



Join Keystone Symposia  
for the 2016 conference on:

# Autophagy: Molecular and Physiological Mechanisms

June 5–9, 2016

Whistler Conference Centre | Whistler, British Columbia | Canada

Scientific Organizers:

Sharon A. Tooze, Ana Maria Cuervo and Noboru Mizushima

*Autophagy, an evolutionarily conserved pathway, is required for homeostasis, growth and survival in eukaryotic cells. Deregulation of autophagy is implicated in many human diseases, and mutations in autophagy genes are known to be a direct cause of severe human disorders. This meeting will specifically address the basic molecular pathway to increase our knowledge of the genes, proteins and signaling pathways involved in autophagy. The program will assemble experts in the molecular details of the diverse autophagic pathways and therefore provide clinicians and pharmaceutical companies with information to develop new, specific targets. Two workshops will address the relevance to diseases caused by deregulation of autophagy. These workshops will provide an opportunity for work in progress to be presented, to consolidate existing data on manipulating autophagy in disease, and to discuss and develop strategies for the future.*

*Session Topics:*

- Molecular Mechanisms of Autophagy I & II
- Workshop 1: Selective and Non-Canonical Autophagy Pathways
- Autophagy and Diseases of Aging
- Regulation of Autophagic Processes
- Autophagy in Conserved Homeostatic Pathways
- Molecular Reconstitution of Autophagy Machinery
- Autophagy in Human Pathophysiology
- Workshop 2: Challenges in Measuring and Manipulating Autophagy in Humans
- Autophagy and Cancer



Submitting an abstract is a great way of participating in the conference through poster presentation and possible selection for a short talk.

**Scholarship & Discounted Abstract Deadline: Feb 4, 2016**

**Abstract Deadline: Mar 8, 2016**

**Discounted Registration Deadline: Apr 5, 2016**

For additional details, visit [www.keystonesymposia.org/16V1](http://www.keystonesymposia.org/16V1).

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on Molecular and Cellular Biology  
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### SUNDAY, JUNE 5

#### Arrival and Registration

### MONDAY, JUNE 6

#### Molecular Mechanisms of Autophagy I

\***Vojo Deretic**, University of New Mexico Health Sciences Center, USA

**Tamotsu Yoshimori**, Osaka University, Japan  
*Regulation of Membrane Dynamics in Autophagy; Its Implication in Diseases*

**Sharon A. Tooze**, Francis Crick Institute, UK  
*Molecular Pathways and Vesicular Traffic during Autophagosome Formation*

**Noboru Mizushima**, University of Tokyo, Japan  
*The Life of the Autophagosome*

**Fulvio Reggiori**, University Medical Centre Groningen, Netherlands  
*Spatial Atg8 Deconjugation Depends on the Regulation of Atg4 Function by Atg1 Phosphorylation and Phosphatidylinositol-3-Phosphate Levels*

**Josh Lyon Andersen**, Brigham Young University, USA  
*Short Talk: Regulation of mAtg9A Phosphorylation by an AMPK/ULK1/LIMD1 Complex*

**Roarke A. Kamber**, Harvard University, USA  
*Short Talk: Local Control of Autophagy Receptor Activation*

#### Poster Session 1

#### Workshop 1: Selective and Non-Canonical Autophagy Pathways

**Allyson Anding**, University of Massachusetts Medical School, USA  
*A Novel and Conserved Ubiquitin Receptor that is Required for Parkin-Dependent Mitophagy*

\***Li-Lin Du**, National Institute of Biological Sciences, China  
*Fission Yeast Nbr1 Acts as a Cargo Receptor in an ESCRT-Dependent Vacuolar Targeting Pathway*

**Oliver Florey**, Babraham Institute, UK  
*Novel Mechanisms of ATG16L1 Recruitment in Non-Canonical Autophagy*

\***Katarzyna Zientara-Rytter**, University of California, San Diego, USA  
*New Roles of Atg37 and Pex3 in Assembly of the Pexophagic Receptor Protein Complex*

