



Preconference Symposium
State-of-the-art approaches in Developmental & Reproductive Biology
New Orleans, Louisiana, January 20, 2019

8:15 - 8:30 am Introduction to workshop - Beatriz Fernandez and Jorge Piedrahita

SESSION I. Dr. Scott Magness, University of North Carolina, Department of Biomedical Engineering

Single Cell Analytics in Stem Cell Biology and Regenerative Medicine.

This section will be focused on single cell RNAseq (scRNAseq) technologies. The workshop will cover the methods for cell isolation, capture of single cells on various commercialized scRNAseq platforms, cDNA library preparation, Quality Control (QC) steps, sequencing, and data analysis pipelines.

8:30 - 9:15 am Session I. Part 1 Background
9:15 - 9:30 am MORULA selected abstract presentation
9:30 - 10:25 am Session I. Part 2 In depth discussion and Q&A

10:30 - 11:00 am Coffee break

SESSION II. Dr. Li Qian, University of North Carolina, Department of Pathology and Laboratory Medicine

In Vivo Cellular Reprogramming to Repair Damaged Tissues

Direct lineage conversion offers a new strategy for tissue regeneration and disease modeling. Dr. Qian's group has worked on understanding the molecular mechanisms underlying direct cardiac reprogramming to convert endogenous cardiac fibroblasts into iCMs to replenish the lost cardiomyocytes in damaged hearts. This session will discuss approaches for direct reprogramming in vivo and will highlight novel approaches, and remaining barriers.

11:00 - 11:45 am Session II. Part 1 Background
11:45 - 12:00 pm MORULA selected abstract presentation
12:00 - 12:55 pm Session II. Part 2 In depth discussion and Q&A

1:00 - 2:30 pm Lunch/Poster Session

SESSION III. Dr. Shuo Xiao, University of South Carolina, Reproductive Health and Toxicology Lab, Department of Environmental Health Sciences, Arnold School of Public Health

Female Reproductive Cycle-on-a-Chip

Pharmaceutical and environmental chemicals can have adverse impacts on female reproductive systems. We are using a microfluidic system to engineer the mammalian reproductive cycle. This organ-on-a-chip technology allows organ-organ integration of hormonal signaling, phenocopies the ovarian cycle and pregnancy-like hormone control, and has a potential to be used in the drug discovery and toxicology studies. This Session will cover the principles of organ-on-a-chip and how they are being applied to reproductive toxicology.

2:30 - 3:15 pm Session III. Part 1 Background
3:15 - 3:30 pm MORULA selected abstract presentation
3:30 - 4:25 pm Session III. Part 2 In depth discussion and Q&A
4:30 - 5:00 pm **Panel Discussion**
5:00 - 5:30 pm **Poster Awards**
5:30 - 6:30 pm **Social**

