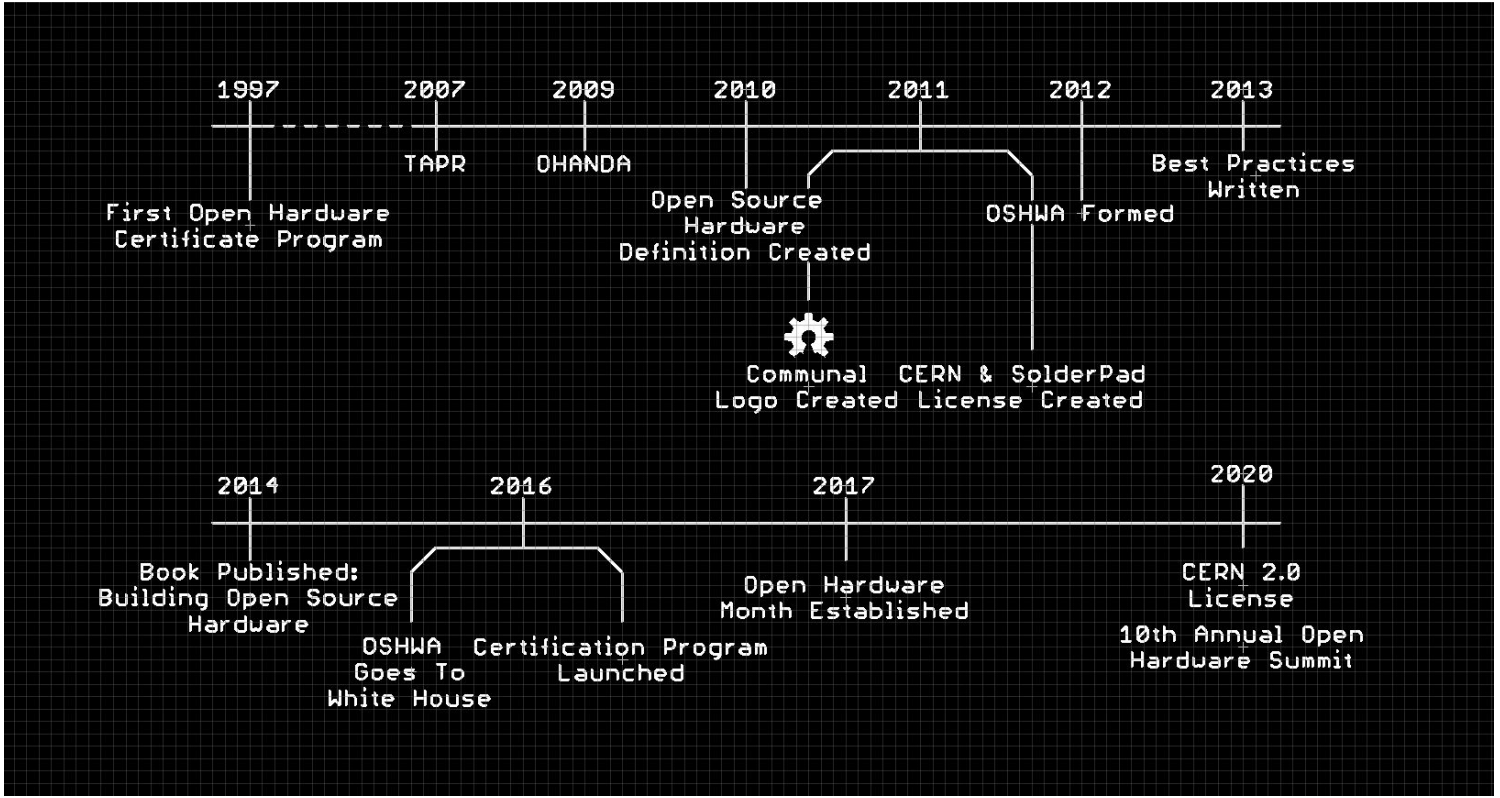
# CONGRATS CERN OSPO!

