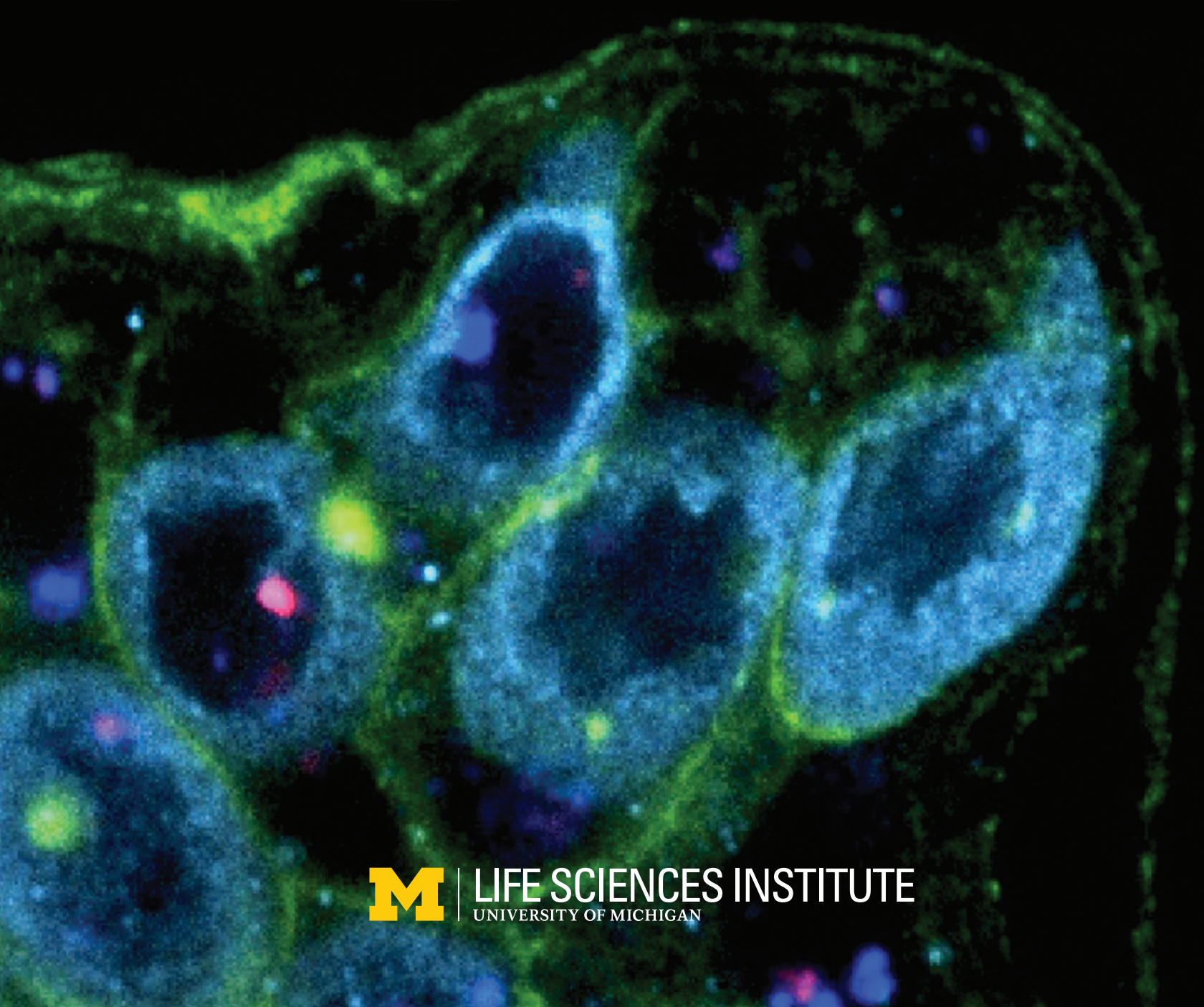


LIFE SCIENCES INSTITUTE | THIRTEENTH ANNUAL SYMPOSIUM

# Victors for Discovery: BIOMEDICINE AT MICHIGAN

May 14–15, 2014 | Palmer Commons



**M** | LIFE SCIENCES INSTITUTE  
UNIVERSITY OF MICHIGAN

# WEDNESDAY, MAY 14, 2014

**8:30 am | Welcome | Forum Hall (overflow seating available in Great Lakes Room)**

**Alan Saltiel, PhD** | Mary Sue Coleman Director of the Life Sciences Institute, University of Michigan

**8:35 am | Introduction of the Mary Sue and Kenneth Coleman Life Sciences Lecturer | Forum Hall**

**Mary Sue Coleman, PhD** | President, University of Michigan

**8:45 am | Mary Sue and Kenneth Coleman Life Sciences Lecture: A New Family of Kinases Important in Bone and Teeth Formation | Forum Hall**

