The rapid expansion of technologies designed to acquire and analyze high dimensional molecular as well as phenotypic information has had a transformative impact on our understanding of human biology based on research ranging from the single cell and tissue level to population scale. The presentations in this symposium are designed to demonstrate how these technologies can be used to provide a more systems wide view of biology related to intestinal and liver development and disease.

8:05am – 9:55am – Session 1 – Single cell level analyses
Keynote 1: Pamela Hoodless, PhD, University of British Columbia, Canada – “Single-Cell Transcriptomics Reveals Early Emergence of Liver Parenchymal and Nonparenchymal Cell Lineages” *
- Sydney Shaffer, MD, PhD, University of Pennsylvania – “Development of prognostic and diagnostic assays with single cell technologies” *
- Chris Lengner, PhD, University of Pennsylvania – “Single cell lineage tracing” *
- Kathryn Hamilton, PhD, University of Pennsylvania – “Crohn’s Disease Gut Cell Atlas: Pediatric to Adult Continuum”

9:55am – 10:15am – Break

10:15am – 11:40am – Session 2 – Tissue spatial level analyses
Keynote 2: Boone Prentice, PhD, University of Florida | Joseph Zackular, PhD, University of Pennsylvania – “Spatial metabolomics in the gut by MALDI-MSI”
- Kyong-Mi Chang, MD, University of Pennsylvania – “2-D Mass Cytometry in liver disease research” *
- Mingyao Li, PhD, University of Pennsylvania – “Statistical approaches to model high dimensional datasets with spatial resolution” *

11:40am – 12:00pm – Flash Talks from Trainees

12:00pm – 1:00pm – Lunch and Posters

1:00pm – 2:25pm – Session 3 – Human population level analyses
Keynote 3: Judy Cho, MD, Icahn School of Medicine at Mount Sinai – “Genetics of IBD: cross-walking across data types”
- Marylyn Ritchie, PhD, University of Pennsylvania – “Biomedical informatics and phenome-wide association studies” *
- Walter Witschey, PhD, University of Pennsylvania – “Determination of digestive and liver disease risk from medical imaging data using artificial intelligence”

2:25pm – 2:30pm – Closing Comments
* - Tentative title pending confirmation