

Open science hardware: Increasing the impact of academic research

Dr. Julieta Arancio, Drexel University

jca88@drexel.edu

[@cassandreces](https://twitter.com/cassandreces) / [cassandreces@scholar.social](https://scholar.social/cassandreces)

Conventional path for academic hardware innovations



IP Training



Supervisors advice



Career evaluation



Tech Transfer Offices

Some problems with this system



Slows down collaboration



Impedes customization



Expensive for universities



Missed impact opportunities



An alternative paradigm

Some business models for open science hardware

Selling components, kits, devices


Selling design services

Selling technical support

Trademarks

Example 1: OpenEphys

Search or jump to... Pull requests Issues Codespaces Marketplace Explore

 **Open Ephys**
We develop and distribute open-source tools for neuroscience research
30 followers <http://open-ephys.org/> [@OpenEphys](https://twitter.com/OpenEphys) info@open-ephys.org Verified Follow

Overview Repositories 53 Projects Packages People 6

Pinned

plugin-GUI (Public)
Software for processing, recording, and visualizing multichannel electrophysiology data
C++ 143 630

open-ephys-python-tools (Public)
Python code for interacting with the Open Ephys GUI
Python 10 13

low-profile-spi-headstage-64ch (Public)
Design files of the low profile spi headstage with 64 channels.
PLSQL


acquisition-board (Public)
Hardware interface for streaming up to 512 channels of neural data via USB
PostScript 40 29

shuttle-drive (Public)
Next generation tetrode drive implant
17 14

onix-headstage-64 (Public)
Serialized, multifunction headstage for tetrodes and silicon probes
HTML 1

Repositories

People



Top languages

- HTML
- MATLAB
- C++
- Python
- CSS

Most used topics

- electrophysiology
- neuroscience
- open-ephys
- hardware
- oshw

Report abuse



open-source electrophysiology

Careers
About Us
Resources
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List of available tools
Training
Acquisition Systems & Headstage:
Miniscope V4
Miniscope V3 WireFree
Miniscope Platform DAQs
MiniCAM
NINscope DAQ
Twister3
FED3.1
Cyclops LED Driver
ShuttleDrive Tetrode Implant
pyControl & pyPhotometry
Repair Policy
Clothing / Merch
Download the Open Ephys GUI

Home

Click on the **STORE** link on the main menu to access the store categories and get more information about the tools.

Search

Open Ephys Training


Extracellular
Ephys Acquisition
Neurokit
€340.00


Training: Acquisition
Board
€1,500.00


Acquisition Board with
Training
€4,255.00


Starter Kit with Training
€7,978.00

Acquisition System & Headstages


Acquisition Board
€2,955.00


Starter Kit
€6,728.00


I/O Board
from €12.50


Low-profile SPI
Headstage 64ch
€1,345.00


NanoZ adapter for 64ch
EIB Hirose
€137.00

Example 2: OpenTrons



PROTOCOLS

Choose the method that's right for you

A protocol is the code that runs the robot through your experiment. We've built different ways to create a protocol that are accessible for everyone – from the automation rookie to the experienced python coder.

Best for users that want a unique or complex protocol – fast



Custom Protocol

Get our experts to create a protocol optimized for your experiment

[Shop custom protocols >](#)

\$1000

Best for new users looking to gain experience



Protocol Library

Browse well-documented, open-source protocols

[Browse protocol library >](#)

FREE

Best for users who want to create a new protocol – without having to code



Protocol Designer

Use our intuitive drag-and-drop interface to create new protocols

[View protocol designer >](#)

FREE

Best for users with Python experience



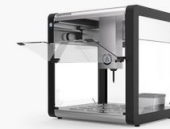
Python Protocol API

Write your own protocol using our open-source Python Protocol API

[Get started with Python API >](#)

FREE

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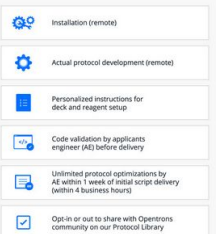
Universal & Filter Tips

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Consumables

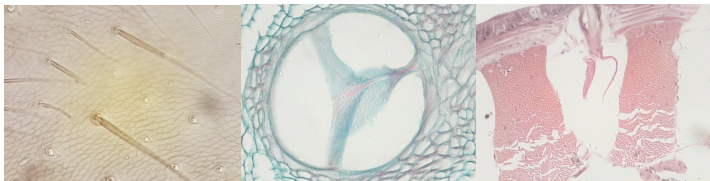
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Services

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Example 3: OpenFlexure Microscope



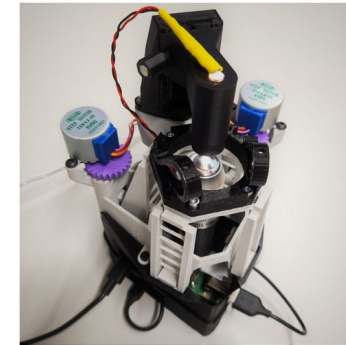
openflexure.org

Microscope Delta Stage Block Stage Software Community About

Build a Microscope

To build a standard microscope configuration, download the STL files from the options below, and follow the assembly instructions.

