Save the Date for the 2014 Keystone Symposia meeting on:

**Mitochondrial Dynamics and Physiology**

**February 18–23, 2014**

**Santa Fe Community Convention Center**  
**Santa Fe, New Mexico, USA**

Scientific Organizers: Rodrigue Rossignol and Heidi M. McBride

*joint with the meeting on “The Chemistry and Biology of Cell Death”*

**The conference will:**

- Provide a multi-disciplinary consideration of mitochondrial research spanning various domains of biology and medicine including innate immunity, bioenergetics and chemoresistance, and disease ranging from neurodegenerative, psychiatric and cardiovascular disorders to cancer and rare diseases;

- Incorporate a session on regenerative medicine dedicated to the emerging role of mitochondrial physiology in stem cell biology and development;

- Provide additional opportunities for interdisciplinary interactions as a result of the joint meeting on “The Chemistry and Biology of Cell Death,” which will share a keynote address and plenary session with this meeting.

For more information and to view the full program, visit [www.keystonesymposia.org/14Q5](http://www.keystonesymposia.org/14Q5)
TUESDAY, FEBRUARY 18
Arrival and Registration

WEDNESDAY, FEBRUARY 19
Keynote Session (Joint)
*Guy S. Salvesen, Sanford-Burnham Medical Research Institute, USA
*Rodrigo Rossignol, University of Bordeaux, France
Vishva M. Dixit, Genentech, Inc., USA

Mitochondria and Death (Joint)
*Sally A. Kornbluth, Duke University Medical Center, USA
*Heidi M. McBride, McGill University, Canada
David W. Andrews, Sunnybrook Research Institute, Canada

Shedding Light on the Mechanisms of Action of Bcl-2 Family Proteins
Richard J. Youle, NINDS, National Institutes of Health, USA
Damage Control - How the Pink1/Parkin Pathway Can Regulate Removal of Impaired Mitochondria by Autophagy
Dhyan Chandra, Roswell Park Cancer Institute, USA

Short Talk: Macromolecular Changes on Mitochondria and their Impact on DNA Damage-Induced Apoptotic Cell Death
Luca Scorrano, University of Padova, Italy

Role of Mitochondrial Dynamics in Embryogenesis

Mitochondrial Architecture (Q5)
*David C. Chan, California Institute of Technology, USA
Nikolaus Pfanner, University of Freiburg, Germany

Biogenesis and Architecture of Mitochondria
Thomas Langer, CECAD Research Center, Germany

Proteolytic Control of Mitochondrial Membrane Dynamics
Peter Rehling, University Medical Centre Göttingen, Germany

Biogenesis of Mitochondrial Membrane Protein Complexes
Victoria L. Hewitt, Medical Research Council, UK

Short Talk: The Role of SAM and ERMES Complexes in Candida albicans Mitochondria

Fundamental Death Mechanisms (Q6)
*John Silke, Walter and Eliza Hall Institute of Medical Research, Australia
Douglas R. Green, St. Jude Children's Research Hospital, USA

Aptotic and Non-Apoptotic Developmental Cell Death in Mice
Andreas E. Strasser, Walter and Eliza Hall Institute of Medical Research, Australia

The Role of the BCL-2 Regulated (Mitochondrial) Apoptotic Pathway in Morphogenesis during Mouse Development

Peter E. Czabotar, Walter and Eliza Hall Institute of Medical Research, Australia
Crystal Structures of Bax and Bak Reveal Molecular Events Initiating Apoptosis

Poster Session 1

THURSDAY, FEBRUARY 20

Mitochondrial Dynamics (Q5)
*Jodi Nunnari, University of California, Davis, USA
Heidi M. McBride, McGill University, Canada

The Physiological Implications of Mitochondrial SUMOylation
Gia K. Voeltz, University of Colorado Boulder, USA

Snapshots of ER-Mediated Mitochondrial Constriction Sites
Henry N. Higgs, Geisel School of Medicine at Dartmouth, USA
A Role for Actin, Formins and Myosin II in Mammalian Mitochondrial Fission

Stefan Strack, University of Iowa, USA

Regulation of Mitochondrial Fission in Neuronal Development and Synaptic Plasticity
Robert A. Screaton, Sunnybrook Research Institute, Canada

Short Talk: Genome-Wide RNAi Screen Identifies ROMO1 as an Essential Redox-Dependent Regulator of Mitochondrial Dynamics

Chemical Biology (Q6)
*Jennie R. Lill, Genentech, Inc., USA
Mark B. Hampton, University of Otago, New Zealand

Reactive Oxygen Species and Cell Death
Brent R. Stockwell, Columbia University, USA

