

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](http://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

February 18-23, 2014 • Santa Fe Community Convention Center • Santa Fe, New Mexico, USA

Sponsored by Nestlé Institute of Health Sciences

Abstract & Scholarship Deadline: October 17, 2013 / Abstract Deadline: November 21, 2013 / Discounted Registration Deadline: December 17, 2013

### 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, University of Toronto, 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, Göttingen University Medical School, Germany

*Biogenesis of Mitochondrial Membrane Protein Complexes*

Victoria L. Hewitt, Monash University, Australia

*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. Scream, Children's Hospital of Eastern Ontario Research

Institute, Canada

*Short Talk: Genome-Wide RNAi Screen Identifies ROMO1 as an*

*Essential Redox-Dependent Regulator of Mitochondrial Dynamics*

Poster Session 2

# 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

February 18-23, 2014 • Santa Fe Community Convention Center • Santa Fe, New Mexico, USA

Sponsored by Nestlé Institute of Health Sciences

Abstract & Scholarship Deadline: October 17, 2013 / Abstract Deadline: November 21, 2013 / Discounted Registration Deadline: December 17, 2013

### Workshop 1: Autophagy and Mitophagy (Q6)

\*Lisa Lindqvist, Walter and Eliza Hall Institute of Medical Research, Australia

*Bcl-2, Bcl-xL and Mcl-1 Are Not Major Regulators of Autophagy*

Juliane Cruz Campos, Institute of Biomedical Sciences, 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*

### 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, Katholieke Universiteit Leuven, Belgium

*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, HHMI/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

*clAPs 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, Memorial Sloan-Kettering Cancer Center, USA

*Coordinating Repair and Regeneration of Defective Mitochondria via the UPRmt*

Jared Rutter, University of Utah, USA

*Functionalizing the Unannotated Mitochondrial Proteome*

# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

## The Chemistry and Biology of Cell Death (Q6)

Scientific Organizers: Guy S. Salvesen, Matthew S. Bogoy 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

February 18-23, 2014 • Santa Fe Community Convention Center • Santa Fe, New Mexico, USA

Sponsored by Nestlé Institute of Health Sciences

Abstract & Scholarship Deadline: October 17, 2013 / Abstract Deadline: November 21, 2013 / Discounted Registration Deadline: December 17, 2013

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*

### Workshop 2: RIP3/Necroptosis (Q6)

\*Kim Newton, Genentech, 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, Amgen Inc., 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, 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, Washington University School of Medicine, USA  
*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*

# 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

February 18-23, 2014 • Santa Fe Community Convention Center • Santa Fe, New Mexico, USA

*Sponsored by Nestlé Institute of Health Sciences*

*Abstract & Scholarship Deadline: October 17, 2013 / Abstract Deadline: November 21, 2013 / Discounted Registration Deadline: December 17, 2013*

### Workshop 2: Emerging Topics in Mitochondrial Dynamics and Physiology (Q5)

\*Cole M. Haynes, Memorial Sloan-Kettering Cancer Center, USA

Mariusz Karbowski, University of Maryland School of Medicine, USA  
*MARCH5-Dependent Regulation of the OMM-Associated Degradation (OMMAD) Pathway and Mitochondrial Steps in Apoptosis*

Adam L. Hughes, Fred Hutchinson Cancer Research Center, 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 Federale de Lausanne, Switzerland

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

SUNDAY, FEBRUARY 23

Departure