

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Mitochondrial Biochemistry in Health and Disease (Z1)

Scientific Organizers: Dave Pagliarini, Benjamin Tu and Alice Y. Ting

Supported by the Directors' Fund

Adaptive ROS Signaling in Physiology and Disease (Z2)

Scientific Organizers: Michael Ristow, Navdeep S. Chandel, Marcia C. Haigis and Yvonne M. Janssen-Heininger

May 17-21, 2020 • Whistler Conference Centre • Whistler, BC, Canada

Supported by the Directors' Fund

Abstract & Scholarship Deadline: January 21, 2020 / Abstract Deadline: February 19, 2020 / Discounted Registration Deadline: March 18, 2020

SUNDAY, MAY 17

Arrival and Registration

MONDAY, MAY 18

Welcome and Keynote Address (Z1)

Vamsi K. Mootha, Massachusetts General Hospital, USA
Mitochondrial Systems Biology

Welcome and Keynote Address (Z2)

Sue-Goo Rhee, Ewha Womans University, South Korea
ROS Signaling: The Early Days

Systems Approaches to Mitochondrial Biology (Z1)

Joshua D. Rabinowitz, Princeton University, USA
Mitochondrial Metabolomics

Effie Tozzo, Mitobridge, Inc., USA
Developing Novel Small Molecule Therapeutics to Improve Mitochondrial Function

Dave Pagliarini, Morgridge Institute for Research at University of Wisconsin-Madison, USA
Defining Mitochondrial Protein Function through Systems Biochemistry

Short Talks Chosen from Abstracts

Evolution of ROS Signaling (Z2)

Helmut Sies, Universitätsklinikum Düsseldorf, Germany
Oxidative Stress: Eustress and Distress

Gerald S. Shadel, The Salk Institute for Biological Studies, USA
Adaptive Mitochondrial ROS Signaling - From Yeast to Mice

Navdeep S. Chandel, Northwestern University, USA
Signaling Targets of Mitochondrial ROS

Short Talks Chosen from Abstracts

Workshop: Methods to Quantify ROS and Redox-States (Z2)

Bryan C. Dickinson, University of Chicago, USA

Tobias P. Dick, German Cancer Research Center, Germany
Genetically Encoded Redox Probes

Stress-Responsive Quality Control (Joint)

Cynthia Kenyon, Calico, USA
Mitochondria in Aging and Longevity

Heidi M. McBride, McGill University, Canada
Redox Regulation of Mitochondrial Remodeling

Cole M. Haynes, University of Massachusetts Medical School, USA
Mitochondrial Unfolded Protein Response (mtUPR)

Short Talks Chosen from Abstracts

Poster Session 1

TUESDAY, MAY 19

Mitochondrial Translation (Z1)

Speaker to be Announced

L. Stirling Churchman, Harvard Medical School, USA
Coordination of Mitochondrial and Cytosolic Translation

Alice Y. Ting, Stanford University, USA
Methods to Discover Proteins and RNA at the Outer Mitochondrial Membrane

Tao Pan, University of Chicago, USA
Mitochondrial tRNA Biology

Short Talks Chosen from Abstracts

Physiological Effects of ROS Signals (Z2)

Michael P. Murphy, University of Cambridge, UK
Sources and Modulators of Mitochondrial ROS

Eric M. Verdin, Buck Institute for Research on Aging, USA
Mitochondrial Protein Acylation

Philipp Gut, Nestlé Institute of Health Sciences, Switzerland
Autophagy and Oxidative Damage Removal

Michael Ristow, Swiss Federal Institute of Technology Zurich - ETH, Switzerland

Redox Redulation of Metabolic Diseases and Aging

Short Talks Chosen from Abstracts

Mitochondrial Signaling and Regulation (Z1)

Jan A.M. Smeitink, Radboud University Nijmegen Medical Centre, Netherlands
Mitochondrial Medicine

Valentina Perissi, Boston University School of Medicine, USA
Metabolic Adaptation via Mitochondria Retrograde Signaling

Mike Ryan, Monash University, Australia
Regulated Assembly of Complex I

Short Talks Chosen from Abstracts

(Seleno-) Cysteines as ROS Relays (Z2)

