

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Phenotypic Drug Discovery: Recent Advances and Insights from Chemical and Systems Biology (C1)

March 3-7, 2019 • Beaver Run Resort • Breckenridge, Colorado, USA

Scientific Organizers: Mark Mercola, Fabien Vincent, Monica Schenone and Arsenio Nueda

Supported by the Directors' Fund

Abstract & Scholarship Deadline: October 30, 2018 / Abstract Deadline: December 4, 2018 / Discounted Registration Deadline: January 11, 2019

SUNDAY, MARCH 3

Arrival and Registration

MONDAY, MARCH 4

Keynote Address

James E. Bradner, Novartis Institutes for BioMedical Research, USA
PDD, New Approach to Discovering Therapeutics

Clinical Success Stories

Yoshihiro Watanabe, Kanazawa University, Japan
Discovery of JTP-74057/GSK1120212/Trametinib as a MEK-Inhibitor able to alter Phosphorylation State of MEK

Fred Van Goor, Vertex Pharmaceuticals Incorporated, USA
Combination Pharmacology to Treat the Underlying Cause of the Majority of People with Cystic Fibrosis

John Tallarico, Novartis Institutes of Biomedical Research, USA
Novel Therapies from Phenotypic Screening

Short Talk(s) Chosen from Abstracts

Workshop 1: Safety De-risking

***Fabien Vincent**, Pfizer, USA

Short Talks Chosen from Abstracts

New Opportunities and Under-Represented Indications

Speaker to be Announced

Clemens R. Scherzer, Harvard Medical School, Brigham & Women's Hospital, USA

Turning Bits and Base Pairs into Precision Neurology

Scott S. Walker, Merck Research Laboratories, USA
Large-scale Antibacterial Phenotypic Screening and Systematic Hit Triage Reveal Novel Targets and Novel Inhibitors of Established Targets

Short Talk Chosen from Abstracts

Poster Session 1

TUESDAY, MARCH 5

Chemical Biology and Novel Molecular Mechanisms of Action

Maurizio Pellecchia, University of California, Riverside, USA
NMR-based Fragment Screening for Oncology

Laura L. Kiessling, Massachusetts Institute of Technology, USA
Glycans in Health and Disease

Razvan L. Cornea, University of Minnesota, USA
Targeting the Pathological Leak of a Calcium Channel for Heart Failure Therapeutics

Angela Koehler, Massachusetts Institute of Technology, USA
Chemical Probes of Transcription

Short Talk(s) Chosen from Abstracts

Project Prosecution and Pre-clinical Advancement

Arsenio Nueda, Almirall S.A., Spain

Harnessing the Power of Phenotypic Screening to Generate Novel Starting Points for Drug Discovery

Chun-wa Chung, GlaxoSmithKline, UK

Linking Differential Molecular Mode of Action to Distinct Pharmacology

Derek Lowe, Novartis Institutes for Biomedical Research, USA
Advancement of Phenotypic Hits

Short Talk Chosen from Abstracts

Poster Session 2

WEDNESDAY, MARCH 6

Physiologically Complex and Realistic Disease Assays

Rick Livesey, University of Cambridge, UK

Target Identification and Phenotypic Screening in Stem Cell Models of Alzheimer's Disease

Randall T. Peterson, University of Utah, USA
Drug Discovery using Zebrafish

Mark Mercola, Stanford University, USA
High Throughput Kinetic Imaging of iPSC-Derived Cardiomyocytes: Bringing the Patient to the Early Stages of Drug Discovery

Speaker to be Announced

Short Talk(s) Chosen from Abstracts

Workshop 2: Clinical, Regulatory Case Studies with PDD Project Prosecution

***Marco Prunotto**, F. Hoffmann-La Roche Ltd., Switzerland

Short Talks Chosen from Abstracts

Functional Genomics and Systems Approaches

Speaker to be Announced

Thomas A. Wynn, Pfizer, USA
siRNA and CRISPR Screening in Primary Human Cells for Autoimmune and Fibrotic Diseases

Giulio Superti-Furga, Research Center for Molecular Medicine of the Austrian Academy of Sciences, Austria
Systems Pharmacology as an Approach to Network Medicine

Short Talk Chosen from Abstracts

Poster Session 3

THURSDAY, MARCH 7

Keynote Address

Benjamin F. Cravatt III, The Scripps Research Institute, USA
Activity-based Proteomics – Target and Ligand Discovery on a Global Scale

Compound Profiling and Repositioning

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Christopher A. Lipinski, Melior Discovery, Inc., USA

High Throughput in vivo Phenotypic Screening for Drug Repurposing: Discovery of MLR-1023 a Novel insulin Sensitizer and Novel Lyn Kinase Stimulant with Clinical Proof of Concept

Marco Prunotto, F. Hoffmann-La Roche Ltd., Switzerland

Molecular Phenotyping Combines Molecular Information, Biological Relevance, and Patient Data to Improve Productivity of Early Drug Discovery

Umut Ozcan, Boston Children's Hospital, Harvard Medical School, USA

Withaferin A is a Leptin Sensitizer with Strong Antidiabetic Properties in Mice

Short Talk(s) Chosen from Abstracts

Target Identification / Deconvolution

Dyann F. Wirth, Harvard School of Public Health, USA

Target ID for Malaria

Bridget Wagner, Broad Institute, USA

The Importance of Phenotypic Screening in Identifying New Targets for Disease Therapeutics

Herbert Waldmann, Max Planck Institute for Molecular Physiology, Germany

Chemotype - Phenotype - Target

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

FRIDAY, MARCH 8

Departure