Probing Cell Death with Small Molecules
Matthew S. Bogoy, Stanford University School of Medicine, USA

A Chemical Biology Approach for the Selective Imaging and Inhibition of Caspases
Sarah H. MacKenzie, North Carolina State University, USA

Short Talk: A Natural Peptide Binds to an Allosteric Site in Caspase-3
Sharan R. Srinivasan, University of Michigan, USA

Short Talk: Allosteric Inhibitor of Hsp70 Reveals its Role at the Intersection of Multiple Cell Death Pathways
Guillaume Lessene, Walter and Eliza Hall Institute of Medical Research, Australia

Short Talk: Novel, Potent and Selective Inhibitors of the Pro-Survival BCL-2 Family Member BCL-XL

Poster Session 2

Workshop 1: Mitochondrial Research and Drug Discovery (Q5)
*Thomas Langer, CECAD Research Center, Germany
Mitochondrial Dynamics and Physiology (Q5)
Scientific Organizers: Rodrigue Rossignol and Heidi M. McBride
Sponsored by Nestlé Institute of Health Sciences
The Chemistry and Biology of Cell Death (Q6)
Scientific Organizers: Guy S. Salvesen, Matthew S. Boggo and Jennie R. Lill
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Sponsored by Genentech, Inc. and Infinity Pharmaceuticals, Inc.

Ying Liu, Peking University, China
Endogenous Small Molecule Signals of C. elegans Mitochondrial Dysfunction Couple to the Induction of Detoxification and Pathogen Response Pathways

Bjoern Oettinghaus, University Hospital Basel, Switzerland
Induced Drp1 Ablation in the Adult Mouse Forebrain

Melissa Vos, University of Lübeck, Germany
Stimulation of the Electron Transport Chain as a Possible Therapeutic Strategy for Parkinson’s Disease

Daniel J. Gonzalez-Dunia, Inserm UMR1043, France
Bomavirus X Protein: A New Tool Against Neuropathological Disorders?

Simone Caielli, Baylor Institute for Immunology Research, USA
Incomplete Mitophagy in Human Neutrophils Leads to Extrusion of Mitochondrial Nucleoids

Erin Quan Toyama, Genomics Institute of the Novartis Research Foundation, USA
Identification of MFF as a Direct Substrate for AMPK

Workshop 1: Autophagy and Mitophagy (Q6)
* Lisa M. Lindqvist, Walter and Eliza Hall Institute of Medical Research, Australia
Bcl-2, Bcl-xL and Mcl-1 Are Not Major Regulators of Autophagy

Juliane C. Campos, University of Sao Paulo, Brazil
Disrupted Mitochondrial Dynamics and Impaired Autophagy in Heart Failure: Impact of Exercise Training

Isabella Caniggia, Lunenfeld-Tanenbaum Research Institute, Canada
Disruption of Sphingolipid Metabolism Augments Placental Autophagy

Kelly Sullivan, University of Colorado, USA
Mechanisms of p53-Dependent Cell Fate Choice

Aditya Murthy, Genentech, Inc., USA
A Crohn’s Disease Mutation in the Autophagy Gene Atg16L1 Facilitates its Caspase-Mediated Degradation

Gavin Clive Higgins, Baker IDI Heart and Diabetes Institute, Australia
Impaired Mitophagy Activity in Experimental Diabetic Nephropathy

Malle Kuum, University of Tartu, Estonia
Directed Laser Irradiation-Based Method to Study Selective Mitophagy in Neurons

Baris Bingol, Genentech, Inc., USA
DUBs Regulate the Parkin/PINK1 Mitophagy Pathway

Mitochondria as Signaling Platform (Q5)
* Andrew G. Dillin, University of California, Berkeley, USA
Mitochondrial Dynamics in Metabolic Adaptation

Zhijian “James” Chen, University of Texas Southwestern Medical Center, USA
The Mitochondrial Pathway of Antiviral Innate Immune Response

David C. Chan, California Institute of Technology, USA
Molecular Regulation of Mitochondrial Dynamics

Andrea Rasola, Università degli Studi di Padova, Italy
Short Talk: The Mitochondrial Chaperone TRAP1 and Neoplastic Transformation

"Deathomics“ (Q6)
* Matthew S. Boggo, Stanford University School of Medicine, USA
Jennie R. Lill, Genentech, Inc., USA
Caspase Substrate Discovery

James A. Wells, University of California, San Francisco, USA
Caspase Kinetics

Harris G. Fienberg, Stanford University, USA
Network Rewiring Is Critical for Non-Genetic Resistance to TRAIL

