



FASEB

Federation of American Societies
for Experimental Biology

Science Research Conferences

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“Protein Lipidation: Enzymology, Signaling and Therapeutics”

July 16 – 21, 2017

Saxtons River, Vermont

Co-Organizers:

Rami Hannoush
Genentech
San Francisco, USA

Luke Chamberlain
University of Strathclyde
Glasgow, UK

Pat Casey
Duke University School of Medicine
Durham, USA

Anant Menon
Weill Cornell Medical College
New York, USA

Keynote / Plenary lecture is 50 min + 10 min discussion

Session talks are 25 min + 5 min discussion

Selected short talks are 15 min

Preliminary Schedule

Sunday, July 16, 2017

- 4:00PM – 9:00PM Conference Registration
- 6:00PM – 7:00PM FASEB Opening Reception
- 7:00PM – 8:00PM Dinner
- 8:00PM – 9:05PM Conference Keynote Lecture:
Gisou Van der Goot, École Polytechnique Fédérale de Lausanne, Switzerland
Role, Regulation and Dynamics of S-palmitoylation in the ER
Session Chair: Rami Hannoush

Monday, July 17, 2017

7:30AM – 9:00AM **Breakfast**

Session 1 **Structural insights into protein lipidation**

9:00AM – 12:15PM Session Chair: **Pat Casey**, Duke University School of Medicine

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

9:15AM - 9:45AM **Stephen Long**, Memorial Sloan Kettering Cancer Center, New York City
Mechanisms of regulation and structural biology of Icmt enzymes

9:45AM – 10:00AM **Frank Heinrich**, Carnegie Mellon
The structure of farnesylated KRas4B at the lipid membrane

10:00AM – 10:30AM **Anirban Banerjee**, NIH
Structural basis for substrate recognition by human DHHC17 palmitoyltransferase

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

11:00AM – 11:30AM **Rami Hannoush**, Genentech
Recognition of unsaturated fatty acids by Frizzled receptors

11:30AM – 12:00PM **Yvonne Jones**, University of Oxford, United Kingdom
Deacylation and the regulation of Wnt signaling

12:00PM – 12:15PM **Thierry Meinnel**, CEA, CNRS, Univ. Paris-Sud, Université Paris Saclay
Cracking the code of N-Myristoylation at structural and genome scales

12:30PM – 1:30PM **Lunch**

Session 2 **Mechanisms and inhibitors of protein lipidation enzymes**

2:00PM – 5:15PM Session Chair: **Maurine Linder**, Cornell University, Ithaca

2:00PM - 2:30PM **Luke Chamberlain**, University of Strathclyde, United Kingdom
Substrate selectivity in the zDHHC family of S-acyltransferases

2:30PM – 3:00PM **Robert Deschenes**, University of South Florida, Tampa
Mutations in X-Linked Intellectual Disability (XLID) gene alters the palmitoyltransferase activity and subcellular localization of zDHHC9

3:00PM – 3:15PM **Elizabeth Conibear**, University of British Columbia, Canada
Quality control of a palmitoylated membrane protein at the ER and Golgi

3:15PM – 4:00PM *Coffee Break*

4:00PM – 4:30PM **James Houglund**, Syracuse University, Syracuse, New York
For some proteins, eight is enough: Understanding and controlling ghrelin octanoylation by ghrelin O-acyltransferase

- 4:30PM – 5:00PM **Tony Magee**, Imperial College London, United Kingdom
Targeting Hedgehog lipidation
- 5:00PM – 5:15PM **Alison Ondrus**, California Institute of Technology, California
Endogenous sterols in Hedgehog signaling: From genes to molecules
- 6:00PM – 7:00PM** **Dinner**
- 7:15PM – 8:30PM **“Research snapshots”**: 2 min (1 slide) elevator pitches of data from posters/late breaking abstracts by students and postdoctoral fellows (Lecture Hall).
Session Chairs: **Luke Chamberlain** and **Rami Hannoush**
- 8:30PM – 9:35PM The Richard Gibbs Plenary Lecture:
Youla Tsantrizos, McGill University, Canada
Dysregulation of Isoprenoid Biosynthesis in Cancer Chemotherapy
Session Chair: **Mark Distefano**, University of Minnesota, Minnesota

Tuesday, July 18, 2017

7:30AM – 9:00AM **Breakfast**

Session 3 **Protein lipidation in the clinic**

9:00AM – 11:45AM Session Chair: **Mark Philips**, NYU, New York

9:00AM - 9:30AM **David Virshup**, Duke – NUS Medical School, Singapore
Regulation of Wnt signaling by protein palmitoylation

