

MicroTAS 2021 Workshop 13 Information

WORKSHOP TITLE: 3D Printing for Microfluidics and Open-Source Devices

PRESENTER AFFILIATION:

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WORKSHOP DESCRIPTION:

3D printing converts computer-assisted design (CAD) into a three-dimensional physical object, and is particularly useful for the fabrication of non-planar microfluidic devices or for generating open-source laboratory tools. The workshop will introduce 3D printing, the types of 3D printers and how they can be used to create fluidic devices. Attendees will leave with an overview of the current state of the field, opportunities and limitations, and whether 3D printing is right for their application.

OVERVIEW OF MATERIAL TO BE COVERED AND WHAT ATTENDEES CAN EXPECT TO TAKE AWAY FROM THE WORKSHOP:

The workshop will contain three lectures, covering the following topics:

1. Overview of advanced 3D printing for state-of-the-art microfluidics fabrication. Topics include foundational principles, design considerations, 3D printed components including valves and pumps, and example devices demonstrating integration of many components.
2. Applications of 3D printing for organs on chip, including the cell culture system itself and peripheral systems such as fluidic pumps.
3. Modular approaches to microfluidics using 3D printed parts, including integration of mixers and analytical modalities such as spectrophotometry into the chip

WHO SHOULD ATTEND

The workshop is an interactive forum to discuss the opportunities and capabilities of 3D printing fluidic devices. The workshop is catered for those who are new to 3D printing and want to understand the technology base, as well as for experienced 3D printers who wish to share their experience and learn tips and tricks from other printers to create the best fluidic devices possible.

PARTICIPANTS WILL NEED THE FOLLOWING:

Likely nothing, unless they cannot use a phone during the panel discussion, in which case indicate that a laptop is needed.

For those attending in-person, a laptop or iPad with headphones are required.