

From Images to Knowledge with ImageJ & Friends

virtual conference

Nov 30 - Dec 2, 2020

Stephan Preibisch, Stephan Saalfeld, Anna Kreshuk,
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Conferences



Introduction to Image Analysis and Machine Learning With CellProfiler and CellProfiler-Analyst

Tutors: Nasim Jamali (njamali@broadinstitute.org)
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Session 1: 2020-11-30 20:00 UTC – 2020-12-01 00:00 UTC

Session 2: 2020-12-01 15:00 UTC – 2020-12-01 19:00 UTC

Information about the tutors

Dr. Nasim Jamali has a PhD in Cellular and Molecular Biology from University of Wisconsin-Madison; she is currently a Postdoctoral Fellow in Dr. Anne Carpenter's group (aka the Imaging Platform) at the Broad Institute of MIT and Harvard. By creating image analysis pipelines, she helps researchers extract meaningful information from their microscopy images.

Dr. Pearl Ryder graduated from Emory University with an MD and a PhD in Biochemistry, Cell and Developmental Biology and is currently a postdoctoral fellow in bioimage analysis in Dr. Anne Carpenter's group at the Broad Institute of MIT and Harvard. She uses her background in cell biology and medicine to advance and share quantitative image analysis.

Title and abstract of the tutorial

Introduction to Image Analysis and Machine Learning With CellProfiler and CellProfiler-Analyst

In this tutorial we will discuss principles of quantitative image analysis, such as thresholding, object segmentation, and measurement generation. We will discuss how to use those principles to create pipelines in CellProfiler, and how to then use the measurements from CellProfiler in CellProfiler-Analyst to explore phenotypes. Finally, we will discuss how to make pipelines in CellProfiler for analyzing 3D objects and images, based on the same principles as 2D analysis.

Preliminary outline

1. Introduction and participant introductions (1h)
2. Image analysis and data analysis with CellProfiler and CellProfiler-Analyst (2.5h)
3. Adapting image analysis workflows to 3D (30 minutes)

Technical requirements

Windows or Mac 10.14+.

The users should download and open CellProfiler 4.0 and CellProfiler-Analyst, from CellProfiler.org and CellProfilerAnalyst.org **prior to the workshop**. The users should follow Java installation instructions provided on the website for CellProfiler-Analyst. If users experience technical difficulties with installation, please reach out for help via forum.image.sc.

Linux

Linux users can install CellProfiler via pip in Python 3.8+ - consult [our wiki](#) for more information. CellProfiler-Analyst can theoretically be installed still in Python 2.7 by [cloning our repository](#) and following the install instructions- for a list of package versions confirmed to work as of 2018, check out this [post](#) from the Image.sc forum. Linux users who cannot install CellProfiler-Analyst are still welcome to participate, as the CellProfiler-Analyst material will also be demonstrated live.

