REGULATION AND FUNCTION OF SMALL GTPases
June 11-16, 2017
West Palm Beach, Florida

Organizers:
Carol L. Williams
Medical College of Wisconsin
Milwaukee, WI, USA

Angeliki Malliri
Cancer Research UK Manchester Institute
Manchester, UK

Sunday, June 11, 2017

4:00 PM – 9:00 PM   Conference Registration
6:00 PM – 7:00 PM   Welcome Reception
7:00 PM – 8:00 PM   Dinner
8:00 PM – 9:30 PM   Plenary Session
Allan Balmain, UCSF Helen Diller Comprehensive Cancer Center, San Francisco, CA
“Target Genes and Target Cells in Mouse Models of Skin Cancer”

Monday, June 12, 2017

7:30 AM – 12:30 PM   Conference Registration
7:30 AM – 9:00 AM   Breakfast
9:00 AM – 12:30 PM  Session 1: Small GTPases in Cancer, Part I
Chair: John Hancock, University of Texas Health Science Center, Houston, TX

9:00 AM – 9:15 AM  Welcome from FASEB and Organizers

9:15 AM – 9:45 AM  Dafna Bar-Sagi, New York University School of Medicine, NY
Bioenergetic Metabolism in Pancreatic Cancer

9:45 AM – 10:15 AM  Martin Bergo, Karolinska Institute, Huddinge, Sweden
Regulation of Redox Signaling and Small GTPases in Cancer

10:15 AM – 10:30 AM  Robert L. Kortum, Uniformed Services University of the Health Sciences, Bethesda, MD
Hierarchical Requirement for PI3K Signaling in RAS Isoform-Driven Transformation is Revealed by Sos2 Deletion

10:30 AM – 11:00 AM  FASEB-Sponsored Coffee Break

11:00 AM – 11:30 AM  Alan Fields, Mayo Clinic, Jacksonville, FL
Oncogenic Ect2 Signaling in Lung Tumorigenesis

11:30 AM – 12:00 PM  Carol L. Williams, Medical College of Wisconsin, Milwaukee, WI
Oncogenic Functions of SmgGDS Beyond its Regulation of Small GTPase Prenylation and Trafficking

12:00 PM – 12:15 PM  Jeffrey A. Frost, University of Texas Health Science Center, Houston, TX
The RhoA Subfamily GEF Net1 is Required for Mammary Gland Tumorigenesis and Metastasis

12:15 PM – 12:30 PM  Sinisa Dovat, Pennsylvania State University College of Medicine, Hershey, PA
Regulation of CDC42 Transcription by Ikaros Tumor Suppressor in B-cell Acute Lymphoblastic Leukemia

12:30 PM – 1:45 PM  Lunch and Meet the Experts Session

1:45 PM – 4:00 PM  Free Time

4:00 PM – 6:00 PM  Poster Session 1

6:00 PM – 7:00 PM  Dinner

7:00 PM – 9:45 PM  Session 2: Therapeutic Targeting of Small GTPases
Chair: Channing Der, University of North Carolina, Chapel Hill, NC
7:00 PM – 7:30 PM  Channing Der, University of North Carolina, Chapel Hill, NC  
_Drugging Undruggable RAS for Cancer Treatment: Is MYC the Answer?_

7:30 PM – 8:00 PM  Alemayehu Gorfe, University of Texas Health Science Center, Houston, TX  
_Targeting K-Ras: How Simple Concepts and Protein Motion Can Lead to Initial Drug Leads_

8:00 PM – 8:15 PM  Daniel Abankwa, Åbo Akademi University, Turku, Finland  
_Do Rapalogs Inadvertently Increase Cancer Cell Stemness? – Ras Isoform-Specific Feedback Loops from the mTor-Pathway_

8:15 PM – 8:30 PM  Break

8:30 PM – 9:00 PM  Julian Downward, Francis Crick Institute, London, England  
_Searching for Novel Therapeutic Approaches to RAS Mutant Cancers_

9:00 PM – 9:30 PM  Paul Timpson, Garvan Institute of Medical Research, Sydney, Australia  
_Transient Tissue Priming via ROCK Inhibition Uncouples Pancreatic Cancer Progression, Sensitivity to Chemotherapy, and Metastasis_

9:30 PM – 9:45 PM  John P. O’Bryan, University of Illinois, Chicago, IL  
_Inhibition of RAS Function Through Targeting an Allosteric Regulatory Site_

**Tuesday, June 13, 2017**

7:30 AM – 12:30 PM  Conference Registration

7:30 AM – 9:00 AM  Breakfast

9:00 AM – 9:30 AM  Anne Ridley, King’s College London, London, England  
_Roles of Rho GTPases in Cell Adhesion and Migration_

