

Slides, videos, links and more:

<https://github.com/physicell-training/00-Welcome-to-training>

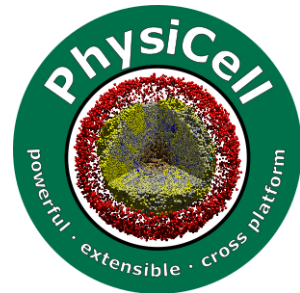
# Module 00: Welcome to PhysiCell Training!

Paul Macklin, Ph.D.

 @MathCancer

## PhysiCell Project

last updated: November 10, 2019



**LUDDY**

SCHOOL OF INFORMATICS, COMPUTING, AND ENGINEERING

PhysiCell Project

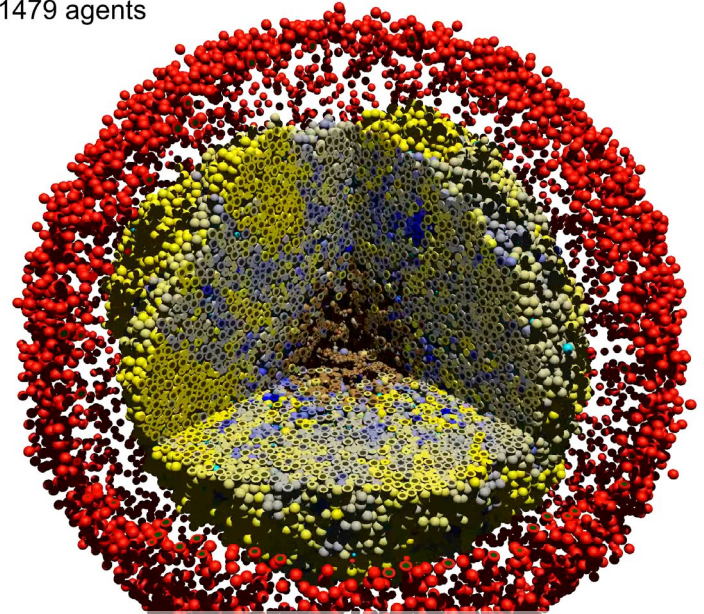
**PhysiCell.org**

 @PhysiCell

# Welcome to PhysiCell!

- PhysiCell is an agent-based modeling platform for multicellular systems biology and biological systems engineering.
- It's designed to balance flexibility and performance and work on many operating systems, like Linux, OSX, and Windows.
- We're excited that you're using PhysiCell for your own projects. We made these training materials to help get you started.

Current time: 14 days, 0 hours, and 3.00 minutes  
111479 agents



**Cancer immunology demo**

[\[View on YouTube \(4K\)\]](#)

# Training goals

- Introduce the core concepts behind PhysiCell
- Gain intuition and experience in key PhysiCell elements with interactive, cloud-hosted mathematical models (educational "microapps")
- Show programming tips and tricks
- Show best practices
- Provide easy reference materials to supplement user documentation
- Highlight additional references and resources

# About these training materials

- The training materials are divided into a series of short modules.
- Each module is about 10-15 minutes long.
- Each module has:
  - a video recording (distributed on multiple platforms)
  - downloadable slides (as PDF)
  - open licensed source material (MIT licensed, open education resources)
- We will supplement the slides with interactive ***educational microapps***:
  - cloud-hosted interactive models designed to illustrate specific PhysiCell concepts

# General themes

- **Introductory materials:**
  - Learn the basic structure of PhysiCell
- **Greater depth materials:**
  - Dig into the details of cell phenotype and other key components
- **Advanced and additional topics:**
  - Learn best tricks and preferred code practices
  - Unlock "hidden" features
- **PhysiCell Community:**
  - Learn about the broader PhysiCell community and resources
  - Learn how to contribute to the PhysiCell software ecosystem

# Choose your own adventure

## Super short

### Target audience:

- Users who are familiar with other agent-based modeling frameworks who want to get running very quickly.

### Approach:

- Skip more detailed modules. Refer back to modules as references.

## Intermediate

### Target audience:

- Users who are familiar with other agent-based modeling frameworks who want better introductions to the code.

### Approach:

- Skip some intro details.

## Full training

### Target audience:

- Users who are new to agent-based modeling, or want fuller background

### Approach:

- Enjoy everything. :-)



**LUDDY**

SCHOOL OF INFORMATICS, COMPUTING, AND ENGINEERING

PhysiCell Project

PhysiCell.org

 @PhysiCell

# Getting help

- For help, please visit the PhysiCell ticket system:
  - <https://sourceforge.net/p/physicell/tickets>
- Please see <http://PhysiCell.org> for other support options.
- Visit [@PhysiCell](https://twitter.com/PhysiCell) on Twitter for up-to-date news.
- Please note that direct emails to project staff may receive delayed responses compared to the official channels above.

# Next steps

**Super fast:** Please proceed to 01 (What you need for PhysiCell)

**Intermediate:** Please proceed to 01 (What you need for PhysiCell)

**Full training:** Please proceed to 01 (What you need for PhysiCell)

**Link:** <https://github.com/physicell-training/01-What-you-need>

**More materials:** <https://github.com/physicell-training/master-list>



# Credits and acknowledgements

<b>Module Planning:</b>	Paul Macklin
<b>Slides:</b>	Paul Macklin
<b>Recording:</b>	Paul Macklin
<b>Post-production:</b>	Paul Macklin, Drew Willis*, Kali Konstantinopoulos*
<b>Microapps:</b>	not applicable

\* denotes undergraduate researcher

## Funding:

### PhysiCell Development:

- Breast Cancer Research Foundation
- Jayne Koskinas Ted Giovanis Foundation for Health and Policy
- National Cancer Institute (U01CA232137)
- National Science Foundation (1720625)

### Training materials:

\* Administrative supplement to NCI U01CA232137 (Year 2)



JAYNE KOSKINAS  
TED GIOVANIS

Foundation for  
Health and Policy



NATIONAL  
CANCER  
INSTITUTE



BCRF



LUDDY

SCHOOL OF INFORMATICS, COMPUTING, AND ENGINEERING

PhysiCell Project

PhysiCell.org

@PhysiCell