

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

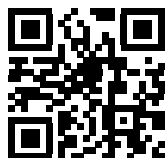
**February 18–23, 2014**

**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

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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<sub>mt</sub>*

**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