I’m ecstatic! - Alicia Gibb / Seidle

# What is Open Source Hardware


- Remix
- Remake
- Replicate
- Remanufacture
- Redistribute
- Resell
- Study and Learn from

# Brief History of Open Hardware



# Examples of Open Hardware

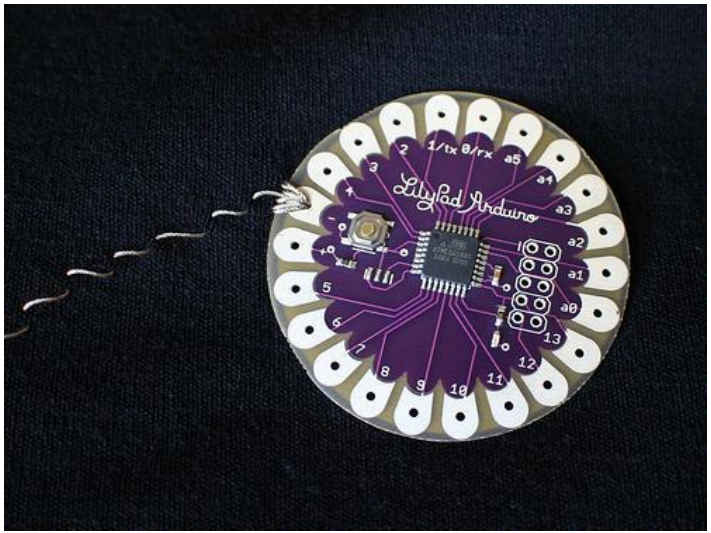




Image CC-By-SA: SparkFun Electronics

# Examples of Open Hardware

Open Source Hardware Pick and Place

Image CC-BY-ND: Opulo

# Examples of Open Hardware

Image CC-BY-SA: System 76

# Examples of Open Hardware

Open Source Hardware Hammock

Image CC-By-SA: Hummingbird Hammocks

# Examples of Open Hardware

Open Source Hardware Perfume

**Top Note**

Marine + Ozone Accord x 2 drops of 10% dilution - $3/4ml

**Middle Notes**

Hexenol-3-cis x 2 drops of 10% dilution - $6.75/4 ml

Neroli + Orange Blossom x 3 drops of 10% dilution - $6.00/4ml
(alternative to Norlimbanol, choose only one)

**Base Notes**

Cedarwood, Texas x 3 drops of 10% dilution - $2.50/4 ml

Norlimbanol (Firmenich) x 3 drops of 10% dilution - $5.25/4ml
(alternative to Neroli, choose only one)

# Examples of Open Hardware in Science

Open Source Lab Equipment


Screenshot: https://en.wikipedia.org/wiki/Open-Source_Lab_(book)