**Jack Dixon, PhD** | Professor, Pharmacology, Cellular and Molecular Medicine, Chemistry and Biochemistry, University of California, San Diego

**9:45 am | Morning Break**

**Session 1 | Forum Hall**

Moderated by **Michael S. Parmacek, MD** | Chair, Department of Medicine; Director, Penn Cardiovascular Institute; Herbert C. Rorer Professor of Medical Sciences, University of Pennsylvania

**10:05 am | The Hippo-YAP Pathway in Organ Size Control and Tumorigenesis**

**Kun-Liang Guan, PhD** | Professor, Pharmacology, University of California, San Diego

**10:40 am | How Does Protein Misfolding in the Endoplasmic Reticulum Cause Cell Death?**

**Randal J. Kaufman, PhD** | Director, Degenerative Diseases Program; Sanford-Burnham Medical Research Institute

**11:15 am | Nitric Oxide in Biology and Medicine**

**Michael A. Marletta, PhD** | President and Chief Executive Officer, Cecil H. and Ida M. Green Chair in Chemistry, Professor, Department of Chemistry, Scripps Research Institute

**12:00 pm | Break for Lunch (LSI Grads/Speaker lunch by invitation only)**

**Session 2 | Forum Hall**

Moderated by: **Beverly S. Mitchell, MD** | George E. Becker Professor of Medicine; Director, Stanford Cancer Institute

**1:15 pm | Down Syndrome and Cancer: The Ying and Yang of Stem Cells**

**Michael F. Clarke, MD** | Karel H. and Avice N. Beekhuis Professorship in Cancer Biology, Associate Director, Stanford Institute for Stem Cell Biology and Regenerative Medicine, Professor of Medicine (Oncology), Stanford University

**1:50 pm | Ubiquitin Modification in Cancer Pathogenesis**

**Vishva Dixit, MD** | Vice President, Physiological Chemistry, Genentech, Inc.

**2:30 pm | The Regulation of Stem Cell Self-Renewal**

**Sean J. Morrison, PhD** | Director, Children's Research Institute; Mary McDermott Cook Chair in Pediatric Genetics; Investigator, Howard Hughes Medical Institute; University of Texas Southwestern Medical Center

**3:10 pm | Inherited Susceptibility in Patients and Populations: Genetics is Not Destiny**

**Stephen B. Gruber, MD, PhD, MPH** | Director, USC Norris Comprehensive Cancer Center; Professor, Medicine and H. Leslie Hoffman and Elaine S. Hoffman Chair, Cancer Research, University of Southern California

**3:50 pm | Afternoon Break (Transition to Great Lakes Room)**

**Panel Discussion 1: The Future of Biomedical Research | Great Lakes Room**

Moderated by: **David Ginsburg, MD** | James V. Neel Distinguished University Professor of Internal Medicine and Human Genetics, and Pediatrics and Communicable Diseases; Investigator, Howard Hughes Medical Institute; Research Professor, Life Sciences Institute, University of Michigan Medical School

**4:10 pm | Introductory Talk: The Past is Prologue: You Ain't Seen Nothin' Yet**

**Francis S. Collins, MD, PhD** | Director, National Institutes of Health

**Panelists:**

**Jack Dixon, PhD** | Professor, Pharmacology, Cellular and Molecular Medicine, Chemistry and Biochemistry, University of California, San Diego

**William N. Kelley, MD** | Professor, Medicine, University of Pennsylvania

**Michael A. Marletta, PhD** | President and Chief Executive Officer, Cecil H. and Ida M. Green Chair in Chemistry, Professor, Department of Chemistry, Scripps Research Institute

**Elizabeth G. Nabel, MD** | President, Brigham and Women's Hospital; Professor of Medicine, Harvard Medical School

**5:55 pm | Closing Remarks**

**Alan Saltiel, PhD** | Mary Sue Coleman Director of the Life Sciences Institute, University of Michigan

**6:00-6:45 pm | Public Reception | LSI Lobby**

# THURSDAY, MAY 15, 2014

## 8:30 am | Welcome | Great Lakes Room

**David Ginsburg, MD** | James V. Neel Distinguished University Professor of Internal Medicine and Human Genetics, and Pediatrics and Communicable Diseases; Investigator, Howard Hughes Medical Institute; Research Professor, Life Sciences Institute, University of Michigan Medical School

