

# SUN LAB

2/9/22

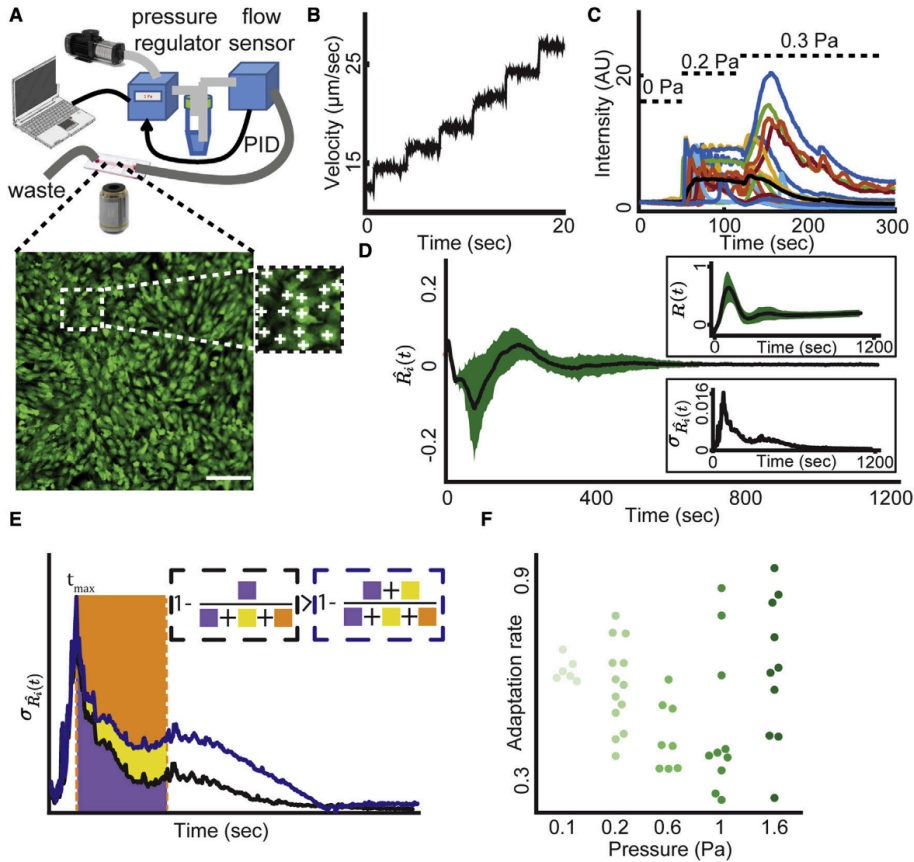
Physics 607

# Who are they?

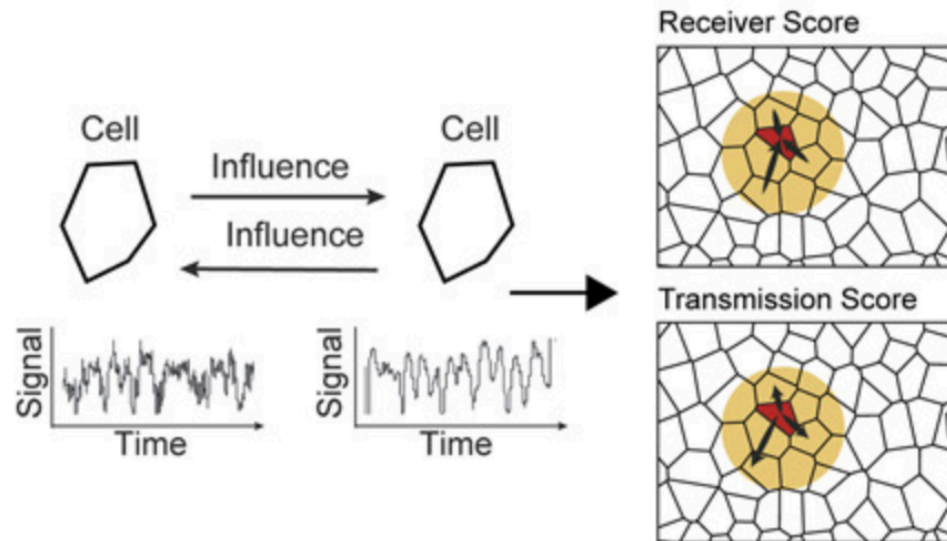
2

- PI
  - Bo Sun
- Group Members
  - Pedram Esfahani
  - Austin Naylor
  - Guanyu Li
  - Trevor Reid

