



Stanley Riddell, MD

Director, Translational Immunotherapy Program,
Fred Hutchinson Cancer Research Institute
Professor, Department of Medicine, University of
Washington, Seattle, Washington

Stanley Riddell, MD, a 'Stand Up 2 Cancer' Award recipient and a pioneer in formulating novel cellular therapy at Fred Hutchinson Cancer Research Institute, is at the forefront of clinical immunology research. Dr. Riddell is interested in the biology of graft-versus-leukemia responses and graft-versus-host disease, immunobiology of breast cancer, and CD8+ T cell responses to CMV in immunocompetent and immunodeficient individuals. Dr. Riddell received his MD from the University of Manitoba. He completed his fellowship in the Division of Oncology, University of Washington and Fred Hutchinson Cancer Research Center, Seattle, Washington.

Dr. Riddell is currently the Director of Translational Immunotherapy and the Chair of the Immunotherapy Steering Committee at the Fred Hutchinson Cancer Research Center and Professor of Medicine in the Department of Medicine, University of Washington. He is also the Hans Fischer Senior Fellow at the Institute for Advanced Study, Technical University of Munich and a Research Affiliate Scientist at the Washington National Primate Research Center. Dr. Riddell and his team have published well over 180 scientific papers that include peer-reviewed original articles and expert opinions in the field of T cell immunology and cellular immunotherapy. Dr. Riddell has received numerous awards and recognition including Fellow of the American College of Physicians (2008), E. Donnell Thomas Lecture and Prize, American Society of Blood and Marrow Transplantation (2010), International Society for Biological Therapy Team Science Award (2010), Association of American Physicians (2010), and Lyonel Israels Memorial Lecture, Manitoba Institute of Cell Biology (2011).

Dr. Riddell's laboratory has focused on the development and clinical evaluation of cellular therapeutics with antigen-specific T cell lymphocytes for human viral infections and malignancy. His research effort in this area encompasses the identification of appropriate target antigens on infected and malignant cells, and the development of methods for selecting, engineering, and expanding therapeutic T cells of the correct specificity. Dr. Riddell's recent studies have been directed at understanding the genetic programming of distinct memory T cell subsets that enable some cells to survive long-term in vivo to reestablish immunologic memory after adoptive transfer.

Crystal Mackall, MD



Chief, Pediatric Oncology Branch, National
Institute of Cancer, National Institute of Health,
Bethesda, Maryland

Crystal Mackall, MD, a recipient of 'Stand Up2 Cancer' Award and Directors' awards from both the National Cancer Institute and National Institute of Health, is a leading physician scientist focused on the biology and therapy of lymphopenia, immunobiology and immunotherapy of pediatric cancer and clinical immunotherapy program in childhood cancer using Chimeric Antigen Receptors (CARs). Dr. Mackall received her BS with *summa cum laude* from the University of Akron in Ohio and her MD from Northeastern Ohio University College of Medicine in Rootstown. Dr. Mackall received her clinical training in pediatrics and internal medicine, and research training in pediatric Hematology/Oncology at the National Cancer Institute.

Dr. Mackall is Chief of the Pediatric Oncology Branch of the National Cancer Institute and tenured Principal Investigator and of the Immunology Section, Pediatric Oncology Branch, NCI, NIH. Dr. Mackall has authored over 150 scientific publications including original peer-reviewed articles and expert reviews. She joined the Experimental Immunology Branch as an Investigator in 1992 and rose through the ranks to become the Chief of the Pediatric Oncology Branch, NCI, NIH in 2008. Dr. Mackall is a member of the American Society of Clinical Investigation (2005) and has been recognized with numerous awards including the NIH Distinguished Clinical Teacher Award (2000), an NCI Mentor of Merit Award (2003), the NCI Director's Award (2003), NIH Merit Award NCI (2007), NCI Director's Award (2010), How! How! Award from Special Love, Inc. (2012), Great Teacher Lecture Award from NIH (2012) and NIH Director's Award (2013).

Dr. Mackall leads a cutting edge clinical immunotherapy program that seeks to bring recent progress in tumor immunotherapy to the problem of childhood cancer. Her team has received international recognition for her work on T cell homeostasis related to tumor immunology and for their active translational research program which incorporates basic studies of immunology with clinical trials of immunotherapy for pediatric cancer. Mackall is credited with discovering an essential role for interleukin-7 in T cell homeostasis and has led the clinical development of recombinant human interleukin-7, a novel immunorestorative agent. Dr. Mackall's recent pioneering work in Chimeric Antigen Receptors (CARs) has opened new avenues of cellular immunotherapy for a variety of malignancies. Her program conducts translational studies of tumor vaccines, immunomodulators, experimental bone marrow transplantation and cell-based therapy for childhood cancer.



