PMICR 2019 Program

24th July 2019

8:00 AM – 09:00 AM - Registration
09:00 AM – 09:10 AM - Opening Remarks: Aurora Biomed Inc.

Keynote Presentation
09:10 AM - 09:50 AM – Georg Terstappen
OxStem- “Label-free flux assay technologies in drug discovery and preclinical development”

09:50 AM - 10:30 AM – William Jia
Virogen Biotech Ltd.- “Oncolytic Virotherapy as a Precision Medicine”

10:30 AM – 11:00 AM - Coffee Break

Peptide Research in Drug Discovery - Precision Medicine
11:00 AM - 11:05 AM – Chair: Irina Vetter
University of Queensland

11:05 AM - 11:25 AM – Irina Vetter
University of Queensland- “The role of NaV1.6 in sensory neurons: insight from subtype-selective venom peptides”

11:25 AM – 11:45 AM – William Jia
Virogen Biotech Ltd.- “Peptide array platform for studying protein-protein interaction and potential development of novel drugs”

11:45 AM – 12:05 PM – Zhuyin Wang
Lanzhou University- “Construction and Screening of a Cyclic Peptide Library”

12:05 PM - 1:20 PM – Lunch

Parallel Sessions begin

-Start of Parallel Session 1-

Ion Channels in Epilepsy - Ion Channel
1:20 PM - 1:25 PM – Chair: JP Johnson
Xenon Pharmaceuticals
1:25 PM - 1:45 PM – JP Johnson
Xenon Pharmaceuticals- “NaV1.6 selective and NaV1.2/NaV1.6 dual Inhibitors Reduce Action Potential Firing in Mouse Cortical Pyramidal Neurons While Sparing Inhibitory Interneuron Firing”

1:45 PM - 2:05 PM – Merritt Maduke
Stanford University- “Development and validation of selective and potent small-molecule probes for the CLC-2 chloride channel”

2:05 PM - 2:25 PM – Terry Snutch
University of British Columbia- “P/Q-type Calcium Channel Dysfunction: an Underlying Mechanism in Sudden Unexpected Death in Epilepsy (SUDEP)?”

2:25 PM – 2:35 PM – Session Transition

Neurodegenerative Disease - Ion Channel & Precision Medicine
2:35 PM - 2:40 PM - Chair: Michelina Iacovino
LA Biomedical Research Institute

2:40 PM – 3:00 PM - Michelina Iacovino
LA Biomedical Research Institute- “Patient-derived organoid as a model to study Alzheimer’s Disease and drug development”

3:00 PM – 3:20 PM – Oleg Yerstein
University of California; Los Angeles- “The Role of Ion Channels in Dementia and Other Neurodegenerative Disorders”

3:20 PM - 3:40 PM – Aaron McMurtray
University of California; Los Angeles- “Precision Medicine in the Treatment of Neurodegenerative Diseases”

-End of Parallel Session 1-

-Start of Parallel Session 2-

Application & Advancement of Next Generation Sequencing - Precision Medicine
1:20 PM - 1:25 PM - Chair: David Smith
Mayo Clinic

1:25 PM - 1:45 PM – David Smith
Mayo Clinic- “The Massively Parallel Sequencing (MPS) Revolution”

1:45 PM - 2:05 PM – Laura Hilton
Simon Fraser University- “Oxford Nanopore long-read sequencing to refine somatic variant identification”
2:05 PM - 2:25 PM – Jason Underwood
Pacific Biosciences- “High-Resolution Views of the Human Genome and Transcriptome with PacBio SMRT Sequencing”

2:25 PM - 2:35 PM – Session Transition

Cancer Diagnosis & Treatment - Precision Medicine
2:35 PM - 2:40 PM – Chair: Chris Maxwell
BC Children’s Hospital

2:40 PM – 3:00 PM – Chris Maxwell
BC Children’s Hospital- “BRAvE at BC Children’s Hospital: a precision medicine research initiative for bone marrow-involved childhood cancers”

3:00 PM – 3:20 PM – Gregor Reid
BC Children’s Hospital- “Xenotransplantation of minimal residual disease reveals early enrichment of immunophenotypic subpopulations during leukemia therapy”

3:20 PM - 3:40 PM – Paul Li
Simon Fraser University- “Microfluidic Single-Cell Technology for Liquid Biopsy”

-End of Parallel Session 2-

3:40 PM - 4:10 PM - Coffee Break & Posters

Ion Channels & Immunity - Ion Channel
4:10 PM - 4:15 PM – Chair: Stefan Feske
New York University School of Medicine