# Examples of Open Hardware in Science

3D printed Wind Tunnel

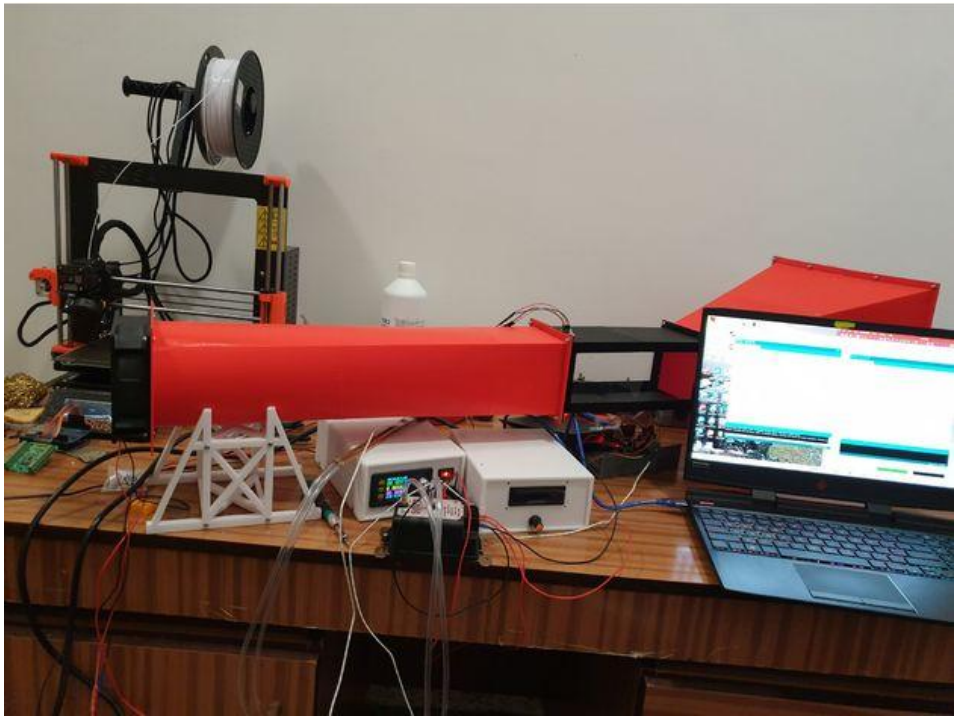


Image CC-BY-SA: https://github.com/majaczech/wind-tunnel

# Examples of Open Hardware in Science

A Parametric open source hardware Geological Simulator