**Jakob Mejlvang**, UiT The Arctic University of Norway, Norway  
*The Immediate Autophagic Response to Starvation (IARS) is Independent of Canonical Macroautophagy but Dependent on ESCRT-III and Vps4*

**Jin-A Lee**, Hannam University, South Korea  
*Development of a New Autophagosome Sensor with an LC3-Interacting Region (LIR) Motif and a Hydrophobic Domain*

#### Molecular Mechanisms of Autophagy II

\***Sascha Martens**, University of Vienna, Austria

**Nicholas Ktistakis**, Babraham Institute, UK  
*Starvation-Induced and Selective Autophagy: The First 3 Minutes*

**Francesco Cecconi**, University of Rome Tor Vergata, Italy  
*AMBRA1 Negative Control at the Crossroads among Autophagy, Cell Proliferation and Cell Death*

**Claudine Kraft**, University of Freiburg, Germany  
*EMBO Young Investigator Lecture: Molecular Regulation of Autophagy: Signaling and Beyond*

**Carsten Sachse**, EMBL - European Molecular Biology Laboratory, Germany  
*Short Talk: Higher-Order Assemblies of Polymeric and Oligomeric Cargo Receptor Complexes form the Membrane Scaffold for Selective Autophagy*

### TUESDAY, JUNE 7

#### Autophagy and Diseases of Aging

\***Alicia Melendez**, Queens College - CUNY, USA

**Ana Maria Cuervo**, Albert Einstein College of Medicine, USA  
*Chaperone-mediated Autophagy in the Fight against Aging*

**David C. Rubinsztein**, Cambridge Institute for Medical Research, UK  
*Autophagy, Neurodegeneration and Neurodevelopment*

**Anne Simonsen**, University of Oslo, Norway  
*Regulation of Autophagosome Biogenesis by Lipid-Binding Proteins*

**Peter C. Butler**, University of California, Los Angeles, USA  
*Autophagy and Diabetes*

**Jessica Chang**, Sanford Burnham Prebys Medical Discovery Institute, USA

*Short Talk: Spatial and Temporal Regulation of Autophagy during C. Elegans Aging*

**Patricia Boya**, Centro de Investigaciones Biológicas, CSIC, Spain  
*Short Talk: Lysosomal Cell Death in Animal Models of Neurodegenerative Diseases*

#### Chewing the Fat: Panel and Discussion about Autophagy and Future Directions of the Autophagy Field

\***Eric H. Baehrecke**, University of Massachusetts Medical School, USA

\***Ana Maria Cuervo**, Albert Einstein College of Medicine, USA

\***Vojo Deretic**, University of New Mexico Health Sciences Center, USA

\***Leon O. Murphy**, Casma Therapeutics, USA

#### Regulation of Autophagic Processes

\***Thomas Melia**, Yale School of Medicine, USA

**Hong Zhang**, Chinese Academy of Sciences, China  
*Differential Function of the Four WIPIs in Autophagy*

**Leon O. Murphy**, Casma Therapeutics, USA  
*Regulation of Selective Autophagy*

**Zvulun Elazar**, Weizmann Institute of Science, Israel  
*Role of Lipids in Autophagy*

**Hemmo Meyer**, University Duisburg-Essen, Germany  
*Short Talk: A Role of the Ubiquitin-directed VCP/p97 AAA-ATPase in Autophagy*

#### Poster Session 2

### WEDNESDAY, JUNE 8

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### Molecular Reconstitution of Autophagy Machinery

\***Zvulun Elazar**, Weizmann Institute of Science, Israel

**Thomas Melia**, Yale School of Medicine, USA

*Membrane Recognition by the Atg4 Family of Proteases*

**Sascha Martens**, University of Vienna, Austria

*EMBO Young Investigator Lecture: Molecular Mechanisms of Selective Autophagy*

**Thomas Wollert**, Institut Pasteur Paris, France

*EMBO Young Investigator Lecture: How to Make an Autophagosome – Membrane Remodeling in Autophagy*

