

Friday October 11, 2019

Arrival Check-in at Swope

4:00-4:30 *Sperm Cryopreservation Demonstration (Loeb G52)*
Hands on demonstration of thawing cryopreserved sperm from resource centers

5:00-10:00 **BBQ dinner**

Sponsors
Iwaki, Aquaneering, Tecniplast, and Nasco

Saturday October 12, 2019

7:00-8:30 BREAKFAST

8:30-8:45 **Introduction and Welcoming Remarks (Speck Auditorium)**
Rachel Miller, Gregory Weber, Helen Willsey

Session 1. Disease Modeling

8:45-8:57 Rachel Miller (University of Texas Health McGovern Medical School)
A novel role for Dyrk1a in kidney development

8:58-9:10 Nicole Edwards (Cincinnati Children's Hospital)
Modeling trachea-esophageal birth defects

9:11-9:23 Mustafa Khokha (Yale University)
Membrane potential of early frog embryos define the exit from pluripotency

9:24-9:36 Friedhelm Hildebrandt (Boston Children's Hospital, Harvard University)
Xenopus models of monogenic kidney disease

9:37-9:49 Kris Vlemnickx (Cancer Research Institute Ghent)
CRISPR/Cas9 based strategies to model human cancer and rare hereditary diseases in Xenopus tropicalis

9:50-10:02 Helen Willsey (University of California, San Francisco)
Identifying convergent biology underlying autism using frogs

10:03-10:30 COFFEE BREAK

Session 2. 'Omics Approaches

- 10:30-10:42 Eva Hörmanseder (Helmholtz Zentrum München)
Epigenetic barriers to cell fate reprogramming
- 10:43-10:55 Peter Nemes (University of Maryland)
Advancing Developmental Biology One Blastomere at a Time: Single-cell Mass Spectrometry
- 10:56-11:08 Ken Cho (University of California, Irvine)
Contribution of maternal transcription factors for the establishment of germ layer specific super-enhancers
- 11:09-11:21 Leonid Peshkin (Harvard Medical School)
Proteome and phospho proteome of Xenopus embryo
- 11:22-11:34 Martin Wühr (Princeton University)
Proteome-Wide Analysis of Cytoplasmic Meso-Scale Organization
- 11:35-11:47 John Wallingford (University of Texas Austin)
Interactome mapping in Xenopus
- 11:47-12:00 Peter Vize (University of Calgary)
Xenbase 2019; integration and visualization of all NCBI Xenopus RNA-seq and CHIP-seq content (plus a preview of phenotypes!)

12:00-2:00

LUNCH (box lunch)

Xenbase workshop - Loeb G70

Session 3. Emerging Technologies I.

- 2:15-2:27 Evi Van Itallie (Harvard Medical School)
Tandem Protection Radioassay (TaPR): a general approach for validating translation-blocking morpholinos; and applications to non-canonical Wnt signaling ligands
- 2:28-2:40 Doug Houston (University of Iowa)
Oocyte host-transfer approaches to genome editing
- 2:41-2:53 Gary Gorbsky (University of Oklahoma Health Sciences Center)
Creating, Manipulating, and Using Novel Xenopus Cell Lines

2:53-3:08 George Eisenhoffer (University of Texas-MD Anderson Cancer Center)
CreLite: Shedding light on control of gene expression in living tissues

3:08-3:20 Ira Blitz (University of California, Irvine)
On the Dark Arts of Xenopus Gene Knockdowns and Knockouts

3:20-3:45 COFFEE BREAK

Session 4. Cell-Free Systems, Cell Biology and Biophysics

3:46-3:58 Jenny Gallop (Gurdon Institute)
Dynamics and composition of filopodia and filopodia-like structures

3:59-4:11 Lance Davidson (University of Pittsburgh)
Surface tension drives goblet cell regeneration and restoration of a mucociliated epidermis from deep ectoderm aggregates

4:12-4:24 Philipp Vick (University of Hohenheim)
Superficial and trunk mesoderm in Xenopus – common fate, shared regulation, but different pit stops