# What do they do



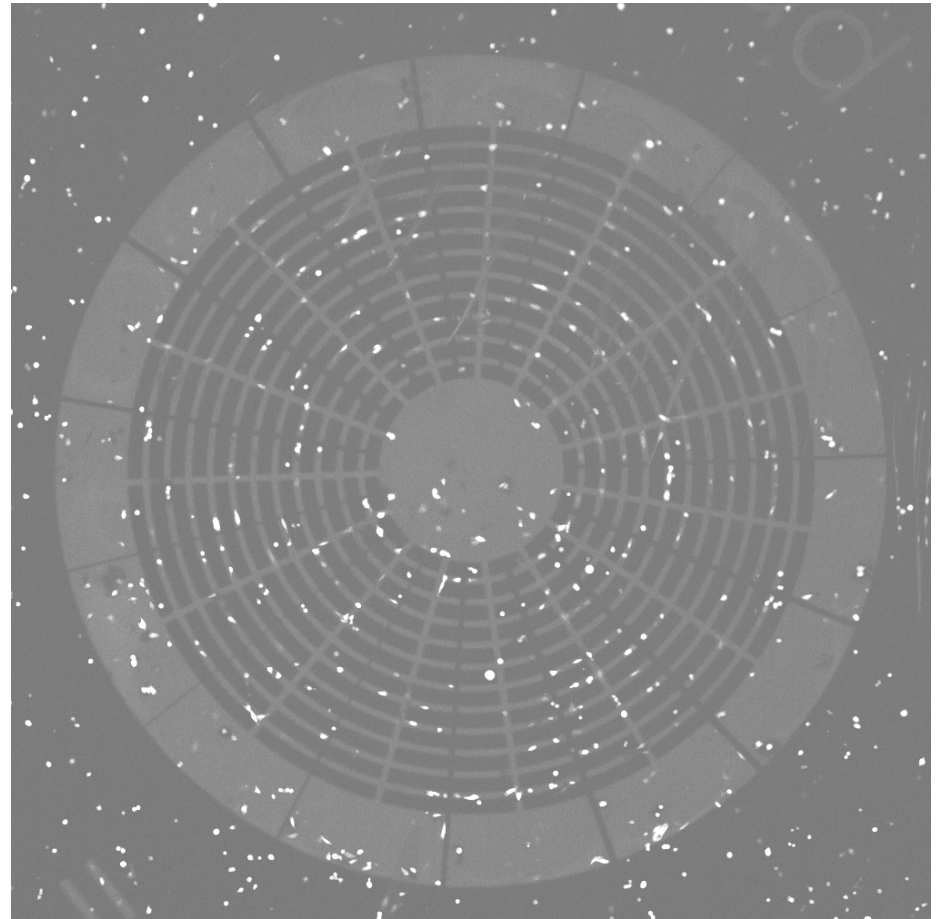