## Session 3 | Great Lakes Room

Moderated by: **Stephen G. Emerson, MD, PhD** | Clyde Wu Professor of Immunology and Medicine; Professor, Microbiology and Immunology; Director, Herbert Irving Comprehensive Cancer Center, Columbia University Medical Center

## 8:40 am | Pathways for Immune Tolerance in Transplantation

**Laurence A. Turka, MD** | Harold and Ellen Danser Professor of Surgery, Harvard Medical School; Co-Director, Transplantation Biology Research Center, Massachusetts General Hospital; Deputy Director, Immune Tolerance Network

## 9:15 am | Is Gene Therapy Ready for Prime Time?

**James M. Wilson, MD, PhD** | Director, Gene Therapy Program; Research Director, Center for Orphan Disease Research and Therapy; Professor, Department of Pathology & Laboratory Medicine, Perelman School of Medicine, University of Pennsylvania

## 9:55 am | The Epigenetic Basis of Human Cancer

**Andrew P. Feinberg, MD, MPH** | Gilman Scholar, King Fahd Professor of Medicine, Oncology, Molecular Biology/Genetics, and Biostatistics; Director, Center for Epigenetics, Johns Hopkins University School of Medicine

## 10:35 am | Morning Break

**Panel 2: Drug Discovery and Development in the 21st Century | Great Lakes Room**

Moderated by: **Alan Saltiel, PhD** | Mary Sue Coleman Director of the Life Sciences Institute, University of Michigan

**11:00 am | Introductory Talk: Making New Medicines: New Approaches to an Old Challenge**

**Tachi Yamada, MD** | Chief Medical & Scientific Officer, Executive Vice President & Board Member, Takeda Pharmaceuticals

**Panelists:**

**Vishva Dixit, MD** | Vice President, Physiological Chemistry, Genentech, Inc.

**John B. Lowe, MD** | Senior Director, Research Pathology Department, Genentech, Inc.

**Gary J. Nabel, MD, PhD** | Chief Scientific Officer and Senior Vice President, Sanofi

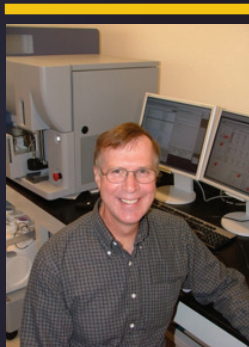
**Craig B. Thompson, MD** | President and Chief Executive Officer, Memorial Sloan Kettering Cancer Center

**Barbara Weber, MD** | Senior Vice President and Global Head, Oncology Translational Medicine, Novartis Oncology

**12:45 pm | Closing Remarks | Great Lakes Room**

**David Ginsburg, MD** | James V. Neel Distinguished University Professor of Internal Medicine and Human Genetics, and Pediatrics and Communicable Diseases; Investigator, Howard Hughes Medical Institute; Research Professor, Life Sciences Institute, University of Michigan Medical School

# SPEAKER BIOGRAPHIES



**Michael F. Clarke, MD** | Karel H. and Avice N. Beekhuis Professorship in Cancer Biology; Associate Director, Stanford Institute for Stem Cell Biology and Regenerative Medicine; Professor of Medicine (Oncology), Stanford University

Former U-M Affiliation: Professor, Department of Internal Medicine and Cellular and Developmental Biology

In addition to his clinical duties in the division of oncology at Stanford University, Michael F. Clarke maintains a laboratory focused on two areas of research: i) the control of self-renewal of normal stem cells and diseases such as cancer and hereditary diseases; and ii) the identification and characterization of cancer stem cells. In particular, his laboratory investigates how perturbations in the self-renewal machinery contribute to human disease. His laboratory has discovered that the proto-oncogene Bmi-1 regulates stem cell self-renewal via an epigenetic mechanism. Recently his laboratory has found that USP16, a protein that dampens Bmi1 signals, causes a stem cell defect in Down syndrome. His focus is to aid in the development of more effective treatment therapies for various forms of cancer.