4:25-4:37 Matt Good (University of Pennsylvania)
Contribution of Cell Size to Spatially Patterned Genome Activation and Embryo Development

Session 5. Neuro/Craniofacial

4:38-4:50 Amanda Dickenson (Virginia Commonwealth University)
Using frog faces to dissect mechanisms underlying human orofacial defects

4:53-5:08 Sally Moody (George Washington University)
Six1 proteins carrying different human Branchio-Oto-Renal (BOR) mutations differentially affect cranial gene expression and otic development

5:09-5:21 Hazel Sive (Massachusetts Institute of Technology)
An Report and an Idea

5:22-5:34 Kristian Franze (Cambridge University)
The mechanical regulation of neuronal development

5:35-5:47 Kara Pratt (University of Wyoming)
Presenilin regulates formation of retinotectal synapses in vivo

6:00-8:00**DINNER****Session 6. Injury and Regeneration**

- 8:10-8:22 Makoto Nakamura (Hiroshima University)
Functional analysis of the JunB transcription factor in tail regeneration by CRISPR-induced compound heterozygous mutants
- 8:23-8:35 Andrea Wills (University of Washington)
A transcriptional regulatory signature for regenerating neural progenitors
- 8:36-8:48 Amy Sater (University of Houston)
Modeling Traumatic Brain Injury in Xenopus: tamoxifen as a potential treatment for repetitive mild TBI
- 8:49-9:01 Ben Szaro (University at Albany, State University of New York)
Spatial regulation of Socs3 protein expression after optic nerve injury provides insights into CNS axon regenerative success

KEYNOTE

- 9:02-9:32 Leon Grayfer (George Washington University)
Macrophage differentiation critically defines susceptibility and resistance to mycobacteria

9:30-11:00**MIXER @ Captain Kidd****Sunday October 13, 2019**

7:00-8:30**BREAKFAST****Session 7. Resources**

- 8:30-8:42 Marcin Wlizia (Marine Biological Laboratory)
National Xenopus Resource update
- 8:43-8:55 Matt Guille (University of Portsmouth)
The EXRC in the changing landscape of Xenopus research
- 8:56-9:08 Richard Harland (University of California, Berkeley)
Frog genomes: insights on evolution and function

- 9:09-9:21 Marko Horb (Marine Biological Laboratory)
Xenopus Mutant Resource
- 9:22-9:34 Hajime Ogino (Hiroshima University)
Generation of Xenopus tropicalis inbred strains and their genome polymorphism data by NBRP in Japan
- 9:35-9:50 David Hill (Dana-Farber Cancer Institute)
Expanding the X. tropicalis ORFeome by de novo cloning of protein-coding gene models
- 9:51-10:08 Mahua Mukhopadhyay (National Institutes of Health)
Xenopus-the view from NIH

10:15-10:45 COFFEE BREAK

10:45-12:00 Junior Strategic Planning

12:00-1:30 LUNCH

1:30-2:45 **Strategic planning** (incl. relay of junior requests)

Session 8. Fate, Patterning & Morphogenesis

- 2:45-2:57 Oliver Wessely (Cleveland Clinic)
A Design-of-Experiment Approach towards Understanding Kidney Development and Disease
- 2:58-3:10 Masanori Taira (University of Tokyo)
Determination of developmental timing of expression of all hoxa genes by detecting de novo transcription in X. tropicalis embryos
- 3:11-3:23 Xi He (Harvard University)
TMEM79 defines a novel pathway for Frizzled regulation and is essential for Xenopus embryogenesis
- 3:24-3:36 Robert Grainger (University of Virginia)
six3 mutation in Xenopus tropicalis: insights regarding eye development and Xenopus as a model for studying human disease
- 3:37-3:49 Asako Shindo (Nagoya University)
The role of nutrients for organ morphogenesis

3:50-4:00 Thomas Naert (Ghent University)
CRISPR/Cas9 in vivo dependency mapping reveals EZH2 as druggable target in desmoid tumors

4:00-4:30 COFFEE BREAK

Session 9. Cell-Cell Interactions

4:30-4:42 Robert Huebner (University of Texas, Austin)
Planar cell polarity and cell-cell adhesions govern force production during head-to-tail axis extension