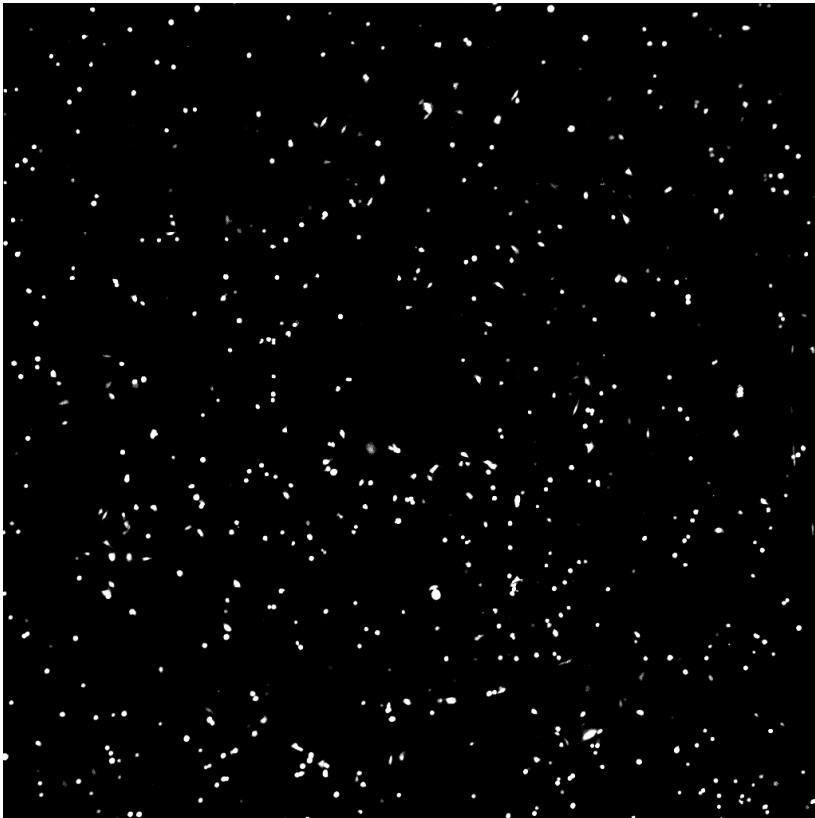
## Cell Signaling