**Francis S. Collins, MD, PhD** | Director, National Institutes of Health

Former U-M Affiliation: Professor of Internal Medicine; Investigator, Howard Hughes Medical Institute

As the Director of the National Institutes of Health, Francis Collins oversees the work of the largest supporter of biomedical research in the world, spanning the spectrum from basic to clinical research. Dr. Collins is a physician-geneticist noted for his landmark discoveries of disease genes and his leadership of the international Human Genome Project, which culminated in April 2003 with the completion of a finished sequence of the human DNA instruction book. He served as director of the National Human Genome Research Institute at the NIH from 1993-2008. Previously, Dr. Collins was a Howard Hughes Medical Institute Investigator at U-M. He is a member of the Institute of Medicine and the National Academy of Sciences, was awarded the Presidential Medal of Freedom in November 2007, and received the National Medal of Science in 2009.



**Vishva Dixit, MD** | Vice President, Physiological Chemistry, Genentech, Inc.

Former U-M Affiliation: Professor of Pathology

Vishva Dixit's early work on apoptosis is prominent in introductory textbooks of biology and medicine and his work has provided a stepping stone for many other researchers. The Dixit laboratory was one of the first to show that caspases are components of the death receptor-induced apoptotic pathway, to demonstrate that death receptors signal by an entirely novel mechanism of recruiting and activating a death protease (FLICE/caspase-8) by an induced proximity mechanism, and to identify the mammalian death protease is equivalent to the CED3 protein in worms (YAMA/caspase-3) as well as other pro-apoptotic caspases including caspase-6, -7 and -9. They also discovered the non-canonical inflammasome pathway, showed that the death domain-containing molecule MyD88 is a key signaling adaptor, and discovered paracaspases and metacaspases: two ancient families of caspase-related proteins, one of which plays a key role in MALT lymphoma.

**Jack Dixon, PhD | Professor, Pharmacology, Cellular and Molecular Medicine, Chemistry and Biochemistry, University of California, San Diego**

Former U-M Affiliation: Minor J. Coon Professor of Biological Chemistry; Chair, Department of Biological Chemistry; Co-Director, Life Sciences Institute

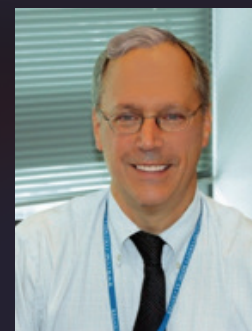
Jack E. Dixon has a PhD from the University of California Santa Barbara and did postdoctoral research at the University of California San Diego. In 1973, he joined the faculty at Purdue University and subsequently became the Wiley Distinguished Professor of Biochemistry. In 1991, Dixon moved to U-M, where he was the Minor J. Coon Professor of Biological Chemistry and the Chair of the Department of Biological Chemistry. In 2003, he returned to the UCSD School of Medicine as Professor and Dean of Scientific Affairs. In 2007, Dixon was appointed Vice President and Chief Scientific Officer of the Howard Hughes Medical Institute, a position he held until June of 2013. He is now Distinguished Professor in Pharmacology, Cellular and Molecular Medicine, Chemistry and Biochemistry and Associate Vice Chancellor for Scientific Affairs in the UCSD Office of the Vice Chancellor for Health Sciences.



**Stephen G. Emerson, MD, PhD | Clyde Wu Professor of Immunology and Medicine; Professor, Microbiology and Immunology; Director, Herbert Irving Comprehensive Cancer Center, Columbia University Medical Center**

Former U-M Affiliation: Associate Professor of Internal Medicine and Pediatrics

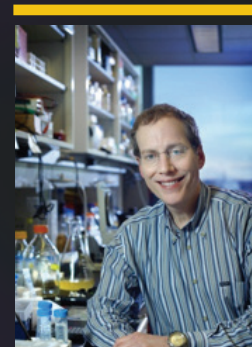
Stephen G. Emerson has a MS in molecular biophysics, a PhD in cell biology and immunology and an MD from Yale University. He investigates bone marrow stem cell biology, focusing on bone marrow stem cell transplantation for medical therapies. He has received the Stohlman Award of the Leukemia and Lymphoma Society, the Medical Scientist Trainee Prize of Yale University, the Wilbur Cross Medal from Yale University, the Bai-Yu Lan Prize of the City of Shanghai and the Rolex Career Achievement Award. He is also a Knight of the French Legion of Honor. He serves as Scientific Program Director for the American Society of Hematology and the American Society for Blood and Marrow Transplantation meetings, is Senior Editor of the Journal of Clinical Investigation, and contributes to the Journal of Experimental Medicine and Blood Editorial Board.



