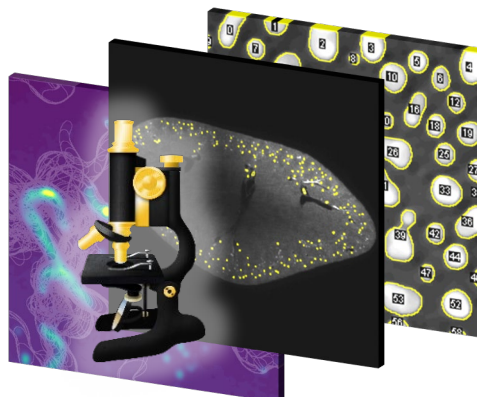


JSC 2024

JIPIPE SPRING COURSE



Date: 18.3.2024-22.3.2024
Time: 9:00-12:00 and
14:00-17:00 (Mo, Tu, We)

Local Organizer: Prof. Dr. Marc Thilo Figge
Lecturers: Dr. Zoltan Cseresnyes, Dr. Ruman Gerst
Affiliations: Applied Systems Biology, Leibniz Institute for Natural Product Research and Infection Biology, Hans Knöll Institute Jena
Contact: angela.koehler@uni-jena.de (for organizational questions),
thilo.figge@leibniz-hki.de (for content-related questions)

What will you need: if possible, bring your laptop with Windows 10/11, Linux, or MacOS¹

What will be covered: introduction to basic optics and microscopy techniques; introduction to image analysis, basic and advanced image processing with JIPipe². Previous knowledge of ImageJ is an advantage but not required.

Time	Subject
Monday	Basic optics, fluorescence, and confocal microscopy. Introduction to image analysis and JIPipe
Tuesday	Introduction to JIPipe (interactive), batch processing
Wednesday	Common applications of JIPipe
Wednesday afternoon, Thursday	Homework assignment
Friday	Zoom meeting on homework discussion and Q&A session

Microscopy: the main principles of optics; the basics of light microscopy; confocal microscopy.

Image analysis: the basics of image science, image processing with JIPipe; batch analysis of large number of images with JIPipe. Workflow building in JIPipe, organization with compartments and nodes. Basic and advanced image analysis examples; common applications of batch processing with JIPipe.

Homework: one and a half days will be provided to complete a set of microscopy and image analysis tasks. The latter will require access to a PC, where the JIPipe framework is available. Installation packages of JIPipe will be provided.

¹ Not the preferred option due to the differences between MacOS and other operating systems

² R. Gerst, Z. Cseresnyes, M.T. Figge, Nature Methods (2023): <https://www.jipipe.org/>