# What do they do

3

## Cell Migration

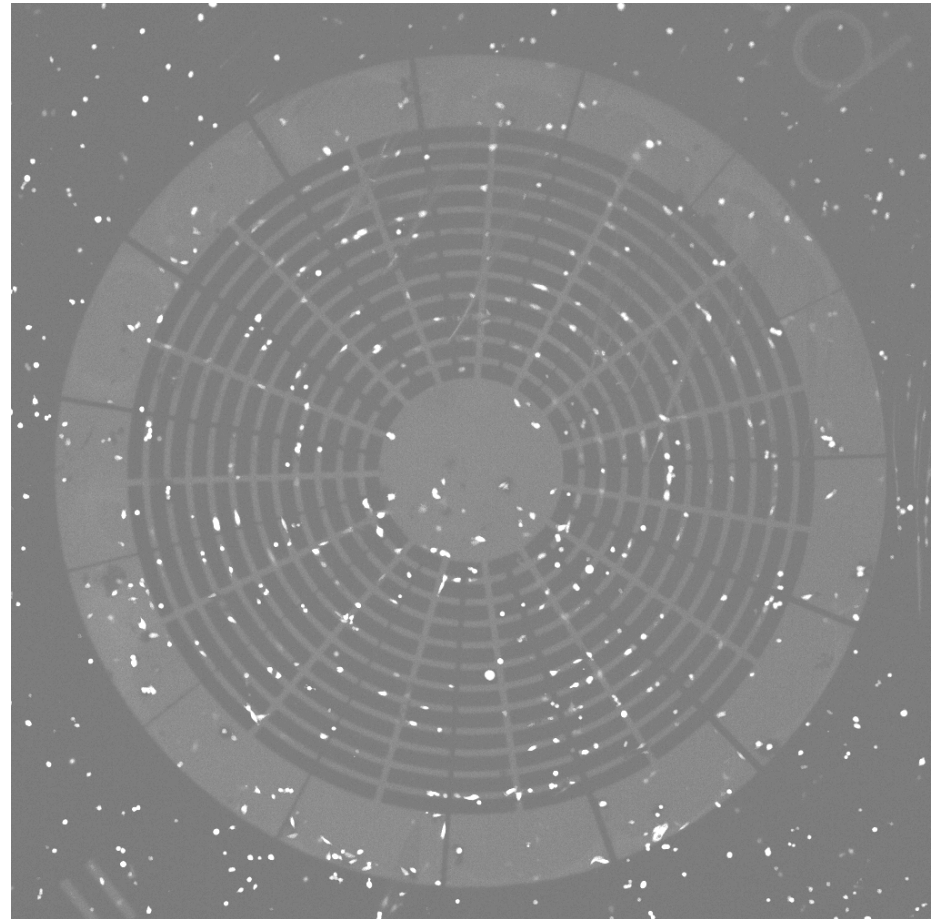
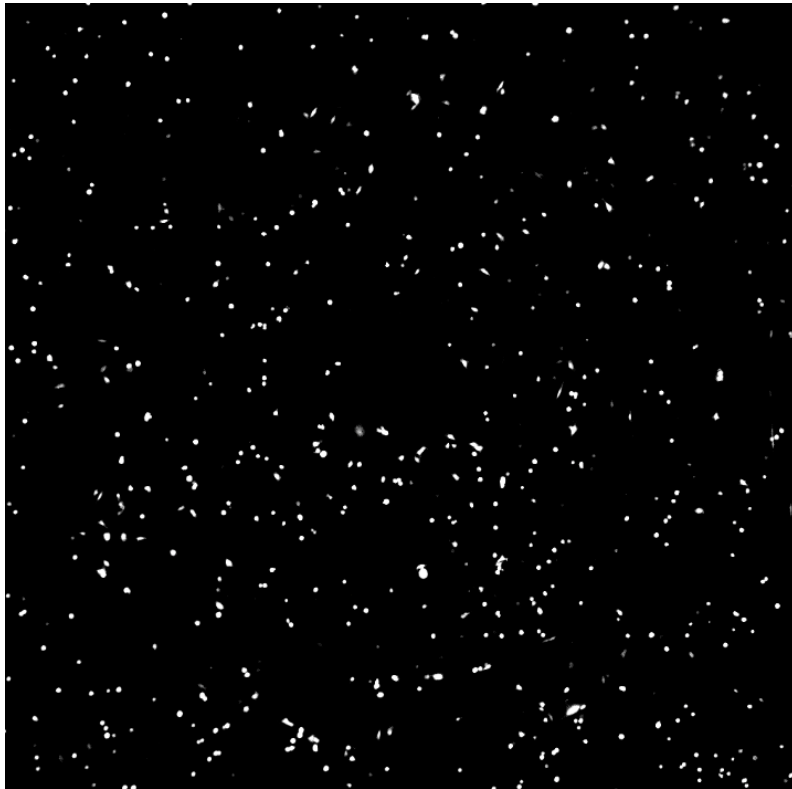