**Andrew P. Feinberg, MD, MPH | Gilman Scholar, King Fahd Professor of Medicine, Oncology, Molecular Biology/Genetics, and Biostatistics; Director, Center for Epigenetics, Johns Hopkins University School of Medicine**

Former U-M Affiliation: Associate Professor of Internal Medicine and Human Genetics; Investigator, Howard Hughes Medical Institute

Andrew Feinberg has BA, MD and MPH degrees from Johns Hopkins University and did postdoctoral fellowships with Samuel Barondes at UCSD and with Bert Vogelstein at Johns Hopkins. Dr. Feinberg made the first discoveries of altered DNA methylation in human cancer, discovered human imprinted genes and loss of imprinting (LOI) in cancer, and proved the epigenetic hypothesis of cancer through his work on Beckwith-Wiedemann syndrome. He is interested in the epigenetic basis of disease, showing how genetic variation and environmental and stochastic change are integrated to cause cancer and autoimmune disease. Honors include the Institute of Medicine, American Academy of Arts and Sciences, ISI most cited authors list, honorary Doctorates from Uppsala University and Karolinska Institute, the Feodor Lynen Medal, the Spinoza Chair and the NIH Director's Pioneer Award.





**Stephen B. Gruber, MD, PhD, MPH** | Director, USC Norris Comprehensive Cancer Center; Professor, Medicine and H. Leslie Hoffman and Elaine S. Hoffman Chair, Cancer Research, University of Southern California

Former U-M Affiliation: Professor of Internal Medicine, Epidemiology and Human Genetics

Dr. Stephen Gruber is a board-certified medical oncologist and cancer geneticist who serves as Director of the USC Norris Comprehensive Cancer Center in Los Angeles. An internationally recognized expert in hereditary cancer syndromes, Dr. Gruber concentrates on genetic susceptibility to cancer and strategies to reduce the burden of cancer in families with cancer and in at-risk populations.



**Kun-Liang Guan, PhD** | Professor, Pharmacology, University of California, San Diego

Former U-M Affiliation: Halvor Christensen Professor of Biological Chemistry; Faculty Member, Life Sciences Institute

Kun-Liang Guan is a distinguished professor of pharmacology at the University of California, San Diego. He received his BS degree from Hangzhou University in China and PhD from Purdue University. Guan studies cell growth signaling mechanisms, organ size control, and tumorigenesis, particularly focusing on the mTOR and Hippo pathways. He has been named a MacArthur Fellow, received the Scherling-Plough Award from the American Society of Biochemistry and Molecular Biology and Distinguished Alumni Award from Purdue University and is an American Association for the Advancement of Science fellow.



**Randal J. Kaufman, PhD** | Director, Degenerative Diseases Program, Sanford-Burnham Medical Research Institute

Former U-M Affiliation: Professor of Biological Chemistry and Internal Medicine; Investigator, Howard Hughes Medical Institute

Randal J. Kaufman has a PhD in pharmacology from Stanford University. As a Helen Hay Whitney fellow, Kaufman worked with Nobel Laureate Phillip Sharp at the MIT Center for Cancer Research to develop gene transfer technologies based on gene amplification and expression in mammalian cells. He then became a founding scientist at Genetics Institute Inc., engineering mammalian cells for high-level expression of therapeutic proteins, such as clotting factors now used to treat individuals with hemophilia. In 2011, Kaufman became the Professor and Director of the Degenerative Disease Research Program at the Sanford-Burnham Medical Research Institute. His research focuses on three signaling pathways that emanate from the ER that orchestrate survival and death responses, more recently discovering that ER protein misfolding leads to oxidative stress, calcium mobilization, and inflammatory responses.



**William N. Kelley, MD** | Professor, Medicine, Perelman School of Medicine, University of Pennsylvania

Former U-M Affiliation: John G. Searle Professor of Internal Medicine, Professor of Biological Chemistry, Chair, Department of Internal Medicine

William N. Kelley received his undergraduate and graduate training at Emory University, followed by postgraduate training at the Massachusetts General Hospital, Parkland Memorial Hospital, and the National Institutes of Health. His professional career has included appointments as Chief of the Division of Rheumatic and Genetic Diseases at Duke University, Chairman of the Department of Internal Medicine at the University of Michigan, and Dean of the Medical School and CEO of the Health System at the University of Pennsylvania. Dr. Kelley has served in leadership roles in several academic societies, as an advisor to governments at the highest levels including the U.S., United Kingdom and Singapore, and he has received multiple prestigious awards. He has also served as a director on six corporate boards and as a trustee of Emory University.



