



# Ubiquitin Signaling

January 28–February 1, 2018 | Granlibakken Tahoe | Tahoe City, California | USA

## Scientific Organizers:

**David Komander**, MRC Laboratory of Molecular Biology, UK

**Sylvie Urbé**, University of Liverpool, UK

*These are exciting times for ubiquitin research: potential targets for small molecule inhibitors are emerging in a variety of human diseases and being exploited by the pharmaceutical industry. At the same time, new enzymes regulating ubiquitin modifications are still being discovered, and the complexity of ubiquitin modifications continues to increase with the emerging cross-talk between post-translational modifications. This conference will focus on the latest insights in the large area of cellular regulation mediated by ubiquitin and ubiquitin-like modifiers. Key goals are to provide overviews and updates on emerging frontiers, and encourage efforts to exploit the ubiquitin system to provide new treatments for human diseases. Rather than being organized around key enzymes in the cascade, sessions will focus on biological areas, ensuring a balanced mix of mechanistic and physiology aspects. The meeting will feature both key opinion leaders on ubiquitination who are known to present unpublished results and leading researchers from peripheral fields who will contribute new ideas. A short selection of company-associated academic speakers will provide insights into the translational opportunities in this area.*

## Session Topics:

- The Ubiquitin Code I – Ubiquitin Chains
- The Ubiquitin Code II – Ub/Ubl Modifications
- Ubiquitin in the Host's Response to Infection
- Genetic Disorders
- Protein Degradation in Diseases
- Regulation of Autophagy and Mitophagy by Ubiquitin
- Nuclear Roles of Ubiquitin
- New Paradigms in Ubiquitin Modification(s)

**Scholarship Application & Discounted Abstract Deadline: October 2, 2017**

**Abstract Deadline: October 31, 2017**

**Discounted Registration Deadline: November 30, 2017**



Note: Scholarships are available for graduate students and postdoctoral fellows and are awarded based on the abstract submitted. Submitting an abstract is an excellent opportunity to gain exposure for your work. Abstracts submitted by the abstract deadline will also be considered for short talks on the program.

Meeting Hashtag: #KSubiquitin  
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# KEYSTONE SYMPOSIA

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### SUNDAY, JANUARY 28

#### Arrival and Registration

### MONDAY, JANUARY 29

#### Welcome and Keynote Address

- \***David Komander**, MRC Laboratory of Molecular Biology, UK  
**Brenda A. Schulman**, Max Planck Institute of Biochemistry, Germany  
*Celebrating 20 Years of Cullin Neddylation*

#### The Ubiquitin Code I - Ubiquitin Chains

- \***David Komander**, MRC Laboratory of Molecular Biology, UK  
**Nicolas H. Thomä**, Friedrich Miescher Institute for Biomedical Research, Switzerland  
*How Thalidomide Analogues Recruit Zinc-Finger Degrads to the CRL4-CRBN Ubiquitin Ligase*  
**David Toczyski**, University of California, San Francisco, USA  
*Genetic Analysis Reveals Functions of Atypical Polyubiquitin Chains*  
**Steve Cappell**, NCI, National Institutes of Health, USA  
*Short Talk: Emi1 Switches from being a Substrate to an Inhibitor of APC/C-Cdh1 to Start the Cell Cycle*  
**Achim Werner**, NIDCR, National Institutes of Health, USA  
*Short Talk: Multisite Phosphorylation Regulates Ubiquitin-dependent Neural Crest Formation*  
**Raymond J. Deshaies**, California Institute of Technology and Cleave Biosciences  
*Vms1/Ankzf1: A Novel Peptidyl-tRNA Hydrolase that Releases Nascent Chains from Stalled Ribosomes*