# What do they do

3

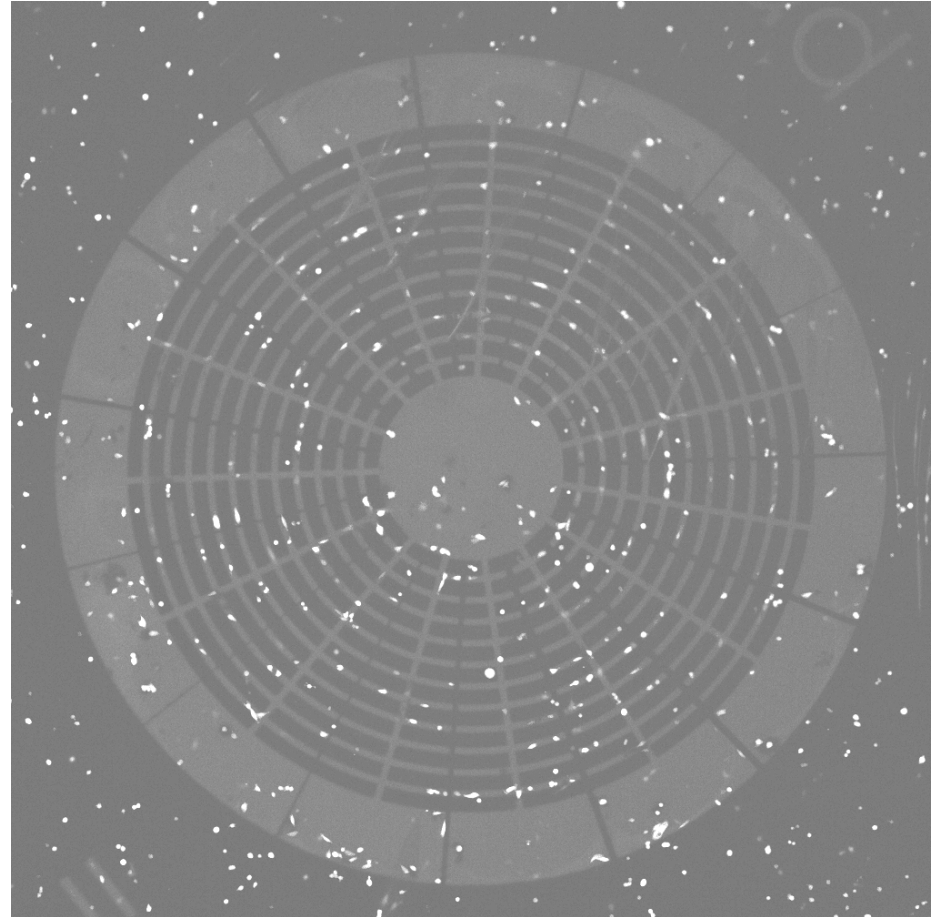
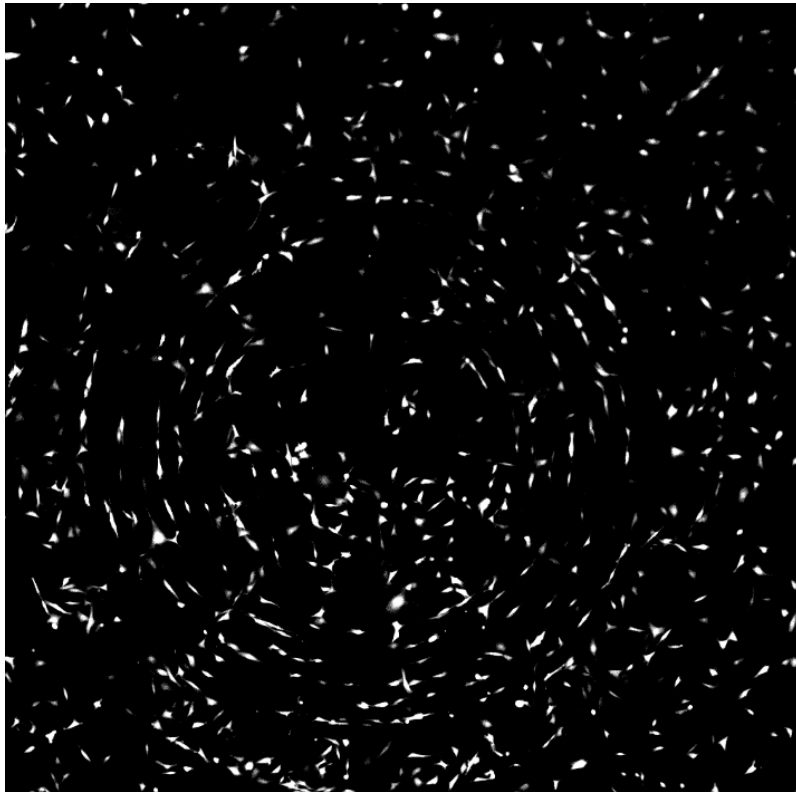
## Cell Migration



