

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Micropeptides: Biogenesis and Function (T5)

Scientific Organizers: Ami S. Bhatt, Alan Saghatelian and Stephan Wenkel

Supported by the Directors' Fund

GPCRs: An Odyssey from Structure, Signaling and Regulation to Therapeutics (T6)

Scientific Organizers: Brian Kobilka, Mark von Zastrow and Aylin Hanyaloglu

April 6-9, 2022 • Snowbird Resort • Snowbird, UT, USA

Supported by the Directors' Fund

Scholarship Deadline: December 15, 2021 / Abstract Deadline: January 5, 2022 / Discounted Registration Deadline: February 7, 2022

WEDNESDAY, APRIL 6

Arrival and Registration

THURSDAY, APRIL 7

Welcome and Keynote Address (T5)

Gisela T. Storz, National Institutes of Health, USA
Exploring the World of Microbial Small Proteins

Welcome and Keynote Address (T6)

Georgios Skiniotis, Stanford University, USA
It takes Three to Tango in Family C GPCRs

Microproteins across the Tree of Life (T5)

Michael J. Federle, University of Illinois at Chicago, USA
Microproteins in Pathogenic Streptococci, Contributing to Virulence and Communication.

Igor Fesenko, Russian Academy of Sciences, Russia
The vast pool of lncRNA-encoded microproteins in plants

Hila Sberro†, Stanford University, USA
Talk Title to be Announced

Short Talks Chosen from Abstracts

Structural Basis of GPCR Signaling and Regulation (Structure and Dynamics) I (T6)

Christopher G. Tate, MRC Laboratory of Molecular Biology, UK
Structure of Family D GPCRs

Aashish Manglik, University of California, San Francisco, USA
Smoothened/Frizzled Family

Sivaraj Sivaramakrishnan, University of Minnesota, USA
GPCR-G Protein Dynamics

Short Talks Chosen from Abstracts

Workshop 1 (T6)

Short Talks Chosen from Abstracts

sORFs through the Lens of Evolution (T5)

Stephan Wenkel, University of Copenhagen, Denmark
MicroProteins Controlling Developmental Decisions in Plants

Thomas F. Martinez, The Salk Institute for Biological Studies, USA
RiboSeq to Identify Novel Human Microproteins

Juan Pablo Couso, Centro Andaluz de Biología del Desarrollo, Spain
Polysome Profiling to Detect Novel sORFs

M. Mar Albà, Pompeu Fabra University, ICREA, Spain
Evolution of New Proteins from Translated sORFs in lncRNAs

Short Talks Chosen from Abstracts

Structural Basis of GPCR Signaling and Regulation (Structure and Dynamics) II (T6)

Denise L. Wootten, Monash University, Australia
Structural Insights into Family B GPCR Activation

Brian K. Kobilka, Stanford University School of Medicine, USA
Role of Protein Dynamics in GPCR Activation

Robert Scott Prosser, University of Toronto, Canada
NMR Inspired Studies of GPCR Activation and the Connection to Pharmacology

Short Talks Chosen from Abstracts

Poster Session 1

FRIDAY, APRIL 8

Decoding the Activities of Microproteins (T5)

Sarah Slavoff, Yale University, USA
Chemical Tools to Study Microproteins

Jennifer Garrison, Buck Institute for Research on Aging, USA
Neuropeptides and their Role in Aging

Luis Pedro Coelho, Fudan University, China
Antimicrobial Peptide Prediction and Discovery

Short Talks Chosen from Abstracts

New Approaches to GPCR Drug Discovery (T6)

M. Madan Babu, St. Jude Children's Research Hospital, USA
Data Science approaches to GPCR Signaling and Implications for Drug Discovery

Sophie J. Bradley, University of Glasgow, UK
Chemogenetics

Nina Tsvetanova, Duke University School of Medicine, USA
NGS Approaches

Carol V. Robinson, University of Oxford, UK
Capturing GPCR Signaling Cascades in a Mass Spectrometer

Short Talks Chosen from Abstracts

Mining Micropeptides (T5)

Ami S. Bhatt, Stanford University, USA
Mining Microbial Microproteins for their Applications in Medicine

Vera Van Noort, KU Leuven, Belgium
sORF Encoded Peptides

Lena Ho, Duke-NUS Medical School, Singapore
ELABELA - A Microprotein with a Role in Preeclampsia

Tamara Ouspenskaia, Flagship Pioneering, USA
Harnessing Micropeptides to Target Cancer

Short Talks Chosen from Abstracts

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Sensory GPCRs (T6)

Bettina Malnic, University of São Paulo, Brazil
GPCRs and the Sense of Smell

Danielle R. Reed, Monell Chemical Senses Center, USA
The Genetics of Taste

Hiroaki Matsunami, Duke University Medical Center, USA
Talk Title to be Announced

Short Talks Chosen from Abstracts

Poster Session 2

SATURDAY, APRIL 9

Biochemical and Biophysical Methods to Understand Microproteins (T5)

Alan Saghatelian, The Salk Institute for Biological Studies, USA
Biochemical Methods to Study Small Proteins

Speaker to be Announced

Tanja Kortemme, University of California, San Francisco, USA
Computational de novo design of proteins with new shapes

Short Talks Chosen from Abstracts

Cellular Signaling I (T6)

Sudarshan Rajagopal, Duke University, USA
G-alpha-i:beta-arrestin Complex Formation and Pluridimensional Efficacy at GPCRs

Benjamin R. Myers, University of Utah School of Medicine, USA
Unconventional GPCR-PKA Signaling in the Hedgehog Cascade

Michelle L. Halls, Monash University, Australia
Localized GPCR Signaling

JoAnn Trejo, University of California, San Diego, USA
Alpha-arrestin ARRDC3: A Multifunctional Adaptor Protein for GPCRs

Short Talks Chosen from Abstracts

Workshop 2 (T6)

Short Talks Chosen from Abstracts

From Evolution to Application - The Vast Array of Microprotein Biological Functions (T5)

Glenn King, University of Queensland, Australia
Therapeutic Applications of Venom-Derived Microproteins

Helena Safavi, University of Copenhagen, Denmark
The Discovery and Biomedical Application of Diverse Microproteins from Marine Venoms

Jean-Philippe Combier, CNRS, France
Commercial Applications of Micropeptides in Agriculture

Short Talks Chosen from Abstracts

Cellular Signaling II (T6)

Davide Calebiro, University of Birmingham, UK
Single-Molecule Approaches and Internal Membrane Signaling

Mark von Zastrow, University of California, San Francisco, USA
Subcellular Organization of GPCR Signaling

Aylin Hanyaloglu, Imperial College London, UK
Receptor Cross-Talk in Human Pregnancy and Labor

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (T5)

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (T6)

SUNDAY, APRIL 10

Departure