Pramod Srivastava, MD, PhD

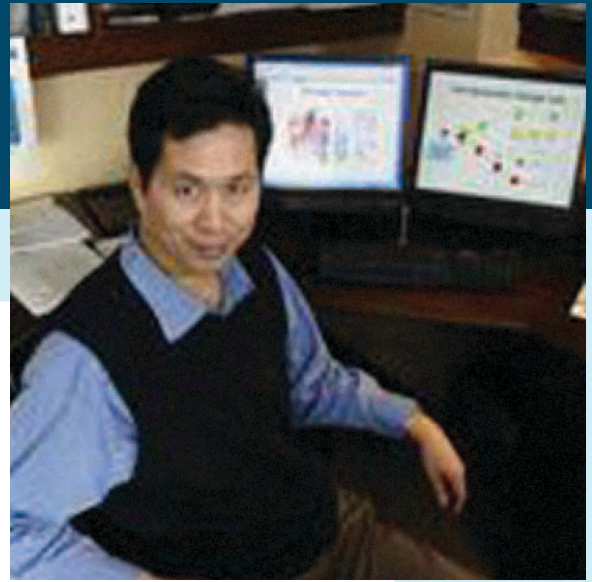
Professor of Immunology and Medicine,
Northeast Utilities Chair in Experimental Oncology
Director, Center for Immunotherapy of Cancer and
Infectious Diseases

Director, Carole and Ray Neag Comprehensive
Cancer Center

Dr. Pramod K. Srivastava, an accomplished leader in basic and translational research, is the director of the Carole and Ray Neag Comprehensive Cancer Center and studies the relationship between heat shock proteins-associated peptide antigens and T cell-mediated anti-tumor responses. Dr. Srivastava received his BS and MS from the University of Allahabad, Allahabad, India. He obtained additional training in microbial genetics at the University of Osaka and his PhD from the Centre for Cellular and Molecular Biology, Hyderabad, India. He completed his postdoctoral training at Yale University, New Haven and Memorial Sloan-Kettering Cancer Center in New York. Dr. Srivastava relived his student life by joining and finishing his MD between 2004-2008 at the University of Connecticut Medical School, Farmington.

Dr. Srivastava is currently Director of the Carole and Ray Neag Comprehensive Cancer Center, Director of the Center for Immunotherapy of Cancer and Infectious Diseases, Director of the University of Connecticut Cancer Center, Professor and Interim Chairman of the Department of Immunology, and part of the leadership team of the Connecticut Institute for Clinical and Translational Science (CICATS). He holds the Northeast Utilities Chair in Experimental Oncology. Dr. Srivastava and his team have published well over 150 scientific papers that include peer-reviewed original articles, expert opinions and book chapters. Dr. Srivastava has received multiple honors and awards including Board Member of the Advisory Committee for the Cell Stress Society, Chairman of the Board of Directors for Antigenics Inc, Member of the Scientific Advisory Committee for the Cancer Research Institute, Editor of the journal Cancer Immunity, Founding Member of the Academy of Cancer Immunology, and as the Chair of Gordon Research Conference on Cross-Priming.

Dr. Srivastava has earned international acclaim for his groundbreaking work in the immunological function of Heat Shock Proteins (HSPs) in cancer cells, is widely published in scholarly journals and serves on editorial boards for several major journals in immunology. His laboratory's research interests lie in four areas: antigen presentation by MHC I and MHC II molecules, immune response to cancer, viral immunity, and autoimmunity. Dr. Srivastava's pioneering work proved that HSPs isolated from cells are always associated with a broad array of antigenic peptides. Thus, HSPs have remarkable immunomodulatory properties which derive from their interaction with macrophage and dendritic cells through a receptor, CD91. Dr. Srivastava's laboratory has used these observations to explore new key aspects of antigen presentation and to develop innovative approaches for therapy of cancer, infections and autoimmune disorders.

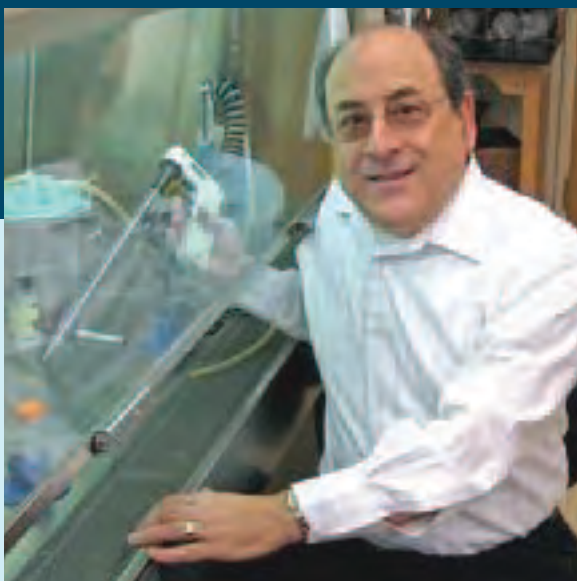


Investigator, Stowers Institute for Medical Research
Professor, Department of Pathology & Laboratory
Medicine, The University of Kansas Medical Center
Co-leader, Cancer Biology, University of Kansas Cancer
Center (NCI-CC)

Dr. Linheng Li, winner of the Hudson Prize for excellence in Biomedical research is an Investigator at Stowers Institute for Medical Research and focuses on stem cell development in hematopoietic and intestinal systems. In particular, his laboratory is interested in the intrinsic genetic pathways and the extrinsic signals from the microenvironment (or niche) that regulate the self-renewal of stem cells. Dr. Li obtained his BS and MS from the Fudan University and another MS and PhD from the New York University. He was trained in the laboratory of Dr. Lee Hood at the University of Washington, Seattle as a postdoctoral fellow.

