12th Annual LSI Symposium

June 6, 2013 A. Alfred Taubman Biomedical Science Research Building

8:45 a.m. Welcome
Alan Saltiel, PhD
Mary Sue Coleman Director of the
Life Sciences Institute

9:00 a.m. Introduction
Mary Sue Coleman, PhD
President, University of Michigan

9:10 a.m.
Mary Sue and Kenneth Coleman Life Sciences Lecture: "Genetic and phylogenetic analysis of small RNA functions"
Gary Ruvkun, PhD
Professor of Genetics, Harvard Medical School

10:10 a.m. Break

10:30 a.m.
"Multi-generational RNAi inheritance and germline immortality"
Scott Kennedy, PhD
Associate Professor of Medical Genetics, University of Wisconsin-Madison

11:15 a.m.
"Small RNA: from bacteria to metazoan germline"
Alexei Aravin, PhD
Assistant Professor of Biology,
California Institute of Technology

12:00 p.m. Break (lunch by invitation only)

1:15 p.m.
"Mechanism of RNAi-mediated heterochromatin assembly"
Danesh Moazed, PhD
Professor of Cell Biology, Harvard Medical School; Howard Hughes Medical Institute Investigator

2:00 p.m.
"Structural biology of RNA-mediated gene regulation"
Dinshaw Patel, PhD
Member and Abby Rockefeller Mauze Chair in Experimental Therapeutics, Structural Biology Program, Memorial Sloan-Kettering Cancer Center

2:45 p.m. Break

3:15 p.m.
"XIST RNA, X-inactivation and pluripotency"
Barbara Panning, PhD
Associate Professor of Biochemistry and Biophysics, University of California, San Francisco School of Medicine

4:00 p.m.
"The role of lncRNA SChLAP1 in prostate cancer aggressiveness"
Arul Chinnaiyan, MD, PhD
Director of Michigan Center for Translational Pathology; S.P. Hicks Endowed Professor of Pathology and Professor of Urology, University of Michigan; Howard Hughes Medical Institute Investigator; American Cancer Society Research Professor

UNIVERSITY OF MICHIGAN

life sciences institute
UNIVERSITY OF MICHIGAN

12th Annual LSI Symposium
Exploring Epigenetics and RNA
June 6, 2013

Keynote Speaker
Mary Sue and Kenneth Coleman Life Sciences Lecture
Gary Ruvkun is a professor of genetics at Harvard Medical School. He has received the Rosenstiel Award from Brandeis University, the Warren Triennial Prize from Massachusetts General Hospital, the Benjamin Franklin Medal from the Franklin Institute, the Gairdner International Award from the Gairdner Foundation of Canada, the Albert Lasker Award for Basic Medical Research, the Louisa Horwitz Prize from Columbia University, the Shaul and Meira Massry Prize, the Dan David Prize for aging research and the Ipsen Foundation Longevity Prize. He is a member of the National Academy of Sciences, the Institute of Medicine, and the American Academy of Arts and Sciences. He has an undergraduate degree from University of California, Berkeley and PhD in biophysics from Harvard University.

Alexei Aravin is an assistant professor in the Division of Biology at the California Institute of Technology. His lab uses a systems biology approach to understand the biogenesis and function of non-coding RNA and reveal the mechanisms that determine stability and fate of coding RNAs. He has a PhD from the Institute of Molecular Genetics in Russia, where he investigated small RNA-guided repression in the *Drosophila* germline. He was a postdoctoral fellow at Rockefeller University and at Cold Spring Harbor Laboratory, where research using fruit fly and mouse models led to the discovery and characterization of the piRNA pathway.

Arul M. Chinnaiyan is an American Cancer Society Research Professor and S.P. Hicks Endowed Professor of Pathology and Professor of Urology at the University of Michigan, and Director of the Michigan Center for Translational Pathology. He is a Howard Hughes Medical Institute Investigator, a U-M A. Alfred Taubman Medical Research Institute Scholar and a member of the Institute of Medicine of the National Academies, the Association of American Physicians and the American Society for Clinical Investigation. He is on the Board of Scientific Advisors for the National Cancer Institute and the Board of Directors of the American Association of Cancer Research. He has an MD and PhD in pathology from U-M; his awards include the Dean's Basic Science Research Award, the Amgen Outstanding Investigator Award, and the Pew Biomedical Scholar Award.