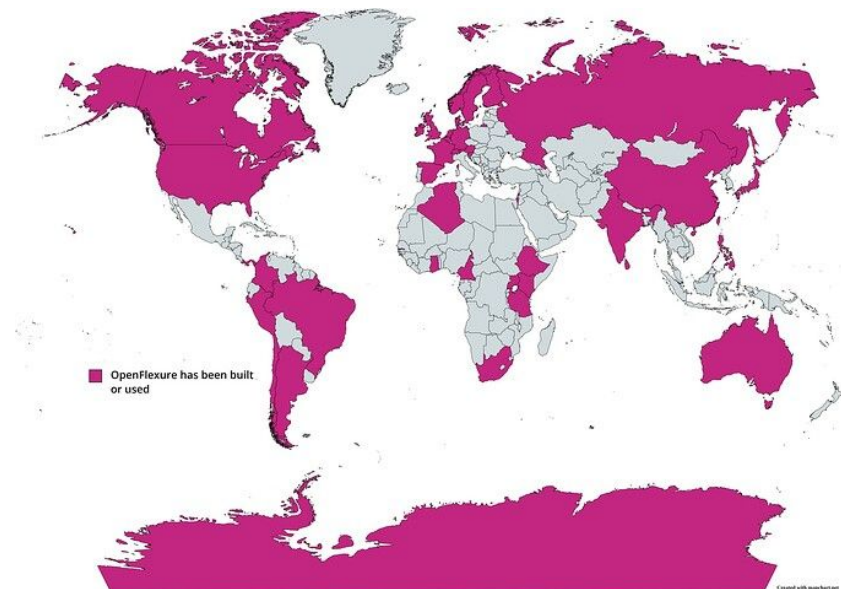
Before you start building, you may find it useful to look at the [interactive view of the microscope](#).



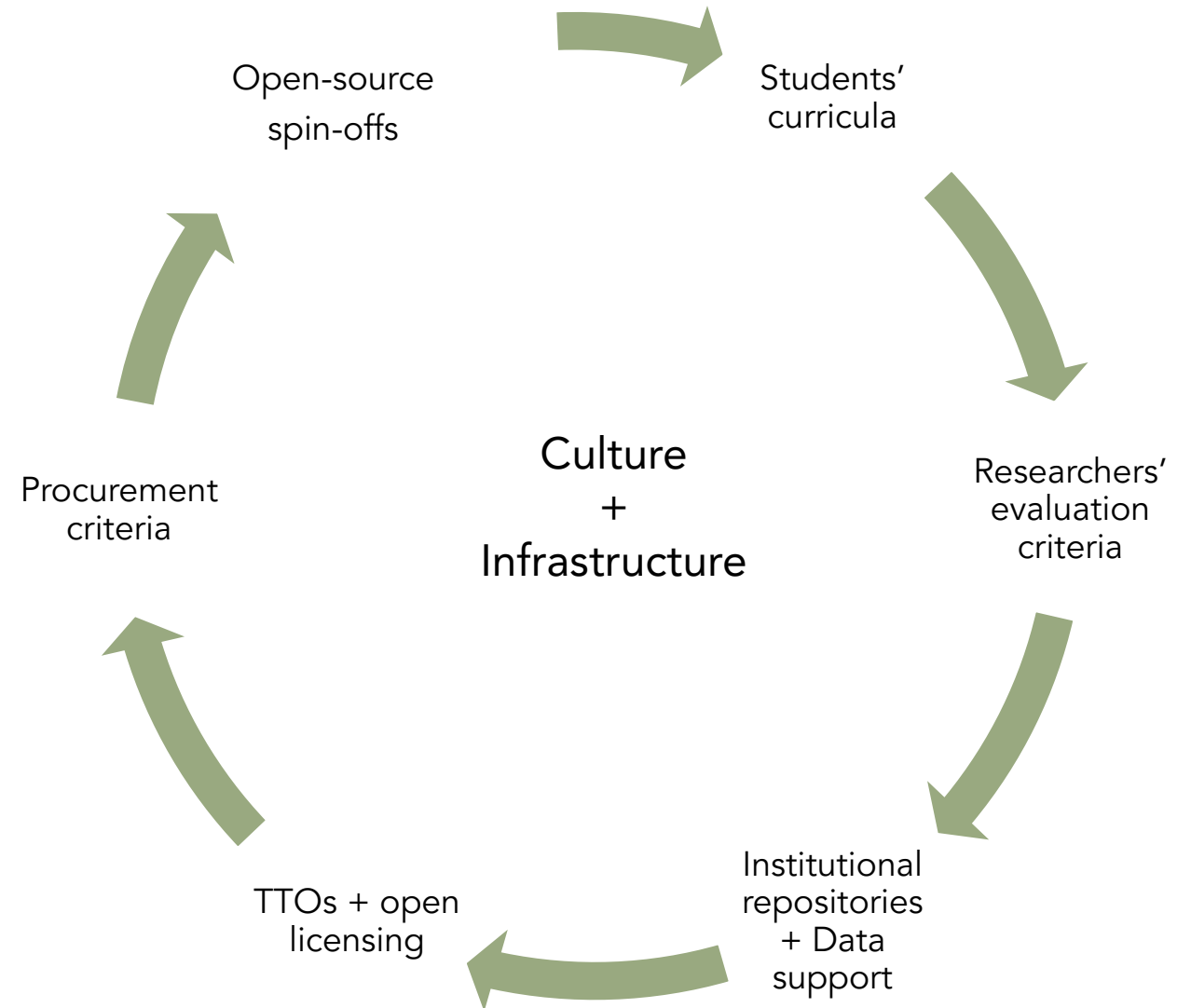
OpenFlexure Microscope v6

1. Configure and Download STLs

2. Follow our Assembly Instructions



How do we make open a feasible option?



Better tools in more hands...



AFRICA
OPEN SCIENCE
HARDWARE



REGOSH



Customisable



Repairable



More accessible



No vendor lock-in



More & better research

Thank you!

Dr. Julieta Arancio, Drexel University

jca88@drexel.edu

[@cassandreces](#) / [cassandreces@scholar.social](#)

Learn more at:

openhardware.science