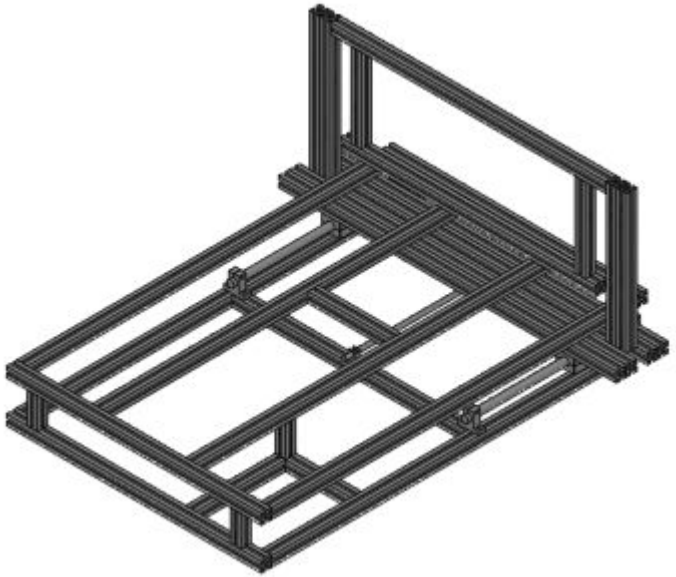


Image CC-BY: https://github.com/URJCMakerGroup/TFG-Cristina-Fernandez/wiki

# Examples of Open Hardware in Science

Atrial Fibrillation Detection Blood Pressure Monitor

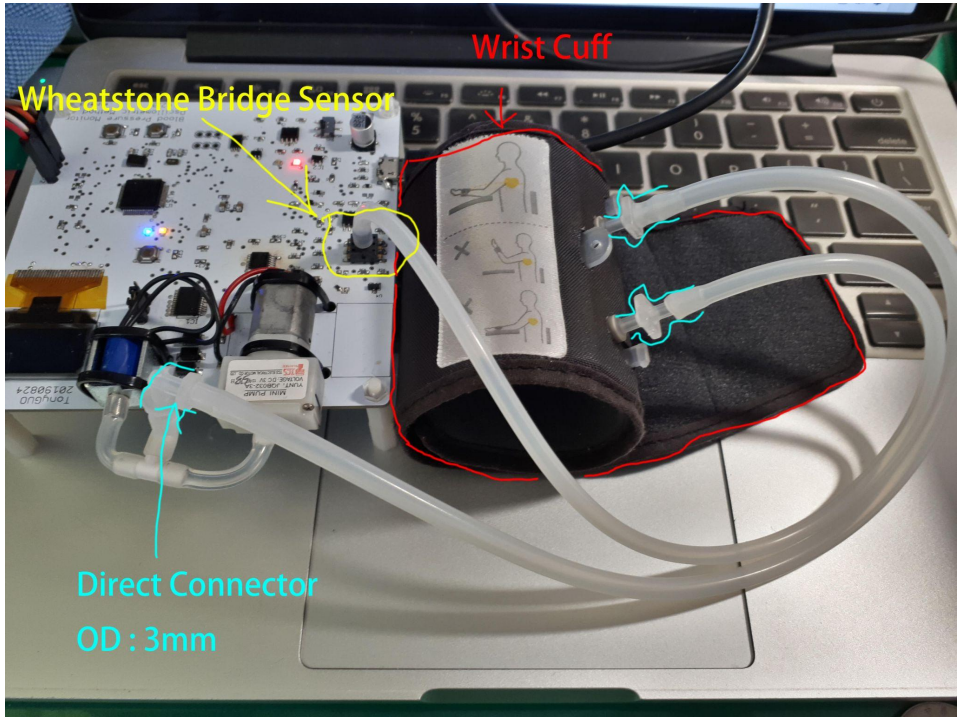
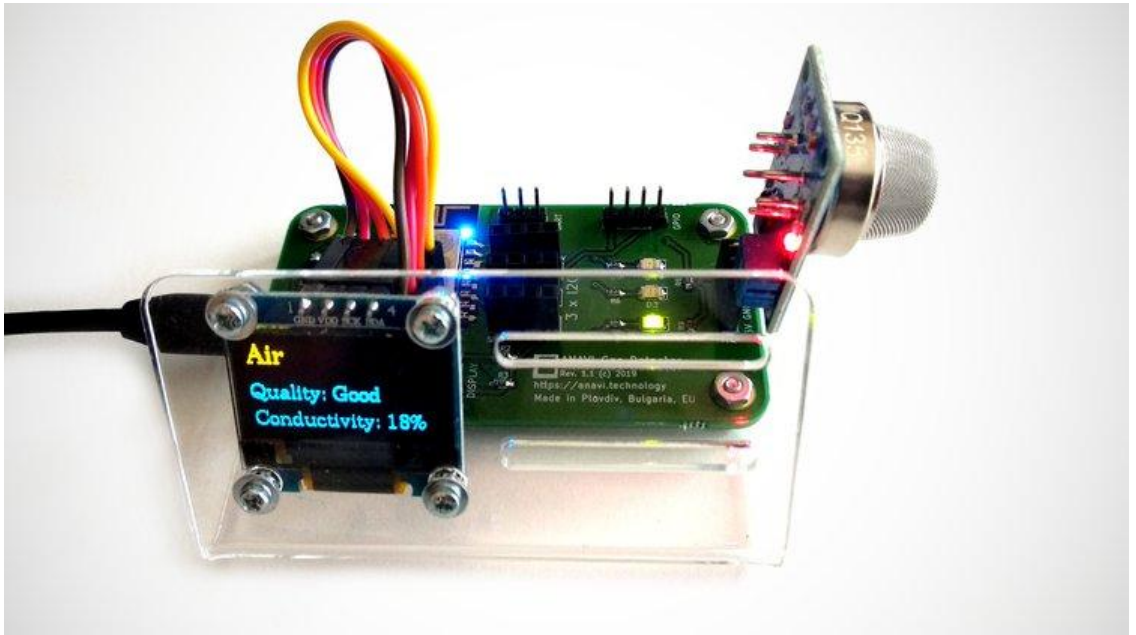



