



life sciences institute

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AUTOPHAGY

in Health & Disease

THURSDAY 05 MAY

University of Michigan Life Sciences Institute
TENTH ANNUAL SYMPOSIUM

BIOMEDICAL SCIENCE
RESEARCH BUILDING
KAHN AUDITORIUM
109 Zina Pitcher Place • Ann Arbor MI 48109

8:45 am

Welcome & Opening Remarks
Alan Saltiel, PhD

9:00 am

Artophagy: The Merging of Autophagy & Art
Daniel J. Klionsky, PhD

10:05 am

Physiological Role of Autophagy in Protein
& Organelle Turnover
Noboru Mizushima, MD, PhD

10:55 am

Autophagy — An Emerging Immunological Paradigm
Vojo Deretic, PhD

1:10 pm

Autophagy, a Regulator of Cellular Homeostasis
that Protects Against Neurodegeneration
David C. Rubinsztein, PhD

2:00 pm

Selective Autophagy in Aging & Age-Related Disorders
Ana Maria Cuervo, MD, PhD

3:10 pm

Keynote Introduction
University of Michigan President, Mary Sue Coleman

3:15 pm

Keynote: Exercise, Autophagy, & Beneficial Metabolic Effects
Beth Levine, MD

4:05 pm

Closing Remarks
Alan Saltiel, PhD

Welcome: Alan Saltiel, PhD

Mary Sue Coleman Director of the Life Sciences Institute



Daniel J. Klionsky, PhD

Alexander G. Ruthven Professor of Life Sciences, Research Professor, Life Sciences Institute, Professor of Molecular, Cellular & Developmental Biology, University of Michigan

Daniel J. Klionsky was an undergraduate at UCLA, received his PhD from Stanford University, and was a Helen Hay Whitney postdoctoral fellow at the California Institute of Technology. Dr. Klionsky was a Professor of Microbiology at the University of California, Davis until 2000, and held a Guggenheim Fellowship in 1997-1998.

Dr. Klionsky is currently the Alexander G. Ruthven Professor of Life Sciences at the University of Michigan, Ann Arbor. Dr. Klionsky is highly committed to excellence in teaching. In 2003 he received the National Science Foundation Director's Award for Distinguished Teaching Scholars, which recognizes career contributions in both teaching and research, and in 2006, the National Academies of Science named him an Education Mentor. Dr. Klionsky's research focuses on protein targeting, organelle biogenesis, and autophagy in baker's yeast. Dr. Klionsky is the founding Editor-in-Chief of the journal *Autophagy*, and he was elected a Fellow of the AAAS in 2009.



Noboru Mizushima, MD, PhD

Professor, Department of Physiology & Cell Biology, Tokyo Medical and Dental University

Noboru Mizushima graduated from Faculty of Medicine at Tokyo Medical and Dental University in 1991, and received his PhD in Medicine from Tokyo Medical and Dental University in 1996. He then moved to the National Institute for Basic Biology as a post-doc and started work on autophagy in yeast and mammals in Dr. Yoshinori Ohsumi's laboratory.

Dr. Mizushima moved to Tokyo Metropolitan Institute of Medical Science in 2004 as a laboratory head, and was promoted to Professor of Physiology and Cell Biology of Tokyo Medical and Dental University in 2006. His research areas include autophagy, intracellular protein/organelle degradation, protein metabolism, and nutrient signaling.



Vojo Deretic, PhD

Professor & Chair, Department of Molecular Genetics & Microbiology, University of New Mexico Health Sciences Center

Vojo Deretic is Professor of Molecular Genetics and Microbiology and Cell Biology and Physiology at the University of New Mexico. He received his undergraduate, graduate, and postdoctoral education in Belgrade, Paris, and Chicago. He joined the Department of Molecular Genetics and Microbiology, University of New Mexico, in 2001. Dr. Deretic has served for many years as a permanent member on National Institutes of Health study sections and on panels for other funding agencies including the Cystic Fibrosis Foundation, and was Chair of the NIH AIDS Opportunistic Infections and Cancer study section. In July 2006, Dr. Deretic was appointed Chair of the Department of Molecular Genetics and Microbiology, University of New Mexico School of Medicine.

Dr. Deretic's main contributions to science come from studies by his team on the role of autophagy in infection and immunity. His group is one of those that made the discovery that autophagic degradation is a major effector of innate and possibly adaptive immunity mechanisms for direct elimination of intracellular microbes.