Scott Kennedy is an associate professor in the Laboratory of Genetics at the University of Wisconsin-Madison. Dr. Kennedy was an undergraduate student in the Cellular and Molecular Biology Program at the University of Michigan, received his doctoral degree from the University of Chicago, and did his post-doctoral training in the Department of Molecular Biology at Massachusetts General Hospital and the Department of Genetics at Harvard University. Among other honors, he has received the Shaw Scholar Award and the Pew Biomedical Scholar Award.

Danesh Moazed is a professor at Harvard Medical School and a Howard Hughes Medical Institute Investigator. He studies the assembly and function of heterochromatin, specialized chromatin structures that regulate gene expression and maintain chromosome stability. His group has used biochemical and proteomic approaches to define the protein complexes that participate in heterochromatin assembly in the budding and fission yeast. In budding yeast, their work has led to a model for Sir protein-mediated heterochromatin assembly that involves the coupling of histone binding, histone deacetylation, and nucleosome bridging activities in the Sir silencing complex. In fission yeast, his group identified the RNA-Induced Transcriptional Silencing (RITS) complex as well as several other complexes that localize to chromatin-bound nascent transcripts and mediate RNAi-dependent heterochromatin formation. Their results provided the first evidence that histone-modifying complexes use nascent RNA transcripts to gain access to chromatin.

Barbara Panning is an associate professor at the University of California, San Francisco, School of Medicine, Department of Biochemistry & Biophysics. She has BS and PhD degrees from McMaster University, and carried out postdoctoral research at the Whitehead Institute for Biomedical Research and the Massachusetts Institute for Technology. Her work focuses on epigenetic processes that impact embryonic stem cell biology. Her lab studies X-inactivation, or the mechanisms that direct each female embryonic stem cell to randomly select one X chromosome for silencing and then to stably silence that X chromosome during differentiation, how chromatin proteins impact embryonic stem cell self-renewal, and the connection between metabolic pathways and chromatin proteins in embryonic stem cells.

Dinshaw Patel is the Abby Rockefeller Mauze Chair in Experimental Therapeutics and a member of the Structural Biology Program, Memorial Sloan-Kettering Cancer Center, where he researches molecular processes controlling gene regulation, with emphasis on projects involving RNA silencing and epigenetic regulation. His group's research provided a mechanistic framework for argonaute-mediated site-specific cleavage of messenger RNA through systematic studies of argonaute complexes with bound guide strand and added target strand, as well as structure-function studies on epigenetic regulation. In particular, his research has addressed how post-translational modifications of nucleosomal histones regulate access to the underlying DNA by modulating local chromatin structure.

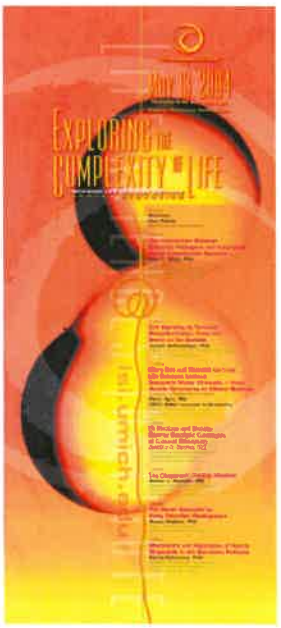
Director of the Life Sciences Institute

Alan R. Saltiel, Mary Sue Coleman Director of the Life Sciences Institute, Professor, Division of Molecular Medicine and Genetics, Department of Internal Medicine, and John Jacob Abel Professor in the Life Sciences, Department of Molecular and Integrative Physiology, U-M Medical School. During his doctorate studies in biochemistry at the University of North Carolina, Dr. Saltiel worked on thyroid-stimulating hormone and its relationship to thyroid cancer. As a postdoctoral fellow under Pedro Cuatrecasas in the Wellcome Research Labs, he began investigating insulin. He was Distinguished Research Fellow and Senior Director of the Department of Cell Biology at Parke-Davis Pharmaceutical Research Division (now Pfizer Global Research) in Ann Arbor. He is a member of the Institute of Medicine and fellow of the American Association for the Advancement of Science.

About the symposium

The Life Sciences Institute's annual interdisciplinary scientific symposium explores a different area of research, selected by the faculty every year.

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: 150 Years After the *Origin*

2010
Macromolecular Complexes in Cell Biology

2011
Autophagy in Health and Disease

2012
Development and Diseases of the Nervous System

About the LSI

The Life Sciences Institute at the University of Michigan opened its doors in September 2003. Twenty-five primary investigators representing a range of fields, including cell biology, genetics, chemistry, structural biology and stem cells, operate labs in the institute and hold joint academic appointments across the university and in the U-M Medical School. For more information, please visit lsi.umich.edu.