#### Workshop 1: New Methods

- \***Ingrid E. Wertz**, Genentech, Inc., USA  
*Reactive Site-centric Chemoproteomics Identifies a Structurally Distinct Class of Deubiquitinase Enzymes*  
**Norihito Shibata**, National Institute of Health Sciences, Japan  
*Strategy for Protein Degradation against Oncoprotein BCR-ABL*  
**Kristin Riching**, Promega Corporation, USA  
*Monitoring Functional Mechanisms of Protein Degradation in Living Cells*  
**Yu Ye**, University of Cambridge, UK  
*Targeting Protein Aggregates with the Proteasome in vitro and in vivo*  
**Itay Koren**, Harvard Medical School, USA  
*Discovering Degrons using a Synthetic Human Peptidome*  
\***Benedikt M. Kessler**, University of Oxford, UK  
*Expanding the Cancer Cell DUBome for Small Molecule Drug Profiling using Advanced Chemoproteomics*

#### The Ubiquitin Code II - Ub/Ubl Modifications

- \***Sylvie Urbé**, University of Liverpool, UK  
**Christopher D. Lima**, Memorial Sloan Kettering Cancer Center, USA  
*Ubiquitin-like Protein Conjugation Complexes and Genome Integrity*

- Jon Huibregtse**, University of Texas at Austin, USA  
*The Extracellular Signaling Function of ISG15 and Cytokine Secretion*  
**Neil Hunter**, University of California, Davis, USA  
*Short Talk: Delineation and Analysis of the SUMO-Modified Proteome during Meiosis*  
**Mark W. Hochstrasser**, Yale University, USA  
*Distinct Toxin-Antidote Modules Underlie Reproductive Manipulation of Insect Hosts by Intracellular Wolbachia Bacteria*

#### Poster Session 1

### TUESDAY, JANUARY 30

#### Ubiquitin in the Host's Response to Infection

- \***Claus Scheiderei**, Max Delbrück Center for Molecular Medicine, Germany  
**Vishva M. Dixit**, Genentech, Inc., USA  
*Ubiquitin in Inflammation*  
**Mads Gyrd-Hansen**, University of Oxford, UK  
*Deubiquitinases in Innate Immune Signalling*  
**Catherine L. Day**, University of Otago, New Zealand  
*TRAFs and the Assembly of Ubiquitin Chains*  
**Nicolas Bidère**, INSERM, France  
*Short Talk: Regulation of Ciliogenesis and Cell Death by CYLD and Centriolar Satellites*  
**Fuminori Tokunaga**, Osaka City University, Japan  
*Short Talk: Characterization of a Novel LUBAC Inhibitor, HOIPIN-1*  
**Zhijian James Chen**, University of Texas Southwestern Medical Center, USA  
*Ubiquitin in Host Responses*

#### Genetic Disorders

- \***Agata Smogorzewska**, Rockefeller University, USA  
**Ivona Aksentijevich**, NHGRI, National Institutes of Health, USA  
*NF-kappaB Pathway in Autoinflammatory Diseases: Ubiquitination meets Autoinflammation*  
**Ryan Potts**, St. Jude Children's Research Hospital, USA  
*MAGE Proteins in Cancer*  
**Alessandra Rufini**, University of Rome Tor Vergata, Italy  
*Short Talk: The E3 Ligase RNF126 as a New Therapeutic Target for Friedreich Ataxia*  
**Miratul Muqit**, University of Dundee, UK  
*Parkinson's Disease Ubiquitin Signaling Pathways in Mice and Man*

#### Poster Session 2

### WEDNESDAY, JANUARY 31

#### Protein Degradation in Diseases

- \***Mark W. Hochstrasser**, Yale University, USA  
**Daniel J. Finley**, Harvard University and Proteostasis, Inc.  
*Reciprocal Regulation between Ubp6 and the Proteasome*  
**Andreas Matouschek**, University of Texas at Austin, USA  
*Selecting Proteins for Proteasomal Degradation*

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**Leo James**, MRC Laboratory of Molecular Biology, UK  
*Trim-Away: Targeted Degradation of Pathogens and Proteins by the Cytosolic Antibody Receptor TRIM21*