# What do they do

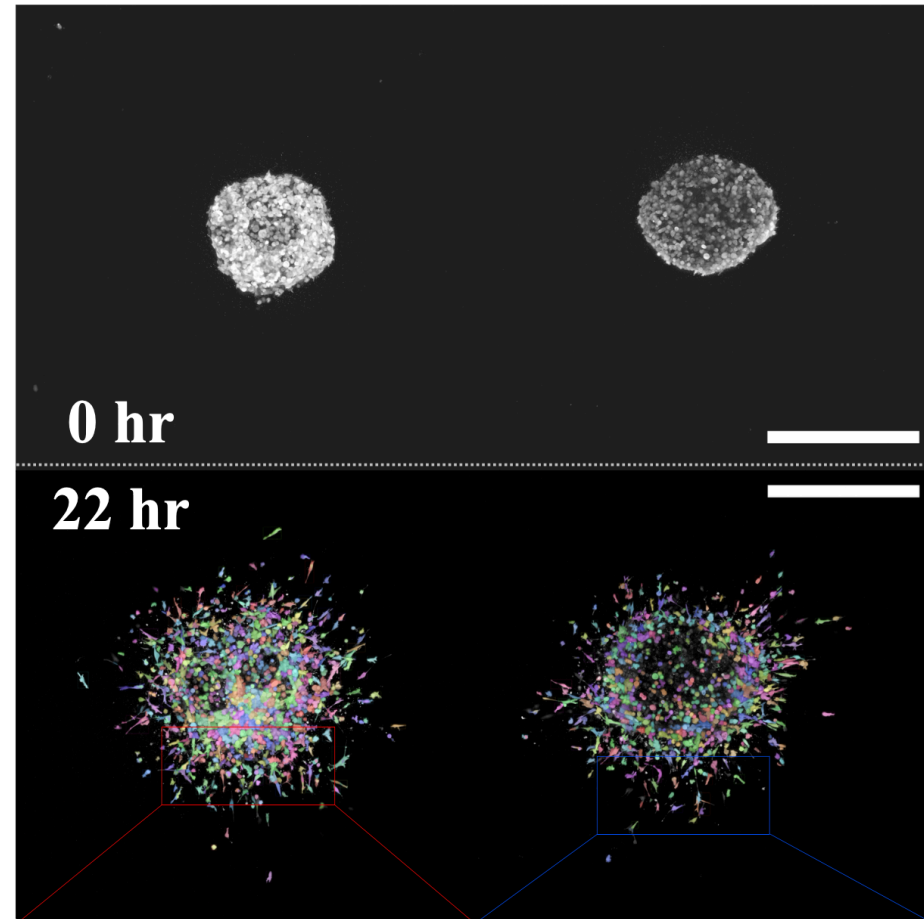
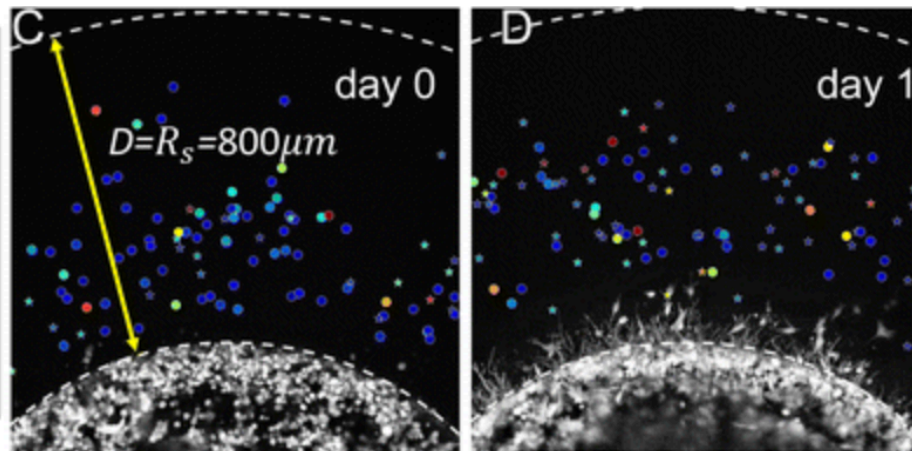
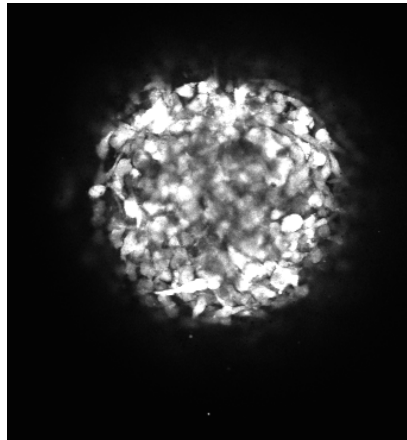
3