9:30AM – 10:00AM **George Kemble**, 3-V Biosciences, Menlo Park, California
Fatty acid synthase inhibitors - impact on lipogenesis and palmitoylation

10:00AM – 10:30AM *Group photo & FASEB Sponsored Coffee Break*

10:30AM – 11:00AM **Corey Strickland**, Merck, Kenilworth, New Jersey
Protein farnesyltransferase inhibitors: From oncology to progeria

11:00AM – 11:15AM **Susan Michaelis**, The Johns Hopkins School of Medicine
Prelamin A cleavage by ZMPSTE24 in a humanized yeast system: Analysis of cleavage site mutations and new ZMPSTE24 disease alleles

11:15AM - 11:45AM **Audrey Odom**, Washington University School of Medicine, St. Louis
Drug resistance reveals a new family of metabolic regulators in malaria parasites

12:00PM – 1:00PM **Lunch**

Free Afternoon

1:00PM – 4:00PM **Organized Sports Activity (Gym, basketball)**

Session 4 **Emerging targets and drug discovery approaches in protein lipidation**

4:00PM – 5:45PM Session Chair: **Carmela Giglione**, CNRS, France

- 4:00PM – 4:30PM **Janos Kodra**, Novo Nordisk, Denmark
Design and biological activity of a lipidated analogue of the calcitonin gene-related peptide
- 4:30PM – 5:00PM **Christian Cunningham**, Genentech, South San Francisco
Palmitoylation of TEAD transcription factors is required for their stability and function in Hippo pathway signaling
- 5:00PM – 5:15PM **Matthew J. Brody**, Cincinnati Children's Hospital Medical Center
S-Acylation at the Golgi regulates cardiac signaling and disease
- 5:15PM – 5:45PM **Luc Berthiaume**, University of Alberta, Canada
Myristoylation loss drives Wnt signaling and offers a new approach to treat cancer
- 6:00PM – 7:00PM** *Dinner*
- 7:30PM – 9:30PM **Poster Session 1 (Even-numbered posters)**
Evaluation committee: Anant Menon, Shernaz Bamji, Mark Distefano, James Hougland

Wednesday, July 19, 2017

7:30AM – 9:00AM *Breakfast*

Session 5 **Lipidation in membrane signaling and microdomains**

9:00AM – 12:00PM Session Chair: **Anant Menon**, Cornell University, Weil Medical College

9:00AM - 9:30AM **Frederick Maxfield**, Weill Cornell Medical School, New York
Role of STARD4 in Intracellular Cholesterol Transport

9:30AM – 10:00AM **Anant Menon**, Cornell University, Weil Medical College
ER-plasma membrane contact sites: Regulatory interfaces for integrating sterol and phospholipid homeostasis

10:00AM – 10:15AM **Angeline M. Lyon**, Purdue University
Regulation of Phospholipase C β Activity at the Membrane

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

10:45AM – 11:15AM **Mary Kraft**, University of Illinois at Urbana-Champaign, Urbana, Illinois
Lipid organization during influenza virus budding

11:15AM – 11:45PM **Paul Jenkins**, University of Michigan Medical School, Ann Arbor, MI
zDHHC5, and zDHHC8: Understanding the Role of Palmitoylation in Neuronal Ankyrin-G Localization and Function

11:45AM – 12:00PM **Jürgen Fritsch**, University of Kiel
Palmitoylation – Emerging roles in TNF-R1 endocytic trafficking and signaling

12:00PM – 1:00PM Lunch

Session 6 Lipid regulation of RAS signaling

2:00PM – 5:30PM Session Chair: **Ling Li**, University of Minnesota

2:00PM - 2:30PM **Mei Wang**, Duke-NUS Medical School
Investigating the role of isoprenylcysteine carboxylmethyltransferase (ICMT) in RAS driven tumorigenesis

2:30PM – 3:00PM **Channing Der**, University of North Carolina, Chapel Hill
KRAS and RHOA mutations in cancer: not just GTP

3:00PM – 3:15PM **Angela Jeong**, University of Minnesota
Dysregulation of Protein Prenylation and RAS/ERK Signaling in Alzheimer's Disease

