

# PMICR 2019 Program

24<sup>th</sup> 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”*

**25<sup>th</sup> 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**

**Stem Cells in Drug Discovery II - Ion Channel & Precision Medicine**

**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**

*Guanzhou 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**

**26<sup>th</sup> 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<sup>+</sup> 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**

*Nanon 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-**