Kate Carroll, The Scripps Research Institute, USA
Cysteine Modifications and ROS Sensing

Tobias P. Dick, German Cancer Research Center, Germany
Redox Relays in Metabolic Regulation

Vadim Gladyshev, Brigham & Women's Hospital, USA
Selenocysteine-Mediated ROS Signaling

Short Talks Chosen from Abstracts

Poster Session 2

WEDNESDAY, MAY 20

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Retrograde Signaling (Joint)

Marcia C. Haigis, Harvard Medical School, USA

Mitochondrial Signaling in the Tumor Microenvironment

Edward K. Owusu-Ansah, Columbia University, USA

Mitochondrial Complex I Activity and Stem Cell Differentiation

Agnieszka Chacinska, International Institute of Molecular and Cell Biology in Warsaw, Poland

Redox Regulation of Protein Translocation

Bryan C. Dickinson, University of Chicago, USA

Lipid Signaling in Mitochondria

Short Talks Chosen from Abstracts

Mitochondrial Metabolism (Z1)

Benjamin Tu, University of Texas Southwestern Medical Center, USA

Mitochondrial Redox Signaling

Yasemin Sancak, University of Washington, USA

Mitochondrial Calcium Signaling

Hongying Shen, Massachusetts General Hospital/Harvard Medical School, USA

Solving the Puzzles in Mitochondrial Metabolism

Short Talks Chosen from Abstracts

ROS and Aging (Z2)

T. Keith Blackwell, Joslin Diabetes Center and Harvard Medical School, USA

Transcriptional Stress Response Signaling

Siegfried Hekimi, McGill University, Canada

Targets of Pro-Longevity ROS Reveal an Unexpected Program of Gene Expression that Slows Down Aging

Doris Germain, Icahn of Medicine at Mount Sinai, USA

Mitohormesis Regulates Cancer Metastasis

Short Talks Chosen from Abstracts

Poster Session 3

THURSDAY, MAY 21

Mitochondrial Biogenesis (Z1)

Toshiya Endo, Kyoto Sangyo University, Japan

Assembly of Mitochondria from Proteins and Lipids

Maulik Patel, Vanderbilt University, USA

Conflicts Involving mtDNA

Matthew Sieber, University of Texas Southwestern Medical Center, USA

Electron Transport Chain Remodeling in Oogenesis

Short Talks Chosen from Abstracts

Redox Control of Cancer and Malignant Growth (Z2)

Tak W. Mak, Campbell Family Institute for Breast Cancer, Canada
Targeting ROS for Cancer Therapy

Marcus Conrad, Helmholtz Zentrum München, Germany
Ferroptosis

Guido Kroemer, Cordeliers Research Center, France
Organelle-Specific Oxidative Stress: Adaptive versus Lethal Signaling

Karen H. Vousden, Francis Crick Institute, UK
Roles of ROS in Cancer Development and Progression

Short Talks Chosen from Abstracts

Redox Control of Growth and Differentiation (Z2)

Ruma Banerjee, University of Michigan, USA
Redox Biochemistry of Hydrogen Sulfide (H₂S)

Yimon Aye, École polytechnique fédérale de Lausanne, Switzerland
Signaling in Our Blood: Illuminating Atypical Stress Response in Neutrophils

Yvonne M. Janssen-Heininger, University of Vermont, USA
Glutathionylation of Proteins as a Redox Signal

Short Talk Chosen from Abstracts

Mitochondrial Dynamics, Trafficking, and Interorganellar Contacts (Z1)

Thomas L. Schwarz, Children's Hospital Boston and Harvard Medical School, USA

Moving and Removing Neuronal Mitochondria

Jennifer A. Lippincott-Schwartz, Howard Hughes Medical Institute - Janelia Farm, USA

Imaging Mitochondrial Dynamics and Interorganellar Interactions

David C. Chan, California Institute of Technology, USA
Mitochondrial Dynamics in Tissue Physiology

Maya B. Schuldiner, Weizmann Institute of Science, Israel
Mitochondrial Interorganellar Contacts

Short Talk Chosen from Abstracts

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (Z1)

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (Z2)

FRIDAY, MAY 22

Departure