**Ivan Dikic**, Goethe University Medical School, Germany

*Ubiquitin Regulation of Selective Autophagy*

**Lindsey Young**, University of California, Berkeley, USA

*Short Talk: Structural Insights into Autophagy Initiation by PI3K Complex I*

**Mary Lilly**, NICHD, National Institutes of Health, USA

*Short Talk: The GATOR2 Complex Regulates Lysosome Acidification and Autophagic Flux Independent of TORC1 Activity*

### Autophagy in Conserved Homeostatic Pathways

\***Claudine Kraft**, University of Freiburg, Germany

**Gabor Juhasz**, Biological Research Center, HAS, Hungary

*Autophagosome and Endosome Maturation in Drosophila*

**Masaaki Komatsu**, School of Medicine Niigata University, Japan

*Autophagy-Adaptors Regulate Cellular Metabolism through Multiple Transcription-Factor Pathways*

**Alicia Melendez**, Queens College - CUNY, USA

*Autophagy in C. elegans Development and Aging*

**Tamiza Nanji**, University of British Columbia, Canada

*Short Talk: Molecular Organization and Interactions of the Fission Yeast Atg1 Complex*

### Poster Session 3

#### THURSDAY, JUNE 9

##### Autophagy in Human Pathophysiology

\***Anne Simonsen**, University of Oslo, Norway

**Janice Lee**, Takeda Oncology, USA

*Targeting Autophagy for Cancer Therapy*

**Vojo Deretic**, University of New Mexico Health Sciences Center, USA

*Talk and Crosstalk between Immune Response and Autophagy*

**Katja Simon**, University of Oxford, UK

*Autophagy Determines Hematological Cell Fate*

**Herbert (Skip) W. Virgin**, Washington University School of Medicine, USA

*Regulation of Inflammation and Immunity by Autophagy Genes*

**Véronik Lachance**, Icahn School of Medicine at Mount Sinai, USA

*Short Talk: Mutation of Vps11 Causes a New Class of*

*Leukoencephalopathy and Autophagy Impairment*

**Rhea M. Sumpter, Jr.**, University of Texas Southwestern Medical Center, USA

*Short Talk: Fanconi Anemia Tumor Suppressor Genes Function in Selective Autophagy, Immunity and Mitochondrial Homeostasis*

### Workshop 2: Challenges in Measuring and Manipulating Autophagy in Humans

\***Janice Lee**, Takeda Oncology, USA

\***Peter C. Butler**, University of California, Los Angeles, USA

**Joo Yun Jun**, NICHD, National Institutes of Health, USA

*Melanocortin 3 Receptor (MC3R), A Novel Regulator of Hepatic Autophagy in Obesity*

**Anatoliy I. Masyuk**, Mayo Clinic, USA

*Dysregulated Autophagy in Cholangiocytes Contributes to the Progression of Polycystic Liver Disease*

**Natalia Rodriguez Muela**, Harvard University, USA

*Role of Autophagy in Spinal Muscular Atrophy*

**Katrin Panzitt**, Medical University Graz, Austria

*The Autophagy Inhibitor Rubicon is a Direct Target of the Bile Acid Receptor FXR in Human Liver and is Induced in Human Cholestasis*

**Christos E. Zois**, University of Oxford, UK

*Targeting VPS34 to Enhance Anticancer Therapy*

**Shankar J. Chinta**, Buck Institute for Research on Aging, USA

*High Potency Miscible Activators of TFEB and Clearance of Toxic Alpha-Synuclein Oligomers; Implications for Parkinson's Disease*

### Autophagy and Cancer

\***Ana Maria Cuervo**, Albert Einstein College of Medicine, USA

**Alec Kimmelman**, New York University Langone Medical Center, USA

*Autophagy, Metabolism and Cancer*

**Andrew M. Thorburn**, University of Colorado AMC, USA

*Autophagy and Cancer Therapy*

**Kevin M. Ryan**, Beatson Institute for Cancer Research, UK

*Mechanism of Autophagy in Cell Death and Cancer*

**Sharon Gorski**, BC Cancer Research Centre, Canada

*Short Talk: Evaluation of ATG4B Expression and Function in Breast Cancer Subtypes*

### Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

#### FRIDAY, JUNE 10

#### Departure