David C. Rubinsztein, PhD

**Professor of Molecular Neurogenetics, Cambridge Institute for Medical Research,
University of Cambridge**

After completing his basic medical training, David Rubinsztein completed a BSc in Medicine with Honours and PhD in the Medical Research Council/University of Cape Town Unit for the Cell Biology of Atherosclerosis. He came to Cambridge in 1993 as a senior registrar in Genetic Pathology. During this period, he started working on Huntington's disease and developed an independent research group.

In 1997, Dr. Rubinsztein acquired his Certificate of Completion of Specialist Training and was awarded a six-year Glaxo Wellcome Fellowship. This was followed in 2001 by an MRC Programme grant and Wellcome Trust Senior Clinical Fellowship, both renewed in 2006.

Dr. Rubinsztein was elected as a Fellow of the Academy of Medical Sciences in 2004, and Professor of Molecular Neurogenetics at the University of Cambridge (personal chair) in 2005. He was awarded the Graham Bull Prize for Clinical Science by the Royal College of Physicians in 2007.



Ana Maria Cuervo, MD, PhD

**Professor, Department of Developmental & Molecular Biology, Marion Bessin Liver
Research Center, Institute for Aging Research, Albert Einstein College of Medicine**

Ana Maria Cuervo is a Professor in the Departments of Developmental and Molecular Biology and of Medicine at the Albert Einstein College of Medicine and co-director of the Einstein Institute for Aging Studies. She obtained her MD degree and a PhD in Biochemistry and Molecular biology from the University of Valencia in 1990 and 1994, respectively, and received postdoctoral training at Tufts University. In 2002, she started her laboratory at the Albert Einstein College of Medicine, where she continues her studies in the role of protein-degradation in neurodegenerative diseases and aging.

Dr. Cuervo has been invited to present the Robert R. Konig Memorial Lecture and the NIH Director's Lecture; she was also the recipient of the 2005 P. Benson Award in Cell Biology, the 2005/8 Keith Porter Fellow in Cell Biology, and the 2008 Vincent Cristofalo Rising Start in Aging Award. She is currently co-Editor-in-Chief of *Aging Cell* and associate editor of *Autophagy*.



Beth Levine, MD

**Professor of Internal Medicine & Microbiology, Howard Hughes Medical Institute,
University of Texas Southwestern Medical Center**

Dr. Levine is the Chief of Infectious Diseases, Jay P. Sanford Professor in Infectious Diseases and Professor of Internal Medicine and Microbiology at UT Southwestern Medical Center, and a Howard Hughes Medical Institute investigator. She received her BA from Brown University, her MD from Cornell University Medical College, and performed her post-doctoral training at Johns Hopkins University School of Medicine.

Her research focuses on understanding the molecular regulation and the biological functions of autophagy. Her laboratory identified the mammalian autophagy gene, beclin 1, and using a series of genetic, cell biology, biochemical, and molecular approaches in model organisms ranging from yeast to worms to mice, her laboratory has uncovered several important roles that beclin 1 and the autophagy pathway play in normal physiology and in protection against disease.

Dr. Levine has received numerous awards for her research, including election into the American Society for Clinical Investigation and the American Association of Physicians and the 2008 O'Donnell Award in Medicine from the Academy of Medicine, Engineering and Science of Texas.



Closing: Alan Saltiel, PhD

Mary Sue Coleman Director of the Life Sciences Institute



Macroautophagy by J. Fred "Paulo" Dice (collection of Dr. Daniel Klionsky). Appalachian white oak hoops, bloodwood disk, stainless steel sphere and sculpted cockscomb abaster, dimensions 20" h X 14" w X 6" d.

Dr. Ana Maria Cuervo, also has a sculpture by Dice that shows chaperone-mediated autophagy, which is what they both worked on. J. Fred "Paulo" Dice passed away on January 9, 2010.

LSI Mission:

To improve human health through collaborative scientific discovery.

About the LSI:

At the University of Michigan Life Sciences Institute (LSI) a team of more than 400 professionals, including world-class faculty and researchers in chemistry, cell and developmental biology, physiology, human genetics, bioinformatics, hematology and oncology, works together to solve fundamental problems in human health. Opened in 2003, the LSI is a hub for collaborative biomedical discovery at the University of Michigan.

How do you say autophagy?

Is it (ōt-ō-fā'-jē) or (ō-'tāf-ā-jē)?

The word "autophagy" was coined by Christian de Duve. When LSI professor Dan Klionsky asked him which pronunciation he preferred, de Duve answered with the following, "You have my permission [to say it either way]... I coined the word, but not the pronunciation."