Image MIT license: https://github.com/GCY/Atrial-Fibrillation-Detection-Blood-Pressure-Monitor-Oscillometric-Method-

# Examples of Open Hardware in Science

ANAVI Gas Detector



# Examples of Open Hardware in Science

Imaging Rig for Microfluidic Blood Analysis

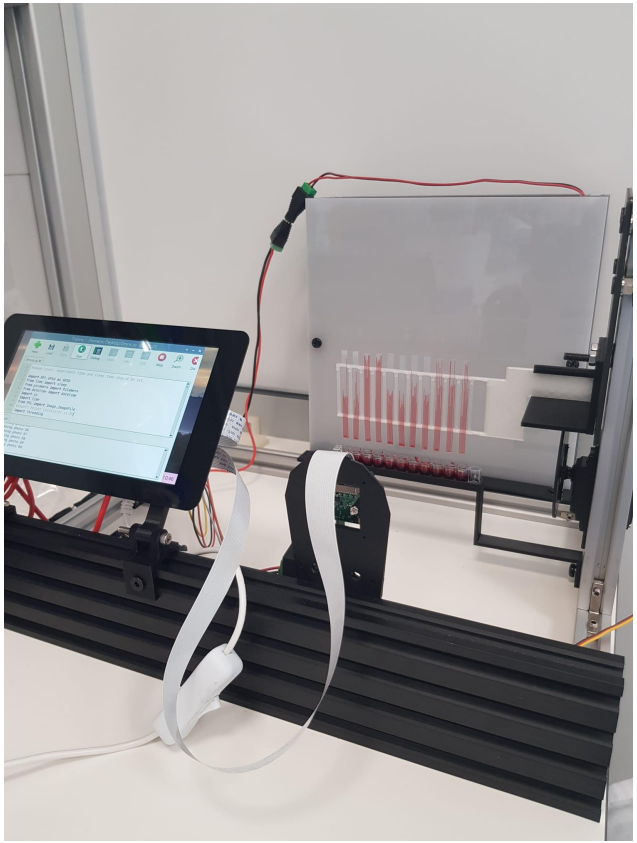


Image CC-BY-SA: Rüya Meltem Sariyer
https://gitlab.com/ruyameltem/imaging_rig

# Examples of Open Hardware in Science

Open Hardware Ventilator Examples

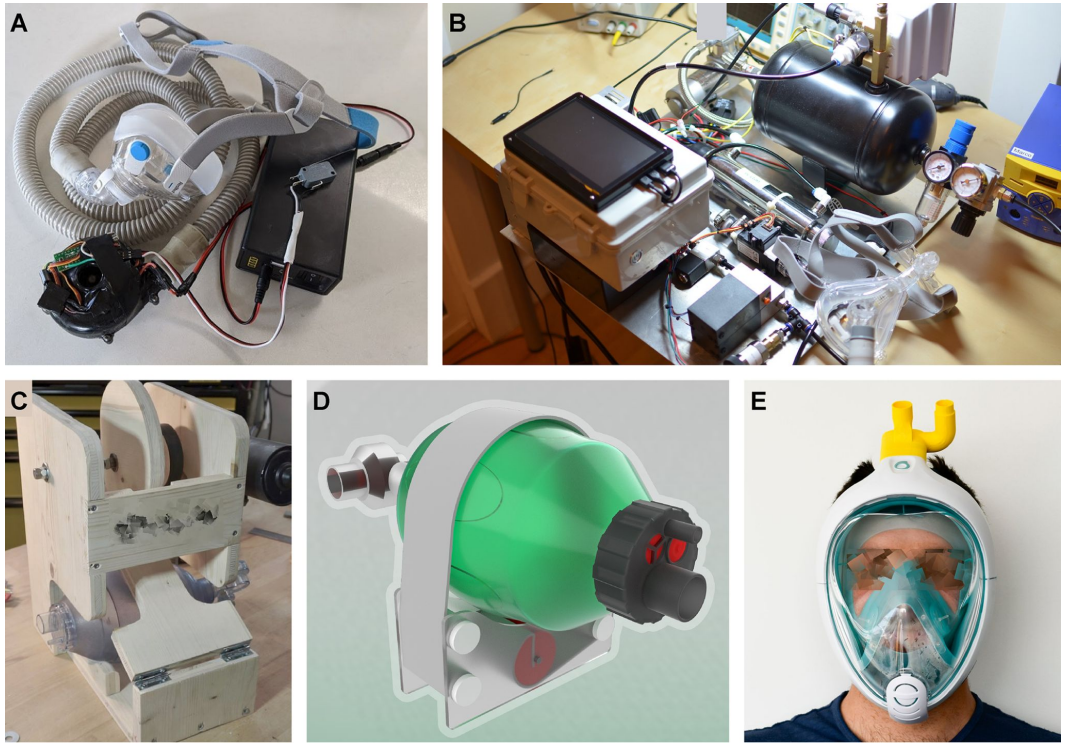



Image Open Access: Leveraging open hardware to alleviate the burden of COVID-19 on global health systems
https://doi.org/10.1371/journal.pbio.3000730