3:15PM – 4:00PM *Coffee Break*

4:00PM – 4:30PM **Adrienne Cox**, University of North Carolina School of Medicine, Chapel Hill
Differential roles and functions of wild type RAS isoforms in the presence of mutant RAS

4:30PM – 5:00PM **Mark Philips**, NYU, New York
KRAS4A Regulates Hexokinase in a Palmitoylation-dependent Manner

5:00PM – 5:30PM **Mark Distefano**, University of Minnesota, Minnesota
Probing the prenylome using a combination of peptide libraries and metabolic labeling

6:00PM – 7:00PM Dinner

7:00PM – 8:00PM **"Meet the Expert"**: roundtable discussions for students/postdocs
Panel: Maurine Linder, Tony Magee, Luc Berthiaume, Carol Williams, Audrey Odom

7:30PM – 9:30PM **Poster Session 2 (Odd-numbered posters)**
Evaluation committee: Anant Menon, Shernaz Bamji, Mark Distefano, James Hougland

Thursday, July, 20, 2017

7:30AM – 9:00AM Breakfast

Session 7 Protein palmitoylation in neuronal signaling and physiology

9:00AM – 12:30PM Session Chair: **Robert Deschenes**, University of South Florida, Tampa

9:00AM – 9:30AM **Gareth Thomas**, Temple University
Palmitoylation-dependent control of developmental axon degeneration

9:30AM – 10:00AM **Shernaz Bamji**, University of British Columbia, Canada
The X-Linked Intellectual Disability Gene DHH9 and the Formation of Neural Circuits

- 10:00AM – 10:15AM **Dale Martin**, University of British Columbia
Reduced palmitoylation of the autophagy receptor p62/SQSTM1 in Huntington disease is increased by fasting
- 10:15AM – 10:45AM *FASEB Sponsored Coffee Break*
- 10:45AM – 11:15AM **Mike Shipston**, University of Edinburgh, United Kingdom
Canonical and non-canonical functions of zDHHCs determined by alternative pre mRNA splicing
- 11:15AM – 11:45PM **Will Fuller**, University of Dundee, United Kingdom
Specifically targeting DHHC-substrate interactions for therapeutic gain in the heart
- 11:45PM – 12:00PM **Keyong Du**, Tufts Medical Center
Regulation of cell metabolism by DHHC proteins
- 12:00PM – 12:30PM **Business Meeting**
- 12:30PM – 1:30PM **Lunch**
- Free Afternoon**
- 1:30PM – 6:00PM **Organized Group Activity (canoeing)**
- 6:00PM – 7:00PM **Dinner**
- Session 8** **Cell signaling mechanisms of protein lipidation**
- 7:00PM – 9:00PM Session Chair: **Fuyu Tamanoi**, UCLA
- 7:00PM – 7:30PM **Eric Witze**, University of Pennsylvania
Regulation of cell signaling by protein palmitoylation in cancer
- 7:30PM – 8:00PM **Carol Williams**, Medical College of Wisconsin, Milwaukee
New signaling mechanisms and therapeutic strategies to regulate the prenylation and membrane localization of Ras and Rho family GTPases in cancers
- 8:00PM – 8:15PM *Break*
- 8:15PM – 8:30PM **Erh-Ting Hsu**, Purdue University
Quantifying the two cleavage activities of the integral membrane proteases ZMPSTE24 and Ste24p
- 8:30PM – 8:45PM **Walter Schmidt**, University of Georgia
Evidence for an Isoprenylation-only Branch to the CaaX Processing Pathway

Friday, July, 21, 2017

7:30AM – 9:00AM **Breakfast**

Session 9 **Chemical biology of protein fatty acylation and deacylation**

9:00AM – 11:45AM Session Chair: **Brent Martin**, University of Michigan

9:00AM – 9:30AM **Edward Tate**, Imperial College London, United Kingdom
Lipid probes: from basic biology to drug discovery

9:30AM – 10:00AM **Bryan Dickinson**, The University of Chicago
Chemical tools to probe signaling by dynamic protein depalmitoylation

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

10:30AM – 11:00AM **Hening Lin**, Cornell University,
Regulation of Ras proteins by sirtuins and lysine acylation

11:00AM – 11:30AM **Piers Hemsley**, University of Dundee, United Kingdom
S-acylation in plants - the same but different

11:30AM – 11:45PM Closing Comments, **Organizers**

12:00PM **Departures, Boxed Lunches Available**

For additional information contact:
FASEB Science Research Conferences
9650 Rockville Pike
Bethesda, MD 20814

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