

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Delivering Therapeutics Across Biological Barriers (E1)

May 6-9, 2019 • Royal Dublin Society • Dublin, Ireland

Scientific Organizers: David Brayden, Claus-Michael Lehr and Kathryn Whitehead

Supported by the Directors' Fund

Abstract & Scholarship Deadline: January 8, 2019 / Abstract Deadline: February 6, 2019 / Discounted Registration Deadline: March 6, 2019

MONDAY, MAY 6

Arrival and Registration

TUESDAY, MAY 7

Overcoming the Blood-Brain Barrier to Treat CNS Disease

Xavier Declèves[†], University Paris Descartes, France
Imaging Transporter Function on the Blood-Brain Barrier and their Role in Drug Delivery to the CNS

Roland Burli, AstraZeneca Neuroscience iMED, UK
Medicinal Chemistry Designs to Achieve Therapeutic Delivery to the CNS

Elizabeth de Lange, Leiden University, Netherlands
Exploiting BBB Transporters: Preclinical to Clinical Studies of Brain-Delivered Molecules

Svetlana Gelperina, Drugs Technology Ltd, Russia
Clinical Outcome Data for a Phase-II Study of Nanoparticle-Bound Doxorubicin in Patients With Recurrent Glioblastoma

Short Talk(s) Chosen from Abstracts

Workshop 1

Short Talks Chosen from Abstracts

Nanoparticles and Polymers for the Efficient Crossing of Biological Barriers

Elias Fattal, Université Paris-Sud, France
Talk Title to be Announced

Renata Pasqualini, Rutgers University, USA
Ligand-Directed Therapies using Particulates for Targeting Cancer

W. Mark Saltzman, Yale University, USA
Biocompatibility Assay of Nanoparticles and Polymers used in Drug Delivery

Short Talk Chosen from Abstracts

Poster Session 1

WEDNESDAY, MAY 8

Materials and Devices for Diagnostics and Therapeutic Delivery

Tanja Weil, Max Planck Institute for Polymer Research, Germany
Quantum Materials, Customized and Adaptive Macromolecules for Precision Sensing and Therapy

Paula T. Hammond, Koch Institute for Integrative Cancer Research at MIT, USA
Self-Assembly of Polymeric Nanomaterials to Generate Multifunctional Materials with Highly Controlled Architecture

Joke A. Bouwstra, Leiden University, Netherlands
Drug-Device Combinations for Transdermal Delivery of Drugs and Vaccines

Julie A. Champion, Georgia Institute of Technology, USA
Developing Therapeutic Protein Materials: Controlling and Understanding Protein Particle Self-Assembly

Short Talk(s) Chosen from Abstracts

Advances in Oral Delivery of Peptides and Small Molecules

David Brayden, UCD School of Veterinary Medicine, Ireland
Oral Peptide Delivery of Nanoparticles and Intestinal Permeation Enhancers

Anja Boisen, Technical University of Denmark, Denmark
Oral Drug Delivery and Sensing Using Micro and Nanofabricated Devices

Chris Porter, Monash University, Australia
Lipid-based Formulations to Improve Solubility and Oral Bioavailability of BCS Class II Molecules

Short Talk Chosen from Abstracts

Poster Session 2

THURSDAY, MAY 9

Delivery Solutions for Gene Medicines

David V. Schaffer, University of California, Berkeley, USA
Directed Evolution of AAVs for Gene Therapy

Kathryn Whitehead, Carnegie Mellon University, USA
Enabling the Medicines of Tomorrow: Lipid Nanoparticles for Applications in mRNA Delivery

Dan Peer, University of Tel Aviv, Israel
A Universal Platform for RNA Therapeutics

Short Talk(s) Chosen from Abstracts

Workshop 2

Short Talks Chosen from Abstracts

Human Cell and Tissue Models of Biological Barriers to Assist Translation

Donald E. Ingber, Wyss Institute for Biologically Inspired Engineering at Harvard, USA
Human Organs-on-Chips: An in vitro Platform for Drug Development and Delivery

Josué Sznitman, Technion - Israel Institute of Technology, Israel
Biomimetic in vitro Airway Platforms for Drug Delivery Assays and Precision Medicine

Claus-Michael Lehr, Saarland University, Germany
Modelling Epithelial Barriers of Disease States for Testing Safety and Efficacy of Novel Delivery Systems

Summary and Analysis

Kinam Park, Purdue University, USA
An Assessment of the Current and Likely Impact of the Science of Crossing Biological Barriers on Medicine

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

FRIDAY, MAY 10

Departure