KEYSTONE SYMPOSIA
on Molecular and Cellular Biology

Hypoxia: Molecules, Mechanisms and Disease (A3)

January 19-23, 2020 • Keystone Resort • Keystone, CO, USA

Scientific Organizers: José López-Barneo, Sarah R. Walmsley, Hesham A. Sadek and Jacques Pouysségur

Sponsored by Akebia Therapeutics and Bio-Techne

Discounted Abstract & Scholarship Deadline: September 25, 2019 / Abstract Deadline: October 16, 2019 / Discounted Registration Deadline: November 19, 2019

SUNDAY, JANUARY 19

Arrival and Registration

MONDAY, JANUARY 20

Keynote Address

Randall S. Johnson, University of Cambridge, UK
Hypoxia: New Views on Adaptation, Pathogenesis and Therapeutics

Hypoxia Signaling: Acute Oxygen Sensing

José López-Barneo, University of Seville, Spain
Acute Oxygen Sensing by Arterial Chemoreceptors: A Mix of Metabolism, Mitochondrial Signaling and Ion Channels

Alexander Gourine, University College London, UK
Acute Oxygen Sensing in the Brain

Natascha Sommer, Justus Liebig University, Germany
Oxygen Sensing in the Lung Vasculature: Role in Pulmonary Hypertension

Short Talks Chosen from Abstracts

Pathophysiology of Hypoxia and Ischemia

Thomas Park, University of Illinois at Chicago, USA
Mechanisms of Extreme Tolerance to Anoxia in the African Naked Mole-Rat

Silvia V. Conde, CEDOC- Centro de Estudos de Doenças Crónicas, Portugal
Novel Therapies in Carotid Body-Mediated Sympathetic Over-Activation Syndromes

Jennifer V.F. Potter, University of Virginia, USA
Pharmacology of Peripheral and Central Chemoreceptors: The Respiratory Depression and Opioid Epidemics

Short Talks Chosen from Abstracts

Poster Session 1

TUESDAY, JANUARY 21

Special Session: Tribute to William G. Kaelin, Peter J. Ratcliffe and Gregg L. Semenza (2019 Nobel Laureates)

Hypoxia Signaling: Hydroxylases and the Hypoxia Inducible Factors

Peter J. Ratcliffe, University of Oxford, UK
Regulation of the PHD/HIF Hypoxic Response

Joseph A. Garcia, Columbia University Medical Center, USA
An Acetate Switch Links Dynamic Changes in Intermediary Metabolism with Stress Signaling by HIF-2 in Mammals

William G. Kaelin, Jr., Dana-Farber Cancer Institute, USA
New Therapeutic Strategies Based on the Functions of the VHL Tumor Suppressor and HIF

Erquan Zhang, National Institute of Biological Sciences, China
Towards Understanding the Mutual Regulation of Hypoxia Signaling and the Circadian Clock

Short Talks Chosen from Abstracts

Workshop 1

Short Talks Chosen from Abstracts

Redox Signaling in Hypoxia Responses

Paul T. Schumacker, Northwestern University, USA
Role of Mitochondria in Regulation of Cell Stress Responses

Vamsi K. Mootha, Massachusetts General Hospital, USA
Hypoxia in Mitochondrial Disease

Agnes Görlach, German Heart Center Munich, TU Munich, Germany
Hypoxia and ROS Crosstalk in Programming of Cardiovascular Diseases

Short Talks Chosen from Abstracts

Celebratory Toast to Nobel Prize

Poster Session 2

WEDNESDAY, JANUARY 22

Hypoxia and Cancer

Gregg L. Semenza, Johns Hopkins University School of Medicine, USA
HIFs: Executors of the Lethal Cancer Phenotype

Fatima Mechta-Grigoriou, Curie Research Institute, France
Role of Chronic Oxidative Stress in Cancer Development

Jacques Pouysségur, University of Nice, France
Exploiting Acidic, Nutrient and Oxidative Stresses in Hypoxic Tumors

Silvia Pastorekova, Biomedical Research Center, Slovak Academy of Sciences, Slovakia
Hypoxia-Induced Carbonic Anhydrase IX: Contribution to Cancer Hallmarks and Clinical Prospects

Short Talks Chosen from Abstracts

Workshop 2

Short Talks Chosen from Abstracts

New Trends and Techniques in Hypoxia Research

Joel A. Spencer, University of California Merced, USA
Direct Oxygen Sensing in the Bone Marrow by Two-photon Phosphorescence Lifetime Quenching

Sonia Rocha, University of Liverpool, UK
Chromatin Senses Oxygen Changes

Elaine Pinheiro, Merck Research Laboratories, USA
HIF 2alpha Inhibitors: Applications and Current Clinical Trials

Short Talks Chosen from Abstracts

Poster Session 3

THURSDAY, JANUARY 23

Hypoxia in Stem Cells, Cell Reprogramming, and Regeneration

Yoshinori Yoshida, Center for iPS Cell Research and Application, Kyoto University, Japan
Hypoxia in Cell Reprogramming and Differentiation

Michaela Frye, Deutsches Krebsforschungszentrum, Germany
Post-Transcriptional Modifications in Development and Stem Cells

Hesham A. Sadek, University of Texas Southwestern Medical Center, USA
Role of Hypoxia in Cardiac Regeneration

Silvia Martin-Puig, Fundación Centro Nacional de Investigaciones Cardiovasculares, Spain
Hypoxia, Cardiac Development and Disease

Short Talks Chosen from Abstracts

Hypoxia and Inflammation

Sarah R. Walmsley, University of Edinburgh, Queen's Medical Research Institute, UK
Hypoxic Reprogramming of Neutrophil Metabolism

Cormac Taylor, University College Dublin, Ireland
Hypoxia, Immunity and Inflammation

Alberto Pascual, Instituto de Biomedicina de Sevilla, Spain
Hypoxia, Microglia, and Endothelial Cells in Alzheimer's Disease Pathogenesis

Short Talk Chosen from Abstracts

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

FRIDAY, JANUARY 24

Departure