

Friday October 11, 2024

Arrival

Check-in at Swope

5:00-10:00 **BBQ Dinner** (MBL club)

Sponsors

Iwaki, Aquaneering, Tecniplast, and *Xenopus* Express

Saturday October 12, 2024

7:00-8:55

BREAKFAST

8:40-8:45

Introduction and Welcoming Remarks (Speck Auditorium)

Jennifer Landino, Coral Zhou, Helen Willsey

Session 1. Resources

8:45- 9:00

Nikko-Ideen Shaidani (Marine Biological Laboratory)

Xenopus Mutant Resource

9:00-9:15

Dominique Alfandari (University of Massachusetts, Amherst)

Producing novel monoclonal antibody to Xenopus, Axolotl and Mouse to improve rigor and reproducibility

9:15-9:30

Gary Gorbsky (Oklahoma Medical Research Foundation)

Expanding the Toolset: Creation of Novel Xenopus laevis and Xenopus tropicalis Cell Lines and Their Applications in Gene Editing

9:30-9:45

Matt Guille (University of Portsmouth)

Title TBD

9:45-10:00

Aaron Zorn (University of Cincinnati)

Title TBD

10:00-10:15

Doug Houston (University of Iowa)

DSHB: Sharing monoclonal antibodies through open science

10:15-10:30

COFFEE BREAK

Session 2. Development I

- 10:30-10:45 Jakub (Kuba) Sedzinski (University of Copenhagen)
Phenotypic profiling of developing mucociliary epithelium
- 10:45-11:00 Rachel Miller (University of Texas Health, McGovern Medical School)
Advancing our understanding of kidney development and birth defects using innovative technologies
- 11:00-11:15 Casey Griffin (New York University)
*Deciphering the mechanisms of Nager syndrome using *Xenopus tropicalis**
- 11:15-11:30 Pat Kearns (University of Massachusetts, Boston)
Title TBD
- 11:30-11:45 Meghan Bullard (He lab, Georgetown University)
Title TBD
- 11:45-12:00 Andrea Wills (University of Washington)
*Deciphering the contributions of carbohydrate and nucleotide metabolism to *Xenopus* regeneration*

12:00-1:45

LUNCH

Session 3. Reconstitution using extracts

- 1:45-2:00 Yasuhiro Arimura (Fred Hutch Cancer Center)
*Applying cryo-EM to *Xenopus* egg extract system to elucidate the structural basis of biological events on chromosomes*
- 2:00-2:15 Susannah Rankin (Oklahoma Medical Research Foundation)
Protein tricks in extracts and embryos
- 2:15-2:30 Jesse Gatlin (University of Wyoming)
Title TBD
- 2:30-2:45 Gembu Maryu (Yang Lab, University of Michigan)
*Visualization and manipulation of *Cdk1* oscillations in water-in-oil droplets*
- 2:45-3:00 Martin Wühr (Princeton University)
Protein turnover measurements in embryogenesis

3:00-3:30

COFFEE BREAK

Session 4. Biophysical and Mathematical Modeling

- 3:30-3:45 Sarah Woolner (University of Manchester)
Measuring and applying tension in Xenopus: adventures with Flipper-TR and Lego
- 3:45-4:00 Lance Davidson (University of Pittsburgh)
New and improved! Tools to explore extreme mechanics of morphogenesis
- 4:00-4:15 Kristian Franze (University of Cambridge)
Measuring and manipulating tissue mechanics to understand brain development in Xenopus laevis
- 4:15-4:30 Shinuo Weng (Johns Hopkins University)
TFlux and Flex: Building Insights into Cell and Tissue Mechanics with Useful Fluctuation

Session 5. Development II

- 4:30-4:45 Adrian Thompson (Brown University)
Novel approaches for modeling neurodevelopmental effects of sodium channel dysregulation in the developing brain of Xenopus laevis tadpoles
- 4:45-5:00 Richard Behringer (University of Texas, MD Anderson Cancer Center)
Role of anti-Müllerian hormone in Xenopus tropicalis
- 5:00-5:15 David Vijatovic (Sweeney lab, Institute of Science and Technology Austria)
Adeno-Associated Viral Tools to Trace Neural Development and Connectivity in Xenopus Frogs
- 5:15-5:30 Vanja Stankic (Chen Lab, University of Texas, MD Anderson Cancer Center)
Cell at a Time: Unveiling the Cellular Landscape of Xenopus Lungs During Metamorphosis
- 5:30-5:45 Kris Vlemnickx (University of Ghent)
Modeling human cancer and inherited disease, expanding the experimental landscape to oncogenes and the non-coding genome
- 5:45- 6:00 Can Aztekin (Swiss Federal Institute of Technology Lausanne)
Xenopus regeneration and new sequencing approaches