4:15 PM - 4:35 PM – Stefan Feske
New York University School of Medicine- “Identification of novel ion channels regulating T cell-mediated immunity”

4:35 PM - 4:55 PM – Christine Beeton
Baylor College of Medicine- “Targeting KCa1.1 in fibroblast-like synoviocytes for the treatment of rheumatoid arthritis”

4:55 PM - 5:15 PM – Bimal Desai
University of Virginia- “TRPM7 at the Crossroads of Tissue Homeostasis and Inflammation”

5:15 PM - 5:35 PM – Cesare Sala
University of Florence- “Role of ERG1 channel in lymphocyte development and in leukemic clonal evolution”
25th July 2019

8:30 AM – 8:40 AM - Welcome & Opening Remarks + Chair of keynote speech

Keynote Presentation
8:40 AM - 9:20 AM – Samir Hanash
*The University of Texas MD Anderson Cancer Center* - “Liquid biopsy approaches from genomics and beyond”

9:20 AM - 10:00 AM – James Ellis
*Nocion Therapeutics* - “Novel Treatments for Pain, Cough and Itch by Selective Targeting of Sodium Channel Modulators into Nociceptors”

10:00 AM - 10:30 AM - Coffee Break & Posters

Ion Channels as Pain Targets I - Ion Channel
10:30 AM – 10:35 AM – Chair: Fernanda Laezza
*University of Texas Medical Branch*

10:35 AM - 10:55 AM – Fernanda Laezza
*University of Texas Medical Branch* - “Targeting the Nav1.6 channel with protein:protein interaction based allosteric modulators for pain management”

10:55 AM - 11:15 AM – Marzia Martina
*National Research Council of Canada* - “Functional antibodies against human Nav1.7 and their use in modulating pain”

11:15 AM - 11:35 AM – Chris Mathes
*AnaBios Corporation, Inc.* - “Using human DRG neurons in preclinical pain research”

11:35 AM - 11:55 AM – Marc Rogers
*Metrion Biosciences* - “Potent and selective state-dependent Cav2.2 calcium channel modulators with efficacy in preclinical pain models and human tissue”

11:55 AM - 12:15 PM – Jeffrey Herz
*Algomedix* - “Targeting TRPA1 for Development of Novel Analgesic Drugs”

12:15 PM - 1:30 PM – Lunch

Parallel Sessions begin

-Start of Parallel Session 1-
Ion Channels as Pain Targets II - Ion Channel
1:30 PM - 1:35 PM - Chair: Yan Xu
University of Pittsburgh

1:35 PM - 1:55 PM – Yan Xu
University of Pittsburgh- “Discovering Glycine Receptor Allosteric Modulators for Treatment of Chronic Pain”

1:55 PM - 2:15 PM – David Hackos
Genentech- “Structural basis of toxin binding to voltage-gated sodium channels and what it teaches us about voltage-gating mechanisms”

2:15 PM - 2:35 PM – Jie Zheng
University of California; Davis- “An in-silico approach towards solving ligand-host interactions in TRPV1 ion channels”

2:35 PM - 3:05 PM - Coffee Break & Posters

Cardiac Research, CiPA & the Impact on Drug Discovery - Ion Channel
3:05 PM – 3:10 PM – Chair: Najah Abi-Gerges
AnaBios Corporation, Inc.

3:10 PM – 3:30 PM – Elena Dragicevic
Nanon Technologies GmbH- “High Throughput Electrophysiology: Lessons from CiPA”

3:30 PM – 3:50 PM – Khaled Barakat
University of Alberta- “Computational Modeling of Cardiac Ion Channels”

3:50 PM – 4:10 PM – Najah Abi-Gerges
AnaBios Corporation, Inc.- “Adult Human Ex-Vivo Models for Preclinical Cardiac Safety Assessment of Drugs”

4:10 PM - 4:30 PM – Mohamed Chahine
Laval University and CERVO Brain Research Centre – “Gating pore currents underlie a new cardiac channelopathy”

-End of Parallel Session 1-

-Start of Parallel Session 2-

Stem Cells in Drug Discovery I - Ion Channel & Precision Medicine
1:30 PM - 1:35 PM – Chair: Marc Pourrier
IonsGate Preclinical Services Inc.
1:35 PM - 1:55 PM – Marc Pourrier
IonsGate Preclinical Services Inc. - “Overexpression of mutated ion channels in human induced pluripotent stem cell-derived cardiomyocytes (hiPSC-CM) to model arrhythmogenic diseases.”