9:30 AM – 10:00 AM  Angeliki Malliri, Cancer Research UK Manchester Institute, Manchester, England  
_Regulation of Migration by the Tiam Family of Rac GEFs_
10:00 AM – 10:15 AM  Johanna Lilja, University of Turku, Turku, Finland
*SHANK Proteins Limit Integrin Activation by Directly Interacting with Rap1 and R-Ras*

10:15 AM – 10:45 AM  Group Photo and FASEB-Sponsored Coffee Break

10:45 AM – 11:15 AM  Laura Machesky, Cancer Research UK Beatson Institute, Glasgow, Scotland
*Actin Nucleation Driving Migration, Invasion, and Metastasis*

11:15 AM – 11:45 AM  Narasimhan Gautam, Washington University, St. Louis, MO
*Using Optogenetics to Examine RhoA and Cdc42 in Cell Migration*

11:45 AM – 12:15 PM  Maria Balda, University College London, London, England
*Multiple Roles of Small Rho GTPases in Tight Junction Functions*

12:15 PM – 12:30 PM  Andrew M. Chan, The Chinese University of Hong Kong, Shatin, Hong Kong
*R-Ras is Required for T Cell Trafficking in High Endothelial Venules and Mediates Chemokine-Induced Adhesion to Intercellular Adhesion Molecule-1*

12:30 PM – 1:30 PM  Lunch and Meet the Experts Session

1:30 PM – 5:30 PM  Free Time / Optional Group Activity at John D. MacArthur Beach State Park (http://www.macarthurbeach.org/)

6:00 PM – 7:00 PM  Dinner

**7:00 PM – 9:30 PM**  
**Session 4: Small GTPases and their Partners in Physiological and Pathophysiological Processes**
Chair: Sharon Campbell, University of North Carolina, Chapel Hill, NC

7:00 PM – 7:30 PM  Vania Braga, Imperial College London, London, England
*The Scaffolding Protein Ajuba Regulates Rac1 Activity in Epithelia via a Dual Mechanism*

7:30 PM – 8:00 PM  Linda Van Aelst, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY
*Rho Regulators in Neuronal Development and Associated Disorders*

8:00 PM – 8:15 PM  Ian A. Prior, University of Liverpool, Liverpool, England
*Endogenous Ras Isoforms Exhibit Differential and Context-Dependent Coupling to Effector Pathways*
8:15 PM – 8:30 PM  Break

8:30 PM – 9:00 PM  Karen Cichowski, Brigham and Women’s Hospital, Harvard Medical School, Boston, MA
RasGAPs as Tumor Suppressors

9:00 PM – 9:15 PM  Claire M. Wells, Kings College London, London, England
Cdc42 Expression is Dependent on RhoU Palmitoylation in a Background of FASN Depletion

9:15 PM – 9:30 PM  Sonja Vermeren, University of Edinburgh, Scotland
Immune Complex-Induced PI3K-Cdc42-Pak-Mek-Erk Signaling Promotes Apoptosis of Human Neutrophils

Wednesday, June 14, 2017

7:30 AM – 12:15 PM  Conference Registration

7:30 AM – 9:00 AM  Breakfast

9:00 AM – 12:15 PM  Session 5: Spatio-Temporal Control of Signaling and Small GTPases
Chair: Jonathan Chernoff, Fox Chase Cancer Center, Philadelphia, PA

9:00 AM – 9:30 AM  Orrin Stone, University of North Carolina, Chapel Hill, NC
Biosensors and Optogenetics for Rho GTPase Pathways in Living Cells

9:30 AM – 10:00 AM  Marino Zerial, Max Planck Institute, Dresden, Germany
Molecular Specificity and Mechanics in Membrane Tethering and Fusion

10:00 AM – 10:15 AM  Jan H. Reiling, BioMed X Innovation Center, Heidelberg, Germany
Cell Survival and Protein Secretion Associated with Golgi Integrity Controlled by ARF GTPases in Response to Golgi Stress-Inducing Agents

10:15 AM – 10:45 AM  FASEB-Sponsored Coffee Break

10:45 AM – 11:15 AM  Mark Philips, New York University School of Medicine, NY
Hexokinase on the Outer Mitochondrial Membrane is an Effector for KRAS4A
11:15 AM – 11:30 AM  
Dharini van der Hoeven, University of Texas Health Science Center, Houston, TX  
*Ceramide-Sphingomyelin Balance is an Important Regulator of K-Ras Function*

11:30 AM – 11:45 AM  
Xiaowei Gong, Karolinska Institutet, Huddinge, Sweden  
*RhoB Endosomal Recycling through KIF13A Governs Membrane Blebbing and Amoeboid Cell Migration*

11:45 AM – 12:15 PM  
Business Meeting

12:15 PM – 1:30 PM  
Lunch and Meet the Experts Session

1:30 PM – 2:30 PM  
Career Development Workshop; Afternoon Mentoring Session 1  
*Strategies for publication: quantity and quality*