**John B. Lowe, MD | Senior Director, Research Pathology Department, Genentech, Inc.**

Former U-M Affiliation: Professor of Pathology; Investigator, Howard Hughes Medical Institute; Life Sciences Institute Founding Member

John Lowe came to the University of Michigan in 1986 as an Assistant Professor of Pathology and an Investigator with the Howard Hughes Medical Institute. He was a founding member of the Life Sciences Institute, moving his laboratory to the institute in 2002. In 2005, Lowe became Chair of Pathology at Case Western Reserve University School of Medicine and the affiliated University Hospitals of Cleveland. In 2008, Lowe became Senior Director (Chair) of the Research Pathology Department at Genentech in San Francisco. His research has focused on understanding the functions of mammalian glycan molecules, using genetic and biochemical approaches. These efforts have advanced an understanding of the genetic basis for variation in human red blood cell transfusion antigens, and of the molecules and mechanisms that enable recruitment of white blood cells to tissues during immune responses.



**Michael A. Marletta, PhD | President and Chief Executive Officer, Cecil H. and Ida M. Green Chair in Chemistry, Professor, Department of Chemistry, Scripps Research Institute**

Former U-M Affiliation: Professor of Medicinal Chemistry and Pharmacology

Marletta has an AB degree from SUNY College at Fredonia and a PhD from the University of California, San Francisco. He held faculty positions at MIT, the University of Michigan and the University of California, Berkeley. He served as chair of the Berkeley Department of Chemistry. In 2011, he joined the Scripps Research Institute faculty, becoming president of the organization one year later. Marletta is a MacArthur Fellow and has been elected to the Institute of Medicine, the American Academy of Arts and Sciences, and the National Academy of Sciences. His other professional career achievements include the Harrison Howe Award, the Repligen Award, the Esselen Award for Chemistry in the Public Interest, and being named the Cecil and Ida Green Professor of Chemistry. His research interests lie at the interface of chemistry and biology, where he has made discoveries relevant to human disease.



**Beverly S. Mitchell, MD | George E. Becker Professor of Medicine; Director, Stanford Cancer Institute**

Former U-M Affiliation: Professor of Internal Medicine

Before joining the Stanford faculty, Dr. Beverly S. Mitchell led the Molecular Therapeutics Program at UNC Chapel Hill's Lineberger Comprehensive Cancer Center and served as Associate Director for Translational Research and Chief of the Division of Hematology/Oncology. She was President of the American Society of Hematology and Chair of the Medical and Scientific Affairs Committee and Vice Chair for Medical and Scientific Affairs of the Leukemia and Lymphoma Society of America. She investigates the development of new therapies for hematologic malignancies and is interested in preclinical proof of principle studies on mechanisms inducing cell death, on metabolic targets involving nucleic acid biosynthesis in malignant cells, and in the regulation of ribosomal RNA synthesis in hematopoietic stem and progenitor cells and in the roles of dysregulated synthesis in bone marrow failure syndromes. Her lab is also involved in the translation of these studies into clinical trials.



**Sean J. Morrison, PhD | Director, Children's Research Institute; Mary McDermott Cook Chair in Pediatric Genetics; Investigator, Howard Hughes Medical Institute; University of Texas Southwestern Medical Center**

Former U-M Affiliation: Director, Center for Stem Cell Biology; Faculty Member, Life Sciences Institute

Sean Morrison has a BS in biology and chemistry from Dalhousie University and a PhD in immunology from Stanford University. He did a postdoctoral fellowship in neurobiology at Caltech. He directed the U-M Center for Stem Cell Biology from 1999 to 2011 and recently became the founding Director of the new Children's Research Institute at the University of Texas Southwestern Medical Center. He was a Searle Scholar, named to Technology Review Magazine's list of 100 Young Innovators and has received the Presidential Early Career Award for Scientists and Engineers, the International Society for Hematology and Stem Cell's McCulloch and Till Award and a MERIT Award from the National Institute on Aging. He researches the mechanisms that regulate stem cell self-renewal and stem cell aging in cancer. He is also active in public policy issues regarding stem cells.