1:55 PM - 2:15 PM – Vincenzo Macri
STEMCELL Technologies - “Rescue of In Vitro Drug-Induced Long QT Syndrome Type 2 Using a HERG channel Activator in Human Pluripotent Stem Cell-Derived Ventricular-Like Cardiomyocytes”

2:15 PM - 2:35 PM – Heinrich Brinkmeier
University Medicine Greifswald - “Development of stem cell based cardiac pacemaker cells for in vitro drug testing”

2:35 PM - 3:05 PM - Coffee Break & Posters

3:05 PM – 3:10 PM – Chair: Jonathan Davila
NeuCyte

3:10 PM – 3:30 PM – Jonathan Davila
NeuCyte - “Overcoming Challenges in CNS Drug Discovery through Developing Translatable iPSC-derived Cell-Based Assays”

3:30 PM – 3:50 PM – Daniel Sauter
Sophion Bioscience - “Towards more physiological assays: iPSC-derived neurons tested on the 384 channel automated patch clamp platform Qube”

3:50 PM – 4:10 PM – Zhiyuan Li
Guangzhou Institutes of Biomedicine and Health - “Generation of an induced pluripotent stem cell (iPSC) line from a 16-year old male with autism spectrum disorder (ASD)”

4:10 PM - 4:30 PM – Georg Terstappen
OxStem - “Small molecule drug discovery targeting innate regeneration and repair”

-End of Parallel Session 2-

6:00 PM – 9:00 PM-
Social Event- Boat Cruise
26th July 2019

8:30 AM – 8:35 AM - Chair of keynote speech

Keynote Presentation
8:35 AM - 9:15 AM – David Smith
Mayo Clinic- “Whole Genome Sequencing to Study the Role of HPV Integration In Oropharyngeal Squamous Cell Carcinoma”

9:15 AM – 9:55 AM – Dong Liang
Aurora Biomed- “Flux Assays for Ion Channels and Transporters (Novel Area for Cancer Drug Discovery)”

9:55 AM - 10:25 AM - Coffee Break & Posters

Ion Channels in Drug Discovery - Ion Channel
10:25 AM - 10:30 AM – Chair: Isabelle Deschenes
Case Western Reserve University

10:30 AM - 10:50 AM – Isabelle Deschenes
Case Western Reserve University- “Voltage-Gated Sodium Channels Assemble and Gate as Dimers”

10:50 AM – 11:10 AM – Yuji Imaizumi
Nagoya City University- “Development of a novel cell-based assay system for high throughput screening of compounds acting on background two-pore domain K+ channels”

11:10 AM - 11:30 AM – Alberto Montalbano
University of Florence- “A signalling pathway centred on hERG1 potassium channel identifies metastatic colorectal cancer patients with a positive response to Bevacizumab.”

11:30 AM - 11:50 AM – Wayne Giles
University of Alberta- “Electrophysiological Properties of Human Chondrocytes Can Yield Insights into Design of Drug Targets and Discovery Platforms”

11:50 AM - 1:05 PM – Lunch

Structural and functional aspects of ion channels and ion transporters - Ion Channel
1:05 PM - 1:10 PM – Chair: Tzyh-Chang Hwang
University of Missouri

1:10 PM – 1:30 PM - Tzyh-Chang Hwang
University of Missouri- “Hunting the Molecular Target Sites for CFTR Potentiators”
1:30 PM - 1:50 PM – Paul Schnetkamp
University of Calgary - “Structure-function, physiology and pharmacology of K-dependent Na-Ca exchangers of the SLC24 gene family”

1:50 PM – 2:10 PM – George Okeyo
Nanion Technologies- “SSM-based Functional Recordings of Cardiac Transporters and Pumps”

2:10 PM - 2:15 PM – Session Transition

Key Methodologies in Precision Medicine & Ion Channels for Drug Discovery

2:15 PM - 2:20 PM – Chair: Owen McManus
Q-State

2:20 PM - 2:40 PM – Filip Van Petegem
University of British Columbia- “High-resolution insights in ion channels involved in muscle excitation-contraction coupling”

2:40 PM - 3:00 PM – Amanda Duran
Cyrus Biotechnology- “Functional and Mutational Analysis with Rosetta and Cyrus Bench: KCNQ1 case study”

3:00 PM - 3:20 PM – Ali Yehia
Fluxion Biosciences- “Importance of fluidic control and precision in serial activation of ionic channels”

3:20 PM - 3:40 PM – Owen McManus
Q-State- “Precision medicine targeting genetically defined CNS disorders using human iPS cell models”

3:40 PM – 3:50 PM - Closing Remarks: Dong Liang
Aurora Biomed Inc.

-End of PMICR-