4:43-4:55 Gregory Weber (University of Indianapolis)
Forced association: examining junctional intermediate filament dynamics

4:56-5:08 Haruki Ochi (Yamagata University)
Regeneration signal-response enhancers for kidney regeneration

5:09-5:21 Austin Baldwin (University of Texas, Austin)
Global quantitative analysis of apical constriction during neural tube closure

5:22-5:34 Marcela Torrejon (University of Concepción)
The Lord of the G: a master regulator driving collective cell movement

5:35-5:47 Sarah Woolner (University of Manchester)
Mechanical regulation of cell division in complex tissue environments

5:48-6:00 Arthur Marivin (Boston University)
Defining unconventional G-protein activation in epithelium morphogenesis

6:00-8:00 DINNER

Session 10. Emerging Technologies II.

8:10-8:22 Sang-Wook Cha (University of Central Missouri)
HDR-mediated GFP integration in Slc45a2.L gene of Xenopus laevis

8:23-8:35 Takuya Nakayama (University of Virginia)
HDR-mediated "gene therapy" of the tyr mutant of Xenopus tropicalis

8:36-8:48 Kai Zhang (University of Illinois)
Optical inhibition of the mitogen-activated protein kinase signaling pathway in cells

8:49-9:01 Sergei Sokol (Icahn School of Medicine at Mount Sinai)
Proximity biotinylation for protein interaction studies

9:02-9:14 Dominique Alfandari (University of Massachusetts, Amherst)
Production and characterization of monoclonal antibody to Xenopus proteins

9:15-9:27 Helene Cousin (University of Massachusetts, Amherst)
Using the Trim Away protein knock down in Xenopus laevis

KEYNOTE

9:30-10:00 Ann Miller (University of Michigan)
Maintenance and remodeling of cell-cell junctions in dynamic epithelia

10:00-11:00 MIXER @ Captain Kidd

Monday October 14, 2019

7:00-8:30 BREAKFAST

Session 11: Organogenesis

8:45-8:57 Darcy Kelley (Columbia University)
A genetic architecture for vocal communication in Xenopus

8:58-9:10 Lora Sweeney (Salk Institute for Biological Sciences)
Neuronal diversity scales with motor behavior during Xenopus metamorphosis

9:11-9:23 Jacques Robert (University of Rochester Medical Center)
Emerging roles of innate-like T cells in anti-microbial and anti-tumor immunity

9:24-9:36 Frank Conlon (University of North Carolina)
The evolution of protein pathways and protein complexes in the Xenopus laevis and Xenopus tropicalis heart

9:37-9:49 Michael Yoder (Penn State Brandywine)
Axial protocadherin may direct multiple signaling events during embryogenesis

9:50-10:02 Adil Khan (University of Rochester)
Characterization of iT cells interacting with the MHC class I-like XNC4 during mycobacteria infection

10:03-10:15 Mark Corkins (University of Texas Health McGovern Medical School)
Divergent roles of the Wnt/PCP Formin Daam1 in renal ciliogenesis

10:15-10:45

COFFEE BREAK

Session 12. Programming/Mitosis/CellBio

10:45-10:57 Saurabh Kulkarni (University of Virginia)
Multiple roles of CCDC11 in development and disease

10:58-11:10 Ben Evans (McMaster University)
Developmental systems drift and the drivers of sex chromosome evolution

11:11-11:23 Jing Yang (University of Illinois at Urbana-Champaign)
Deep cytoplasmic sorting during Xenopus oocyte-to-embryo transition

11:24-11:36 Jerome Jullien (University of Cambridge)
Epigenetic homogeneity in histone methylation underlies sperm programming for embryonic transcription

11:37-11:49 Jennifer Landino (University of Michigan)
Excitable extract makes waves

11:50-12:02 Yuuri Yasuoka (RIKEN Center for Integrative Medical Sciences)
Genome-wide measurement for fluctuation of gene regulatory networks in Xenopus embryos

12:15

LUNCH AND DEPARTURE