**Sumana Sanyal**, Hong Kong University-Pasteur Institut, Hong Kong  
*Short Talk: Host Cellular Ubiquitylation Profiling Reveals a Critical Role for Lipid Droplet Metabolism during Flavivirus Infections*

**John Hanna**, Harvard Medical School, USA  
*Short Talk: Targeted Degradation of Glucose Transporters Protects against Arsenic Toxicity*

**Craig M. Crews**, Yale University and Arvinas, Inc.  
*PROTACs: Induced Protein Degradation as a Therapeutic Strategy*

### Workshop 2: Drug Discovery

\***Lawrence R. Dick**, Takeda, USA  
*Targeting the Proteasome for Antimalarial Drug Discovery*

**Thomas Kodadek**, The Scripps Research Institute, USA  
*Mining DNA-Encoded Combinatorial Libraries of Electrophilic Compounds for Selective, Covalent Inhibitors of Deubiquitylases*

**Peter Tsvetkov**, Whitehead Institute, USA  
*A New Way Cancer Cells Cope with Proteotoxic Stress*

**Panagiotis Ntziachristos**, Northwestern University, USA  
*USP7 Cooperates with Oncogenes to Drive the Oncogenic Transcriptional Program in Acute Lymphoblastic Leukemia*

**Marjolein Kikkert**, Leiden University Medical Center, Netherlands  
*Potent and Selective Inhibition of MERS Coronavirus Papain-like Protease by Engineered Ubiquitin Variants*

\***Jeanine Harrigan**, Mission Therapeutics, UK  
*Development of DUB Inhibitors for the Treatment of Human Disease*

### Regulation of Autophagy and Mitophagy by Ubiquitin

\***Miratul Muqit**, University of Dundee, UK

**Sylvie Urbé**, University of Liverpool, UK  
*Regulation of Basal Mitophagy by Deubiquitylases*

**J. Wade Harper**, Harvard Medical School, USA  
*Digitizing Ubiquitin Signaling for Mitophagy*

**Kalle Gehring**, McGill University, Canada  
*Short Talk: Parkin and PINK1 at the Crossroads of Cell Signaling by Phosphorylation and Ubiquitination*

**Richard J. Youle**, NINDS, National Institutes of Health, USA  
*Synthetic Phenotypes in Mice Lacking PINK1 and Parkin-Mediated Mitophagy*

### Poster Session 3

### THURSDAY, FEBRUARY 1

#### Nuclear Roles of Ubiquitin

**Titia K. Sixma**, Netherlands Cancer Institute, Netherlands  
*Finding the Right Target*

**Niels Mailand**, University of Copenhagen, Denmark  
*Regulation of Chromatin Ubiquitylation in the DNA Damage Response*

**Agata Smogorzewska**, Rockefeller University, USA  
*Ubiquitin Shuttle Proteins and the Stress Response at the Replication Fork*

**John L. Nitiss**, University of Illinois, USA  
*Short Talk: Ubiquitylation Regulates Repair of Topoisomerase Induced DNA Damage*

\***Christine Katrin Schmidt**, University of Manchester, UK  
*Short Talk: Talk Title to be Announced*

**Cynthia Wolberger**, Johns Hopkins University School of Medicine, USA  
*Mechanistic Insights into Histone Deubiquitination*

### New Paradigms in Ubiquitin Modification(s)

\***Sylvie Urbé**, University of Liverpool, UK

**Ivan Dikic**, Goethe University Medical School, Germany  
*Catalysis and Inhibition of Phosphoribosyl-Dependent Ubiquitination*

**Yuxin Mao**, Cornell University, USA  
*Short Talk: The Molecular Mechanism of Phosphoribosyl-ubiquitination Mediated by a Single Legionella Effector*

**Satpal Virdee**, University of Dundee, UK  
*A New Class of Threonine-specific E3 Ligase*

**David Komander**, MRC Laboratory of Molecular Biology, UK  
*New Tools to Study Ubiquitin Chain Architecture*

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

### FRIDAY, FEBRUARY 2

#### Departure