# What is OSHWA

The Open Source Hardware Association

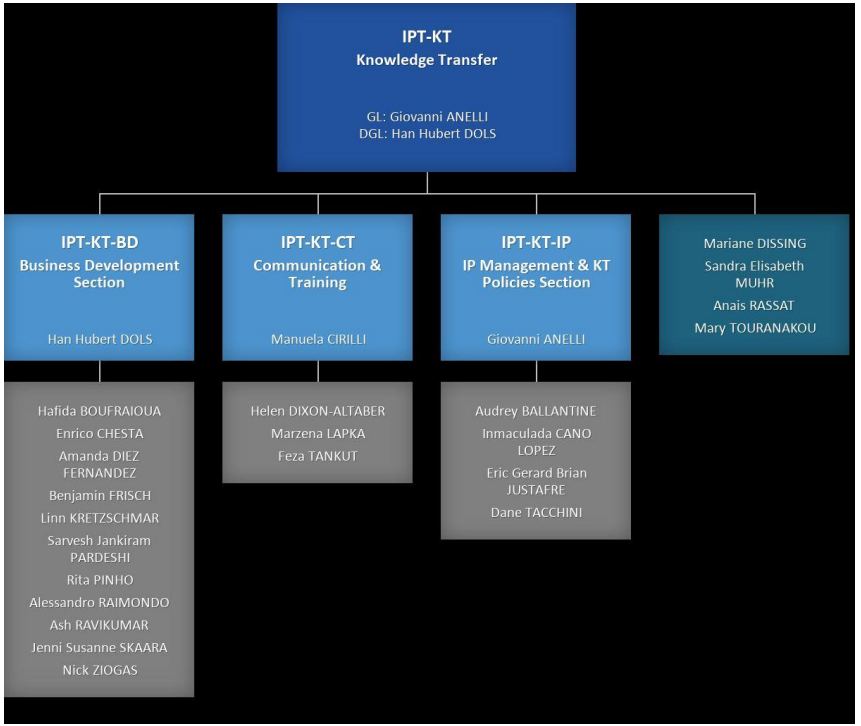
Open Source Hardware Association
OSHWA

- Stewards of the open hardware definition
- Umbrella / Standards organization
- Certification holder
- Collect data
- Organize community events