Dr. Li is an affiliate Professor in the Department of Pathology and a Co-leader in Cancer Biology, University of Kansas Medical Center. His team has published over 80 scientific papers that include peer-reviewed original articles and expert opinions in the field of stem cell biology. He has been elected to multiple scientific societies including, Fellow of the American Association for the Advancement of Science (2011) and American Gastroenterological Association (2013). He was awarded the Missouri Biotechnology Association Excellence in Life Sciences in Basic Research in 2003. Dr. Li is also an active member of the American Association for Cancer Research, American Society for Cell Biology, American Society for Developmental Biology, American Society for Hematology, International Society for Stem Cell Research, and International Society for Hematology and Stem Cells.

Using hematopoiesis as a model system, Dr. Li's studies focus on the precise balance among different events that govern the development and maintenance of stem cells including self-renewal, differentiation, apoptosis (cell death), and migration. Loss of this balance leads to uncontrolled cell growth or cell death, contributing to various diseases such as cancer or tissue defects. Stem cells are the key subset of cells in the body that function as ancestor cells producing various types of functionally specialized mature (differentiated) cells in a given tissue, while simultaneously maintaining the capacity to continuously divide and self-renewal. This self-renewal process is controlled by intrinsic genetic pathways subject to regulation by extrinsic signals from the microenvironment (or niche) in which stem cells reside. Stem cells play essential roles ranging from embryonic development and organogenesis (fetal stem cells and embryonic stem cells) to tissue homeostasis and regeneration (adult stem cells). Dr. Li's current and past work analyzed the molecular basis of the multipotentiality of stem cells, identification of the hematopoietic stem cell (HSC) niche, the role of BMP and Wnt signaling as yin-yang controls of intestinal stem cell (ISC) properties, differences between normal stem cells and cancer stem cells, and co-existence of two subpopulations of reserved and primed hematopoietic stem cells (HSCs).



Stuart Orkin, MD

Chairman, Department of Pediatric Oncology,
David G. Nathan Professor of Pediatrics, Dana-Farber
Cancer Institute, Harvard Medical School, Boston

Stuart Orkin, MD, a Howard Hughes Medical Institute investigator at Children's Hospital Boston and Dana-Farber Cancer Institute, focuses on stem cell biology, hematopoietic cell development, leukemia and multiple aspects of cancer biology. Dr. Orkin received his BS from Massachusetts Institute of Technology and his MD from Harvard Medical School. He completed his internship and postdoctoral training at the National Institutes of Health and clinical training in pediatrics and hematology/oncology at Children's Hospital Boston and Dana-Farber Cancer Institute.

Dr. Orkin is the Chairman of the Department of Pediatric Oncology at the Dana-Farber Cancer Institute, Principal Faculty Member at Harvard Stem Cell Institute, and Associate Chief at the Division of Hematology/Oncology at Children's Hospital of Boston. Dr. Orkin has published well over 500 scientific papers that include peer-reviewed original articles, expert opinions and book chapters. Dr. Orkin joined Harvard Medical School as an Assistant Professor in 1978 and became the Leland Fikes Professor in 1986. In 2000, he became the David G. Nathan Professor (2000-present) and Chairman of the Department of Pediatric Oncology, Dana-Farber Cancer Institute. Dr. Orkin is the recipient of a number of national and international awards and recognitions including being an elected Member in the Institute of Medicine, American Academy of Arts and Sciences, and National Academy of Sciences; the Warren Alpert Foundation Prize, and the Dameshek Award from the American Society of Hematology (ASH); Distinguished Research Award of AAMC; Mead-Johnson Award; Helmut Horten Research Award; E. Donnell Thomas Prize of ASH; Basic Science Mentor Award; Distinguished Research Award of the AAMC; Chair of the Grants Review Panel of the State of California Stem Cell Institute; and Donald Metcalf Award of the International Society of Experimental Hematology.

Dr. Orkin's laboratory is currently interested in the molecular mechanisms of hematopoietic cell development, and blood cell tumor transformation. In the past three and a half decades, a number of molecular regulators involved in these processes were discovered and characterized by Dr. Orkin's laboratory.

7th ACHIS Organizing Committee

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Cancer Center, MCW (through a Large Pilot Grant)
Joan and Fred Brengel Family Foundation
BloodCenter Research Foundation