James A. Ciulow, Imperial College London, UK
Short Talk: Unravelling the Targets of Electrophilic Natural Products using Quantitative Activity-Based Chemical Proteomics

FRIDAY, FEBRUARY 21
Quality Control (Q5)
* Richard J. Youle, NINDS, National Institutes of Health, USA
Cole M. Haynes, University of Massachusetts Medical School, USA
Coordinating Repair and Regeneration of Defective Mitochondria via the UPRmt

Jared Rutter, University of Utah, USA
Functionalizing the Unannotated Mitochondrial Proteome

Dario C. Altieri, Wistar Institute, USA
Mitochondrial Chaperones

Koji Okamoto, Osaka University, Japan
Targeting Autophagy for Mitochondrial Clearance

Giovanni Bénard, INSERM, France
Short Talk: Mitochondrial Turnover and Energy Metabolism

Post-Translational Control of Cell Death (Q6)
* Andreas E. Strasser, Walter and Eliza Hall Institute of Medical Research, Australia
John Silke, Walter and Eliza Hall Institute of Medical Research, Australia
cIAPs and Sharpin Regulate TNF/MLKL Dependent Necroptotic Cell Death and Developments in Targeting this Axis in Disease

Henning Walczak, University College London, Cancer Institute, UK
New Traits of TRAIL in Cancer

Marion MacFarlane, MRC Toxicology Unit, UK
Death Receptor Mechanisms: The ‘FLIP’ Side of the DISC

Guy S. Salvesen, Sanford-Burnham Medical Research Institute, USA
Proteolytic Crosstalk in Cell Death and Survival

* Session Chair † Invited but not yet accepted     Program current as of April 25, 2019. Program subject to change. Meal formats are based on meeting venue. For the most up-to-date details, visit www.keystonesymposia.org/14Q5 and www.keystonesymposia.org/14Q6.
Yoshisasa Kaizuka, National Institute for Materials Science, Japan
Short Talk: Signal Protein Clusters in Plasma Membranes Involved in Death Signaling and Adaptive Immunity

Workshop 2: RIP3/Necroptosis (Q6)
*Kim Newton, Genentech, Inc., USA
Susana L. Orozco, University of Washington, USA
RIPK1 both Positively and Negatively Regulates RIPK3 Oligomerization and Necroptosis.
Carlos F. Lopez, Vanderbilt University, USA
Exploring how Cells Commit to Apoptotic or Necrotic Cell-Death
Francis Ka-Ming Chan, Duke University, USA
Necrotic and Non-Necrotic Functions of RIP3 in Injury-Induced Inflammation
Mordechay Gerlic, Sackler Faculty of Medicine, Tel Aviv University, Israel
RIPK1 Regulates Cell Death Driven Systemic Inflammation
Edward S. Mocarski, Emory University, USA
Small Molecule RIP3-Kinase Inhibitor-Induced Apoptosis

Stem Cells and Development (Q5)
*Luca Scorrano, University of Padova, Italy
Jahar Bhattacharya, College of Physicians & Surgeons, Columbia University, USA
Mitochondrial Transfer from Bone-Marrow-Derived Stromal Cells to Pulmonary Alveoli Protects Against Acute Lung Injury
Carla Koehler, University of California, Los Angeles, USA
Correcting Human Mitochondrial Mutations with Targeted RNA Import
Mireille Khacho, University of Ottawa, Canada
Short Talk: Mitochondrial Dynamics in the Regulation of Stem Cell Maintenance and Cell Fate Decisions
Alison M. Burkart, Joslin Diabetes Center, USA
Short Talk: Dissecting Relationships between Insulin Resistance and Mitochondrial Metabolism in Human iPS Cells
Konstanze F. Winkloher, Ruhr University Bochum, Germany
Short Talk: Talk Title to be Announced
Michael A. Frohman, Stony Brook University, USA
Roles for the Lipid-Signaling Enzymes MitoPLD and Lipin 1 in Mitochondrial Dynamics, piRNA Biogenesis, and Spermatogenesis

Death Meets Survival (Q6)
*Douglas R. Green, St. Jude Children’s Research Hospital, USA
Pamela M. Holland, Surface Oncology, USA
Death Receptor Agonists for Cancer: Which Is the Right TRAIL?
Marion C. Bonnet, INSERM U976-Hopital St-Louis, France
Death and Survival of Keratinocytes

Kim Newton, Genentech, Inc., USA
Death by Kinases RIP1 and RIP3
Ben A. Croker, Boston Children's Hospital, USA
Short Talk: Fas Controls Neutrophil Lifespan during Viral Infection and is Negatively Regulated by TLR and IL-18 Signaling

