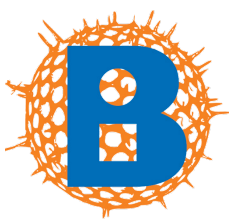


BioBus DIY microscope

The DIY microscope was developed by Francesca Anselmi from BioBus (www.biobus.org) and Josh Sanders from Sanworks (<https://sanworks.io/>), as a tool to teach students how to build their own optical instrument. Specific add-ons were designed for the JHC-NYU course, included a holographic module by David Grier and Cheong Fook, and a light source module by Zoe and David Grier.

The DIY microscope is intended as a **open source community project**. We are currently assembling materials to create a dedicated webpage that will include detailed instructions and .stl files to build the microscope, as well as lesson plans and didactic materials to be used by students, schools and people interested in learning optics and the physics of light.





EDUCATIONAL VALUE

- learn by making
- experimenting with basic optics
- understanding the structure of a microscope

More than an affordable microscope, the BioBus DIY microscope is conceived to be an educational tool. Worksheets will guide students through a set of optical exercises of increasing difficulty.

- Image formation with lenses
- Infinite conjugation and microscope objectives
- Illumination strategies and depth of focus, angular aperture
- Optical resolution and magnification

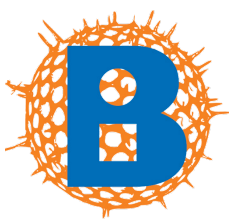
At the end of the exercises, the students will have assembled the entire microscope, and will be ready to use it to image their favourite samples!

TECHNICAL POINTS

- 3D printed structural components
- Customly assembled light source
- Record images and videos with your phone camera

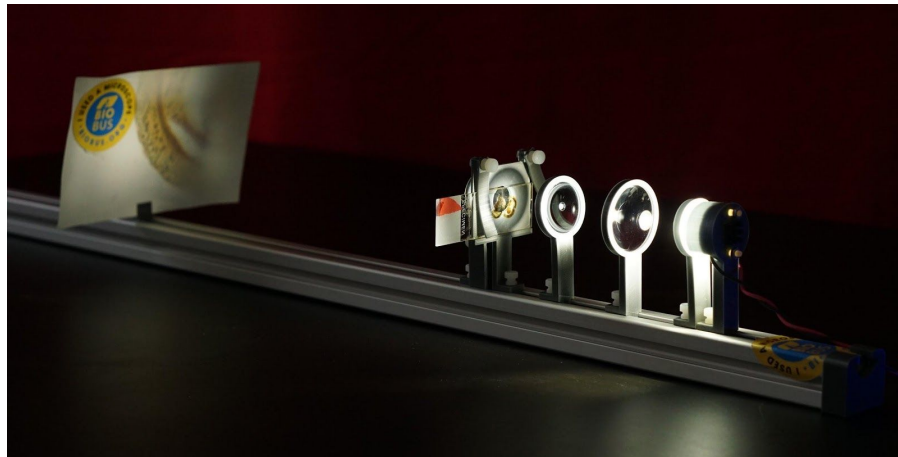
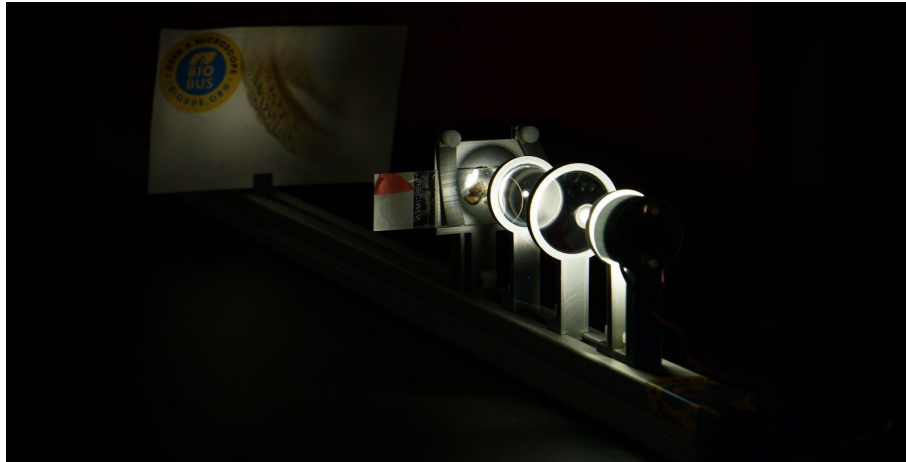
All the structural components of the BioBus DIY microscope have been designed to be easily 3D printed. In addition to saving money on the components themselves, this allows using surplus lenses, instead of standard size ones, allowing for both high quality and low cost. Together with the

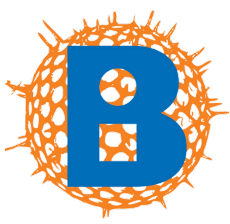
The microscope can be flexibly aligned for 4X or 20X magnification, in order to see small organisms and cells. Students can take pictures and videos of the samples with their phone and share it on social media.



BioBus DIY Microscope Advanced Curriculum

Photogallery





BioBus
DIY Microscope Advanced Curriculum

DIY microscope imaging brain slices

