

Save the Date for the 2014
Keystone Symposia meeting on:
**The Chemistry and
Biology of Cell Death**

February 18–23, 2014

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

Scientific Organizers: Guy S. Salvesen, Matthew S. Bogoy and Jennie R. Lill
joint with the meeting on “Mitochondrial Dynamics and Physiology”

The conference will:

- Address the normal regulation and pathogenic dysfunction of distinct cell death modalities, discuss new modalities for therapeutic intervention and highlight chemical biology efforts that are leading to a better understanding of the role that cell death plays in health and disease
- Couple the breadth of chemical biology with the genetic analysis of cell death pathways in model organisms in order to reveal tractable therapeutic targets;
- Provide enhanced opportunities for interdisciplinary collaboration through the joint pairing with the meeting on “Mitochondrial Dynamics and Physiology,” which will share a keynote address and plenary session with this meeting.



Discounted Abstract Deadline: **October 17, 2013**

Student/Postdoc Scholarship Application Deadline: **October 17, 2013**

Abstract Deadline: **November 21, 2013**

Discounted Registration Deadline: **December 17, 2013**

For more information and to view the full program,
visit www.keystonesymposia.org/14Q6

KEYSTONE  **SYMPOSIA**[™]
on Molecular and Cellular Biology
Accelerating Life Science Discovery

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

The Chemistry and Biology of Cell Death (Q6)

Scientific Organizers: Guy S. Salvesen, Matthew S. Bogyo and Jennie R. Lill

Sponsored by Genentech, Inc. and Infinity Pharmaceuticals, Inc.

Mitochondrial Dynamics and Physiology (Q5)

Scientific Organizers: Rodrigue Rossignol and Heidi M. McBride

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TUESDAY, FEBRUARY 18

Arrival and Registration

WEDNESDAY, FEBRUARY 19

Keynote Session (Joint)

***Guy S. Salvesen**, Sanford-Burnham Medical Research Institute, USA

***Rodrigue Rossignol**, University of Bordeaux, France

Vishva M. Dixit, Genentech, Inc., USA

Signaling Lessons from Death Receptors: The Inflammasome and Beyond

Jodi Nunnari, University of California, Davis, USA

The Behavior of Mitochondria

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

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
Apoptotic 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

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

Poster Session 1

THURSDAY, FEBRUARY 20

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. Bogyo, 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

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

Poster Session 2

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

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Juliane Cruz Campos, Cedars-Sinai Medical Center, USA
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

Workshop 1: Mitochondrial Research and Drug Discovery (Q5)

***Thomas Langer**, CECAD Research Center, Germany

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
Bornavirus X Protein: A New Tool Against Neurodegenerative Disorders?

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

Erin Quan Toyama, The Salk Institute for Biological Studies, USA
Identification of MFF as a Direct Substrate for AMPK

"Deathomics" (Q6)

***Matthew S. Bogyo**, 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. Clulow, Imperial College London, UK
Short Talk: Unravelling the Targets of Electrophilic Natural Products using Quantitative Activity-Based Chemical Proteomics

Mitochondria as Signaling Platform (Q5)

***Andrew G. Dillin**, University of California, Berkeley, USA

Marcia C. Haigis, Harvard Medical School, 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

FRIDAY, FEBRUARY 21

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

Yoshihisa Kaizuka, National Institute for Materials Science, Japan
Short Talk: Signal Protein Clusters in Plasma Membranes Involved in Death Signaling and Adaptive Immunity

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 UPR^{mt}

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

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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, University of Massachusetts Medical School, 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

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

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. Winklhofer, Physiological Chemistry, 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

Poster Session 3

SATURDAY, FEBRUARY 22

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-Universität, Germany
Short Talk: C. elegans CED-3 Caspase Regulates Centrosome Asymmetry in an Apoptotic Death

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 Lausanne, Switzerland
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

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

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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

Systems Biology and Death Imaging (Q6)

***Guy S. Salvesen**, Sanford-Burnham Medical Research Institute, USA

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

Mitochondria in Tissue Homeostasis (Q5)

***Jared Rutter**, University of Utah, USA

Eric A. Shoubridge, McGill University, Canada

Posttranscriptional Regulation of Mitochondrial Gene Expression

Rodrigue 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, École Polytechnique Fédérale de Lausanne, Switzerland

Short Talk: SIRT7 Regulates Mitochondrial Homeostasis via the Deacetylation and Activation of GABPbeta1

SUNDAY, FEBRUARY 23

Departure