Poster Session 3

SATURDAY, FEBRUARY 22

Environmental Control of Mitochondrial Physiology (Q5)
Andrew G. Dillin, University of California, Berkeley, USA
The Conserved Histone Lysine Demethylase PHF8 Regulates Mitochondrial ETC-Mediated Longevity
*Lluis Fajas, Université de L’Aix-Marseille, France
Participation of CDK4 in the Regulation of Mitochondrial Metabolism and Energy Homeostasis
Erika L. Pearce, Max Planck Institute of Immunobiology and Epigenetics, Germany
Lipid Metabolism, Mitochondria, and Memory T Cell Generation
Christian Frezza, Hutchison/MRC Research Centre, UK
Altered Mitochondrial Metabolism in Cancer
Sameer Kulkarni, Nestlé Institute of Health Sciences SA, Switzerland
Short Talk: Impact of Liver-Specific Deletion of Mfn1 and Mfn2 in Metabolic Health

Leveraging Model Organisms (Q6)
*Marion MacFarlane, MRC Toxicology Unit, UK
Eli Arama, Weizmann Institute of Science, Israel
A Mitochondrial-Based Rate-Limiting Mechanism for Caspase Activation during Sperm Differentiation in Drosophila
Hyung Don Ryoo, New York University Langone Medical Center, USA
Regulating the Subcellular Distribution of a Pro-Apoptotic Protein, Hid
Kim McCall, Boston University, USA
Non-Apoptotic Cell Death in Drosophila Oogenesis
Eric H. Baehrecke, University of Massachusetts Medical School, USA
Regulation and Function of Autophagy during Cell Death
Keren Yacobi Sharon, Weizmann Institute of Science, Israel
Short Talk: Germ Cell Death: A Physiological Alternative Cell Death Pathway in Drosophila
Barbara Conradt, Ludwig-Maximilians-Universitat, Germany
Short Talk: C. elegans CED-3 Caspase Regulates Centrosome Asymmetry in an Apoptotic Death

Workshop 2: Emerging Topics in Mitochondrial Dynamics and Physiology (Q5)
*Cole M. Haynes, University of Massachusetts Medical School, USA
Mariusz Karbowski, Amgen Inc, USA
MARCH5-Dependent Regulation of the OMM-Associated Degradation (OMMAD) Pathway and Mitochondrial Steps in Apoptosis

Adam L. Hughes, University of Utah, USA
An Autophagy-Dependent Pathway for Removal of Individual Proteins from Dysfunctional Mitochondria

Noriyuki Matsuda, Tokyo Metropolitan Institute of Medical Science, Japan
Identification of the Genuine Substrate of PINK1 that Activates Parkin

Christof Osman, University of California, San Francisco, USA
Live-Cell Microscopy of Mitochondrial DNA Suggests a Mechanism for its Inheritance and Distribution

A. Phillip West, Yale University School of Medicine, USA
Altered Mitochondrial DNA Dynamics Elicits a Cell-Intrinsic Antiviral Signaling Program

Atsushi Tanaka, Yamagata University, Japan
Mechanisms and Process of Mitochondrial Collapse in Autophagy-Deficient Mice

Brian Alexander Roelofs, University of Maryland Baltimore, USA
Npl4 Is Required for p97 to Perform Mitochondrial Quality Control Functions

Mitochondria in Tissue Homeostasis (Q5)
Jared Rutter, University of Utah, USA
Posttranscriptional Regulation of Mitochondrial Gene Expression

Rodrique Rossignol, University of Bordeaux, France
Oncogenic RAS Inhibits the LKB1-AMPK Axis and Repatterns Energy Metabolism

Ralph J. DeBerardinis, University of Texas Southwestern Medical Center, USA
Mitochondrial Metabolism in Cancer

Dongryeol Ryu, Pusan National University, South Korea
Short Talk: SIRT7 Regulates Mitochondrial Homeostasis via the Deacetylation and Activation of GABPbeta1

Systems Biology and Death Imaging (Q6)
Guy S. Salvesen, Sanford-Burnham Medical Research Institute, USA
Measuring and Modeling Receptor Mediated Cell Death

Peter Sorger, Harvard Medical School, USA
Measuring and Modeling Receptor Mediated Cell Death

Jessie Ochoa, University of California, Santa Cruz, USA
Short Talk: Cytological Profiling of Natural Products to Identify Modes of Action

Sally A. Kornbluth, Duke University Medical Center, USA
Control of Caspase 2 Activation

Pascal Meier, Institute of Cancer Research, UK
Regulation of the Ubiquitin E3 Ligase cIAP1

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