2:30 PM – 4:00 PM  
Free Time

4:00 PM – 6:00 PM  
Poster Session 2

6:00 PM – 7:00 PM  
Dinner

7:00 PM – 7:30 PM  
Session 6: Compartmentalized Signaling by Small GTPases  
Chair: Jacqueline Cherfils, CNRS-Ecole Normale Superieure, Paris-Saclay, France  
*The K-Ras Plasma Membrane Anchor Encodes a Highly Specific Capacity for Lipid Sorting*

7:30 PM – 8:00 PM  
Rick Cerione, Cornell University, Ithaca, NY  
*The Emergence of Some Interesting Outcomes of Rho GTPase-Signaling*

8:00 PM – 8:15 PM  
Nicole Fehrenbacher, New York University School of Medicine, NY  
*The G-Protein Coupled Receptor GPR31 Promotes Membrane Association of K-Ras*

8:15 PM – 8:30 PM  
Break

8:30 PM – 9:00 PM  
Kimberley Tolias, Baylor College of Medicine, Houston, TX  
*Rho GTPase Signaling Controlling Neuronal Development and Plasticity*
9:00 PM – 9:15 PM  Mélanie Laurin, Rockefeller University, New York, NY
An In Vivo RNAi Screen Uncovers RhoGTPase Signaling Networks as Key Drivers of Hair Follicle Morphogenesis

Thursday, June 15, 2017

7:30 AM – 11:45 AM  Conference Registration

7:30 AM – 9:00 AM  Breakfast

9:00 AM – 11:45 AM  Session 7: Structural Modes of Regulation of Small GTPases
Chair: Mark Philips, New York University School of Medicine, NY

9:00 AM – 9:30 AM  Jacqueline Cherfils, CNRS-Ecole Normale Superieure, Paris-Saclay, France
Allosteric Regulation of GEFs as a Target for Inhibition

9:30 AM – 9:45 AM  Dhirendra Simanshu, Frederick National Laboratory for Cancer Research, Frederick, MD
Structures of Full-Length KRAS4b in Complex with PDEd Provide Atomic Details of the Hypervariable Region

9:45 AM – 10:00 AM  Shufen Cao, Case Western Reserve University, Cleveland, OH
Signaling Phospholipids Regulate the Membrane Association of Ras GTPases: Study by NMR, Computational Modeling, Biophysical Assays and Cell Experiments

10:00 AM – 10:30 AM  FASEB-Sponsored Coffee Break

10:30 AM – 11:00 AM  Darerca Owen, Cambridge University, Cambridge, England
Inhibition of Small G Protein Signalling Using Stabilized Peptides

11:00 AM – 11:30 AM  WWCR sponsored talk:
Xose Bustelo, University of Salamanca, Spain
Bivalent Roles of Vav Family Exchange Factors in Tumorigenesis

11:30 AM – 11:45 AM  Carla Mattos, Northeastern University, Boston, MA
Raf Promotes Dimerization of the Ras G-Domain

11:45 AM – 1:30 PM  Lunch and Meet the Experts Session
1:30 PM – 2:30 PM  Career Development Workshop; Afternoon Mentoring Session 2
Strategies for writing competitive grant applications

3:00 PM – 5:30 PM  Session 8: Small GTPases in Cancer, Part II
Chair: Carol L. Williams, Medical College of Wisconsin, Milwaukee, WI

3:00 PM – 3:30 PM  Adrienne Cox, University of North Carolina, Chapel Hill, NC
Beyond RAF-MEK-ERK: Identifying KRAS Functions and Targetable Effector Pathways in Pancreatic Cancer

3:30 PM – 4:00 PM  Jonathan Chernoff, Fox Chase Cancer Center, Philadelphia, PA
Suppression of RAC1P29S-Driven Malignant Melanoma by Group A PAK Inhibitors

4:00 PM – 4:15 PM  Rafael Garcia-Mata, University of Toledo, Toledo, OH
Regulation of Invadopodia Disassembly by RhoG

4:15 PM – 4:30 PM  Break

4:30 PM – 5:00 PM  Sharon Campbell, University of North Carolina, Chapel Hill, NC
Redox Regulation of Small GTPases: Therapeutic Opportunities

5:00 PM – 5:15 PM  Timothy D Martin, Harvard University Medical School, Boston, MA
Identifying KRAS Synthetic Lethal Relationships through CRISPR/Cas9-Mediated Genome Engineering and Genetic Screening

5:15 PM – 5:30 PM  Conference Summary

5:30 PM – 7:00 PM  Dinner

Friday, June 16, 2017

7:30 AM – 9:00 AM  Breakfast

7:30 AM – 9:00 AM  Departures