



**“Conceptualizing a pipeline from single cell data to predictive mathematical modeling”**

**NorthShore University HealthSystem  
Research Institute  
1001 University Place, Evanston, IL  
Conference Room 118**

**PROGRAM**

**Wednesday, March 4, 2020**

**9:00 AM – 5:00 PM**

## **Moderators**

**8.55 AM -9.00 AM** - Welcome - Simon Hayward (NorthShore)/Timothy Ratliff (Purdue)

## **scRNAseq**

**9.00 AM – 9:45 AM** - Douglas Strand (UT Southwestern)  
A cellular atlas of the normal and diseased human prostate

**9.45 AM – 10:30 AM** - Renee Vickman (NorthShore)  
“Deciphering human prostate carcinoma-associated fibroblast heterogeneity using scRNA-seq”

**10.30-10.45 Coffee Break**

## **Data Processing/Statistical Approaches**

**10.45 AM – 11:30 AM** - Nadia Lanman (Purdue)  
“Gaining insight into the heterogeneity of Benign Prostatic Hyperplasia using scRNA-Seq”

**11.30 AM – 12:15 PM** - Mengjie Chen (University of Chicago)  
“How to pre-process single cell RNA-seq UMI data”

**12.15-1.30 Lunch**

## **Mathematical Approaches to Pathway Analysis**

**1.30 PM – 2:15 PM** - Yuan Ji (University of Chicago)  
“Bayesian graphical models with application to cancer genomics”

**2.15 PM – 3:00 PM** - Meaghan Broman (Purdue)  
“Exploring immune cell interactions in benign prostatic hyperplasia”

**3.00-3.15 Coffee Break**

## **Cell-based mathematical models**

**3.15 pm- 4:00 PM** - David Basanta (Moffitt Cancer Center, Tampa)  
“Setting the stage for cancer: agent-based modeling in cancer and homeostasis”

**4.00 PM – 4:45 PM** – Alexander Anderson (Moffitt Cancer Center, Tampa)  
“The role of reactive stroma in tumor evolution and drug resistance.”

**4.45 PM – 5:00 PM** - Comments and Discussion

**5.00 PM** - Meeting Adjourn