6:00-8:00

DINNER

KEYNOTE

8:00-9:00

Thomas Naert (University of Ghent)

Non-random DNA repair allows predictable genome engineering

9:00-11:00

MIXER @ Captain Kidd

Sunday October 13, 2024

7:00-8:45

BREAKFAST

Session 6. Omics

8:45-9:00

Leonid Peshkin (Harvard University)

XePA: Xenopus Protein Atlas

9:00-9:15

Hui Chen (University of South Carolina)

Quantifying Nascent Transcription in Early Embryogenesis

9:15-9:30

Jose Abreu (Harvard University)

Xenopus Embryo Atlas: every single cell?

9:30-9:45

Taejoon Kwon Lab Student TBD (UNIST)

Title TBD

9:45-10:00

Nayeli Reyes-Nava (Wallingford lab, University of Texas at Austin)

Proteomics, AlphaFold, and disease modeling in Xenopus

10:00-10:15

Karel Dorey (University of Manchester)

Uncovering the mechanisms underpinning regenerative neurogenesis using single-cell transcriptomics

10:15-11:00

COFFEE BREAK

11:00-12:00

Junior Strategic Planning

12:00-1:30

LUNCH

1:30-2:30 **Strategic planning** (including relay of junior requests)

Session 7. Physiology and Disease Modeling

- 2:30-2:45 Shiri Kult Perry (Shubin lab, University of Chicago)
The Xenopus respiratory system reveals common tetrapod mechanisms for growth, regeneration, and healing.
- 2:45-3:00 Nicole Edwards (Zorn Lab, Cincinnati Children's Hospital)
Discovering the developmental basis of endosome trafficking disorders and congenital anomalies using Xenopus
- 3:00-3:15 Lydia Youmans (University of Texas, Houston)
As the Frog Folds: Exploring Human Genetic Variants of Neural Tube Defects in Xenopus
- 3:15-3:30 Mustafa Khokha (Yale University)
Are ion channels morphogens? Surprising results inspired by patient based gene discovery.
- 3:30-3:45 Bruno Reversade (A*STAR)
Title TBD

3:45-4:00

COFFEE BREAK

Continuation of Disease Modeling

- 4:00-4:15 Adrian Romero (Miller Lab, UTHealth Houston)
Bridging tissues: using new technologies in Xenopus to study bone and kidney development
- 4:15-4:30 Jack Govaerts (Schoborg Lab, University of Wyoming)
Building a 3D Developmental Atlas of X. laevis with Micro CT
- 4:30-4:45 Engin Deniz (Yale University)
Unveiling the complexities of CSF circulation using Xenopus and OCT imaging

Session 8. Cell Biology

- 4:45-5:00 Saurabh Kulkarni (University of Virginia)
Understanding multiciliogenesis in Xenopus
- 5:00-5:15 Enzo Bresteau (Northwestern University)
Apical Size Reduction by Macropinocytosis Alleviates Tissue Crowding
- 5:15-5:30 Jaeho Yoon (National Cancer Institute)
Limitations of Existing Proximity Labeling Methods and the Development of a New Approach
- 5:30-5:45 Leslie Sepaniac (Bement Lab, University of Wisconsin)
Synthetic constitution of traveling Rho GTPase waves at the cell cortex

5:45-8:00

DINNER

KEYNOTE

- 8:00-9:00 Rebecca Heald (University of California, Berkeley)
Using Xenopus to investigate the effects of ploidy on cell and developmental biology

9:00-11:00

MIXER @ Captain Kidd

Monday October 14, 2024

7:00-9:00

BREAKFAST

9:00-10:30

XRET GO Jamboree Workshop

10:30-12:00

Cryopreservation Workshop and NXR Tour

12:00

LUNCH AND DEPARTURE