**Elizabeth G. Nabel, MD | President, Brigham and Women's Hospital; Professor of Medicine, Harvard Medical School**

Former U-M Affiliation: Professor of Internal Medicine

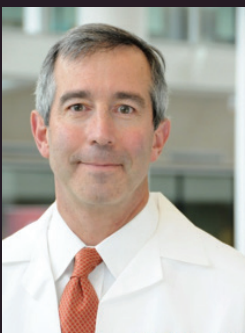
Betsy Nabel is a professor of medicine at Harvard Medical School and has served as the Brigham and Women's Hospital President since 2010. She brings a unique perspective to health care based on her broad experience as a physician, clinician, research scientist, academic medicine leader, and advocate for wellness and broadening access to care. Her work on the molecular genetics of cardiovascular disease has produced 17 patents and over 250 scientific publications. Dr. Nabel is a member of the American Academy of the Arts and Sciences and the Institute of Medicine. As Director of the National Heart, Lung, and Blood Institute, she leveraged the \$3 billion portfolio to pioneer programs in genomics and translational research.



**Gary J. Nabel, MD, PhD | Chief Scientific Officer and Senior Vice President, Sanofi**

Former U-M Affiliation: Henry Sewall Professor of Internal Medicine; Professor of Biochemistry; Director, Center for Gene Therapy; Co-Director, Center for Molecular Medicine; Investigator, Howard Hughes Medical Institute

Gary J. Nabel has an undergraduate degree, PhD and MD from Harvard University. He then served as a postdoctoral fellow in David Baltimore's laboratory at MIT's Whitehead Institute. At the NIH Allergic and Infectious Diseases, he served as Director of the Vaccine Research Center, leading the development of novel vaccine strategies against HIV and other infectious diseases. His honors include being elected to the Institute of Medicine of the National Academy of Sciences, the Amgen Scientific Achievement Award from the American Society for Biochemistry and Molecular Biology, the Health and Human Services Secretary's Award for Distinguished Service. He is a fellow of the American Association of Physicians and the American Academy of Arts Sciences.



**Michael S. Parmacek, MD | Chair, Department of Medicine; Director, Penn Cardiovascular Institute; Herbert C. Rorer Professor of Medical Sciences, University of Pennsylvania**

Former U-M Affiliation: Assistant Professor of Internal Medicine

Michael S. Parmacek performed residency training and a postdoctoral research fellowship at the Howard Hughes Medical Institute and U-M. He has been a faculty member at U-M, the University of Chicago, and the University of Pennsylvania. The Parmacek laboratory is recognized for discoveries influencing understanding of the molecular and genetic basis of congenital heart disease, diseases of the aorta, heart failure and regenerative biology. Under Parmacek's leadership, the Division of Cardiovascular Medicine at Penn has undergone a renaissance, ascending to the top tier of academic cardiology divisions in the United States. Dr. Parmacek has been elected to the ASCI and the AAP and he has served on the Advisory Council of the NHLBI.



**Craig B. Thompson, MD | President and Chief Executive Officer, Memorial Sloan Kettering Cancer Center**

Former U-M Affiliation: Associate Professor of Internal Medicine and Associate Professor of Microbiology and Immunology

Craig B. Thompson is President and CEO of Memorial Sloan-Kettering Cancer Center. Previously, he was Director of the Abramson Cancer Center and Associate Vice President for Cancer Services of the University of Pennsylvania Health System. He is a board-certified internist and medical oncologist with extensive research experience in cancer, immunology and translational medicine. His current research focuses on the role that metabolic changes play in the origin and progression of cancer. Dr. Thompson is a member of the Institute of Medicine, the National Academy of Sciences, the American Academy of Arts and Sciences, and the Medical Advisory Board of the Howard Hughes Medical Institute.

**Laurence A. Turka, MD | Deputy Director, Immune Tolerance Network; Harold and Ellen Danser Professor of Surgery, Harvard Medical School; Co-Director, Transplantation Biology Research Center, Massachusetts General Hospital**

Former U-M Affiliation: Associate Professor of Internal Medicine

Laurence Turka has an MD from Yale University. He was a faculty member at the University of Pennsylvania, where he served as Chief of the Renal Division. He is Co-Director of the Transplantation Biology Research Center at the Massachusetts General Hospital and the Harold and Ellen Danser Professor of Surgery at Harvard Medical School, where he is Co-Director of the Harvard Institute of Translational Immunology. He is a member of the American Society of Clinical Investigation and the Association of American Physicians, and former Editor in Chief of The Journal of Clinical Investigation. He is a former President of the American Society of Transplantation, and Chair of the Board of Scientific Counselors of NIAID.