## Cell Migration



# What do they do

## Cell Invasion





# How do they do it?

## Culturing and Tagging Cells

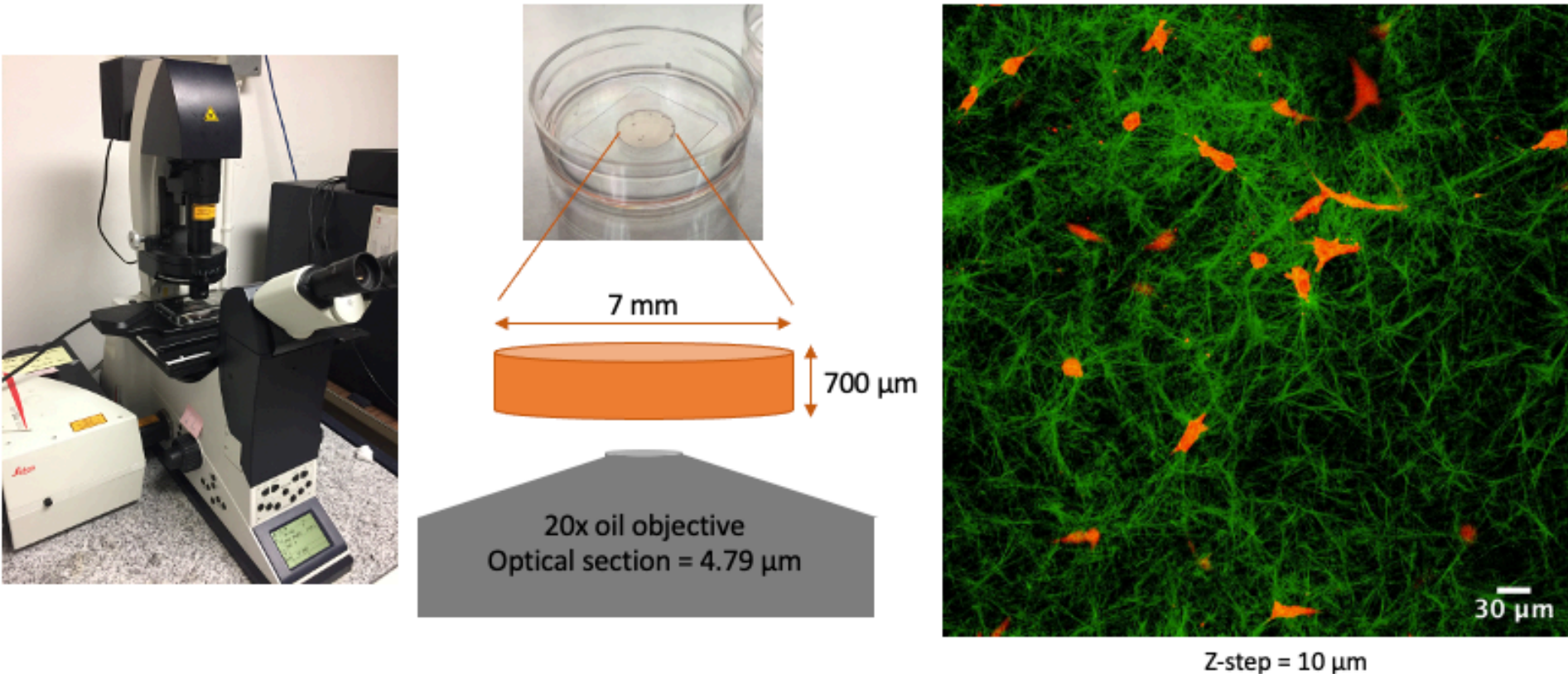


# How do they do it?

4

## Confocal Microscopy – the art of 3D imaging

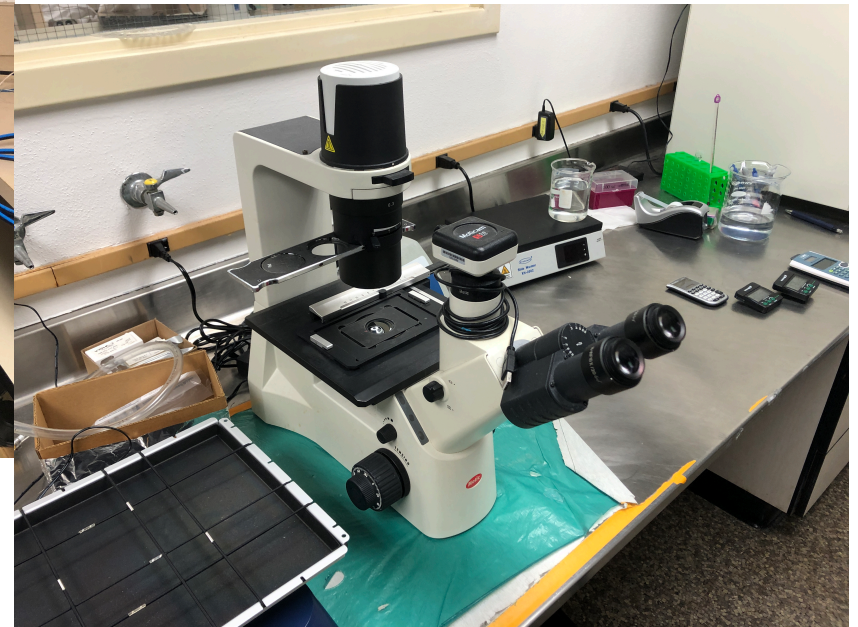
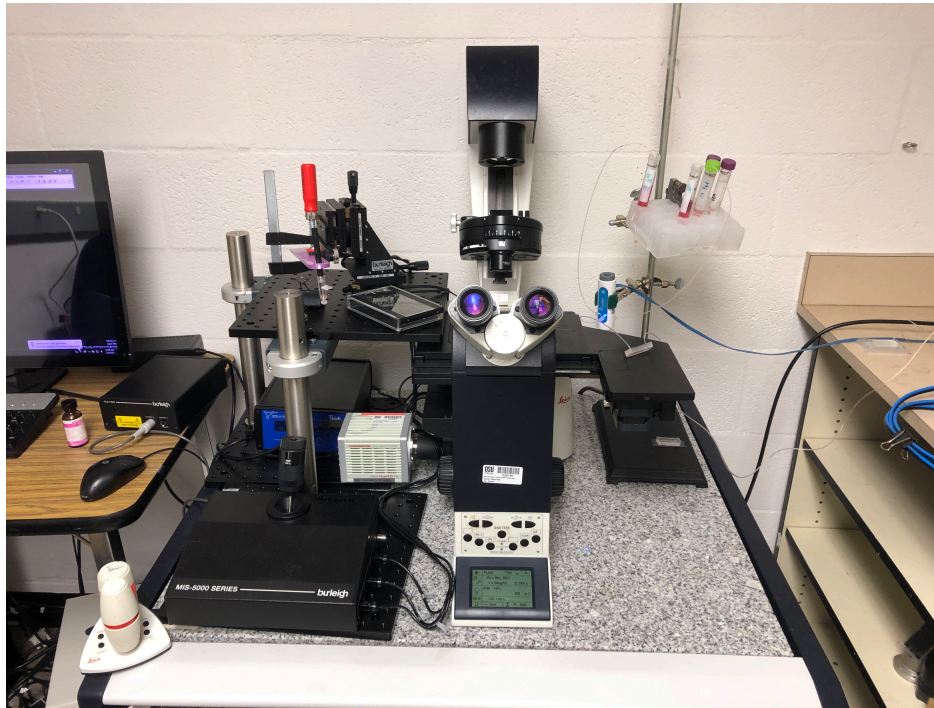
- multiple lasers allow for simultaneous multi-channel imaging





# How do they do it?

4



# How do they do it?

4



Analysis Software



# Where do graduates go?

3

- Postdoctoral Research
  - Mayo Clinic
  - King Saud University
- Private Sector
  - Microsystem Engineering Inc.



# How are they funded?

8

- Primarily funded in the following order
  - NIH
  - NSF
  - DoD

# What skills do you need/gain?

- Skills Needed
  - A curious mind
  - Self Motivation
- Skills Gained
  - Familiarity with different microscopes
  - Learn to culture different cell lines
  - Image Processing with software and deep learning

# Anything special?

- Safety?
  - Apart from the general training there are quite a few different Bio-safety related trainings
    - Formaldehyde, autoclave safety
    - Hydrofluoric acid/ Hazardous waste awareness
    - Bloodborne Pathogen training which is only given as a seminar
- Travel?
  - APS Conferences
  - Biophysics conferences
- Strange hours?
  - A regular schedule for experiments is a common theme (Once every 3 days, once every day, etc.)
  - Time in the lab typically is later in the evening rather than early in the morning

# How do I learn more about them?

## □ Papers?

- “Temporal signals drive the emergence of multicellular information networks” Guanyu et al.
- “The Projection-Enhancement Network” Eddy et al.
- “Morphodynamics facilitate cancer cells to navigate 3D extracellular matrix” Eddy et al.

## □ Posters?

- There are many posters outside of WNGR 110 that are great to learn more

## □ Website?

- <https://sites.google.com/site/biophysicsbosun/research>