**Barbara Weber, MD | Senior Vice President and Global Head, Oncology Translational Medicine, Novartis Oncology**

Former U-M Affiliation: Assistant Professor of Internal Medicine

Barbara Weber is Senior Vice President and Global Head of Oncology Translational Medicine, Novartis Oncology and is responsible for the strategy planning and execution of all research and clinical activities for the Novartis Oncology early development portfolio. She graduated from the University of Washington School of Medicine and completed Internal Medicine residency at Yale and a Medical Oncology Fellowship at Dana-Farber Cancer Institute. Weber was Professor of Medicine at UPenn, heading a translational research program in cancer genetics and the UPenn Cancer Center Breast Cancer Program. She was Vice President of Oncology Discovery and Transitional Medicine GlaxoSmithKline. Dr. Weber has received the ASCO/ACS Award, and was elected ASCI President in 2005. She has served on boards including the NCI Board of Scientific Advisors and the Board of Directors of both ASCO and AACR.



**James M. Wilson, MD, PhD | Director, Gene Therapy Program; Research Director, Center for Orphan Disease Research and Therapy; Professor, Department of Pathology & Laboratory Medicine, Perelman School of Medicine, University of Pennsylvania**

Former U-M Affiliation: Associate Professor of Internal Medicine and Biological Chemistry

James M. Wilson, a professor at the University of Pennsylvania, leads the effort to develop the field of gene therapy. He began work in gene therapy during his MD/PhD studies at U-M and did an Internal Medicine residency at the Massachusetts General Hospital and continued gene therapy work at MIT. At Penn, he created the first and largest academic-based program in gene therapy, initially focusing on clinical translation of existing gene transfer technologies. His efforts have resulted in the only commercially approved gene therapy in the western hemisphere. His lab recently discovered a family of viruses from primates that could be engineered to be gene transfer vehicles. Dr. Wilson has established several biotechnology companies and is leading a national dialogue on the challenges and controversies surrounding commercializing these potentially lifesaving treatments.



**Tachi Yamada, MD | Chief Medical & Scientific Officer, Executive Vice President & Board Member, Takeda Pharmaceuticals**

Former U-M Affiliation: John G. Searle Professor of Internal Medicine, Professor of Physiology and Chair of Internal Medicine

Tadataka (Tachi) Yamada holds a BS in history from Stanford University and MD from New York University School of Medicine. He previously was President of the Bill & Melinda Gates Foundation Global Health Program, Chairman, Research & Development, and Board Member of GlaxoSmithKline and Chair of the Department of Internal Medicine at U-M. Dr. Yamada is a member of the Institute of Medicine, the Academy of Medical Sciences (UK), and the National Academy of Medicine (Mexico). He has received an honorary appointment as Knight Commander of the Most Excellent Order of the British Empire and has served on the President's Council of Advisors on Science and Technology.



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### About the Life Sciences Institute

The Life Sciences Institute is a nucleus of interdisciplinary biomedical research at the University of Michigan. LSI faculty members conduct research in their labs in the institute and hold academic appointments in other schools or colleges at U-M, including the Medical School, College of Pharmacy, and fourteen departments including Chemistry, Cell and Developmental Biology, Physiology, Human Genetics, Bioinformatics, Hematology and Oncology and Medicinal Chemistry. The LSI celebrated its grand opening in May 2004. Alan Saltiel has been the Mary Sue Coleman Director of the Life Sciences Institute since 2002.

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### About the Symposium

In 2002, while construction of the institute was still underway, the LSI held its first symposium. The event continues to represent the LSI's most important values: excellence in science, investment in high-risk and high-impact research, and especially the synergy that happens when top scientists from a range of fields meet and share their work around a common theme. To celebrate the 10th anniversary of the institute's opening, the 2014 symposium features scientific faculty "alumni" who spent formative parts of their careers at the University of Michigan.

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### Past Symposia:

- 2002 Structural Biology of Cell Signaling
- 2003 Genetic Insights into Biology and Disease
- 2004 Exploring the Complexity of Life
- 2005 Cancer Insights: Molecules to Medicine
- 2006 Molecular Insights into Metabolic Disease
- 2007 Frontiers in Stem Cell Biology
- 2008 Focus on Chemical Biology
- 2009 Evolutionary Biology
- 2010 Macromolecular Complexes in Cell Biology
- 2011 Autophagy
- 2012 Development and Diseases of the Nervous System
- 2013 Exploring Epigenetics and RNA



CELEBRATING  
**LSI10**  
A DECADE OF DISCOVERY

To learn more about the Life Sciences Institute at the University of Michigan, visit [lsi.umich.edu](http://lsi.umich.edu)