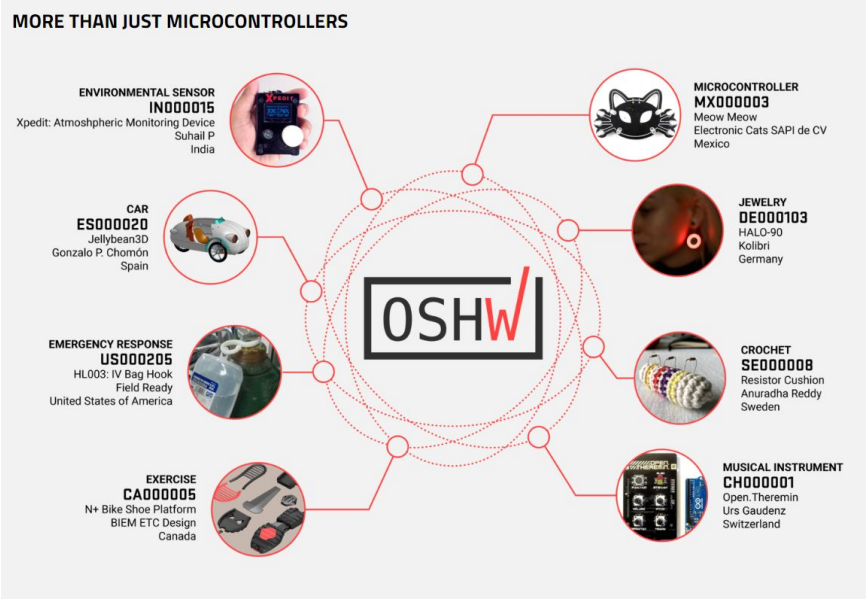
# History of CERN and OSHWA

# Thank You KT @ CERN

## Your gift the the whole open hardware community: Validity of open hardware

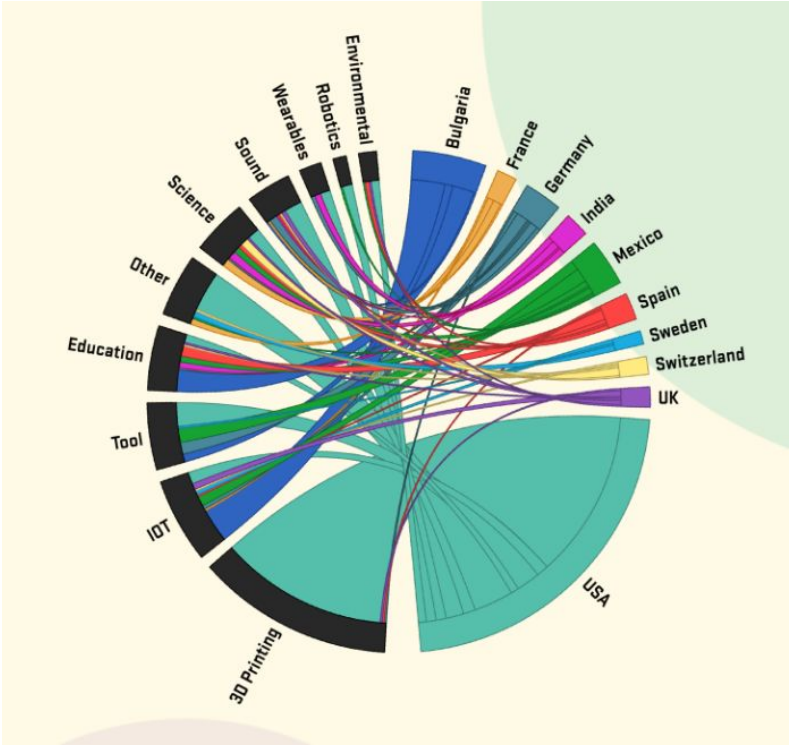


# State of Open Source Hardware

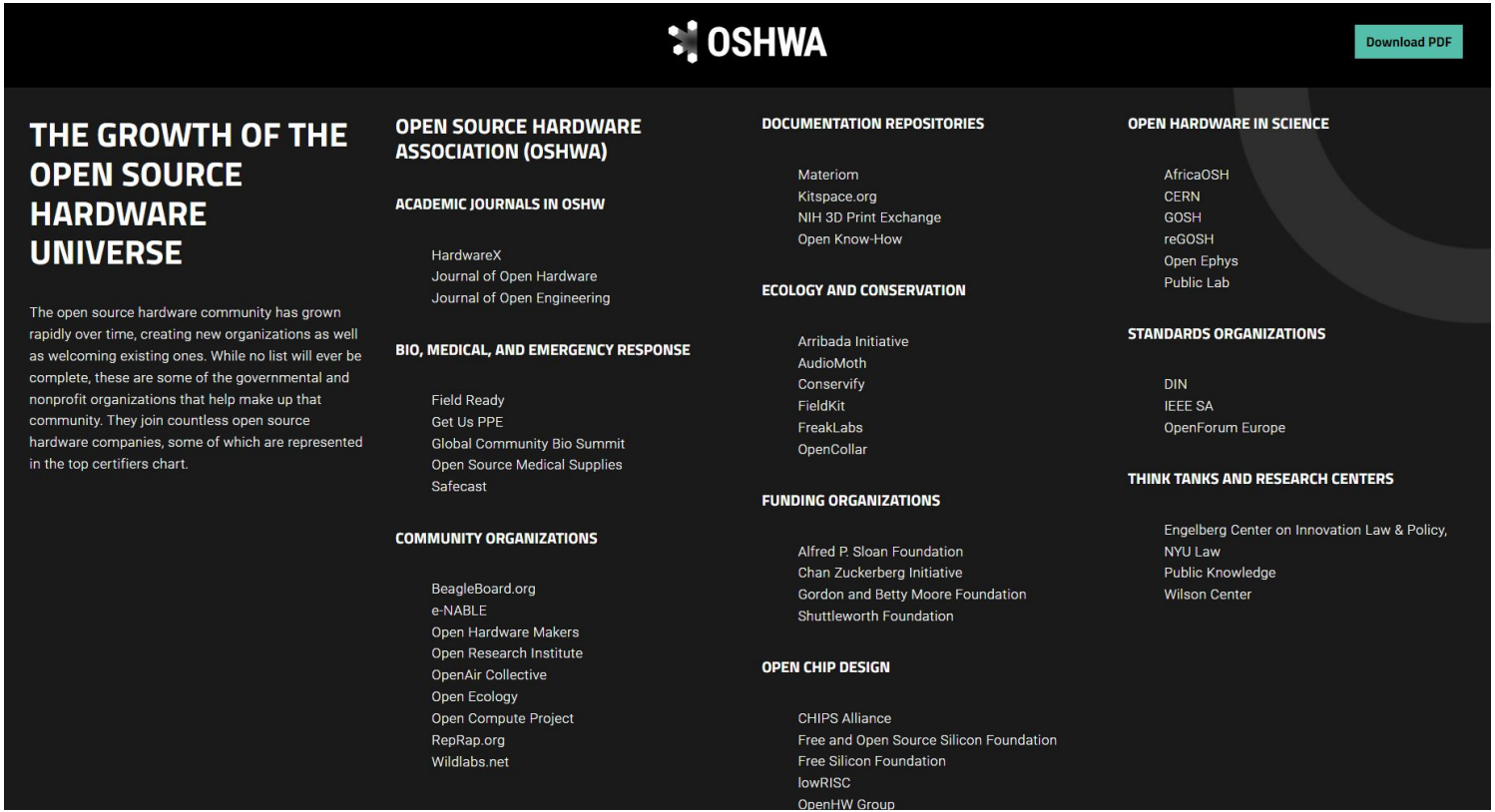


# State of Open Source Hardware

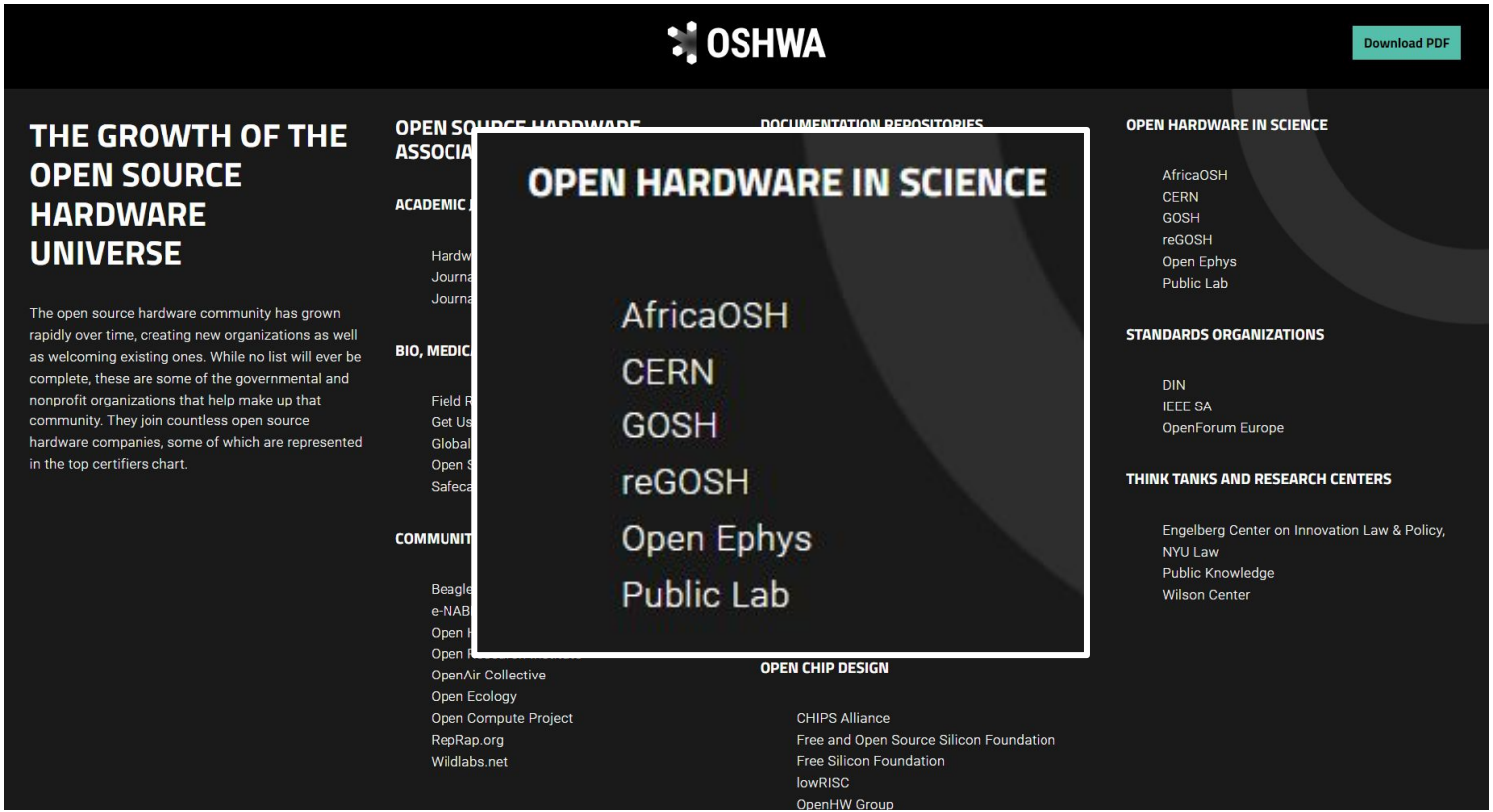
21 certified Swiss Open Hardware projects



# State of Open Hardware: Communities



# State of Open Hardware: Communities



# State of Open Hardware: Institutional Actors



# State of Open Hardware: Funders



# OSHWA Projects now

certification.oshwa.org

OSHWA Certification provides an easy and straightforward way for producers to indicate that their products meet a uniform and well-defined standard for open-source compliance.

SHOULD I CERTIFY MY PROJECT?

# OSHWA Projects now

## CERTIFIED OPEN SOURCE HARDWARE PROJECTS

**DISPLAYING 2533 PROJECTS**

| PROJECT NAME | UID | PROJECT TYPE | CERTIFICATION DATE |
|---|---|---|---|
| 0.95" OLED PMOD | SE000004 | OTHER | MAY 04, 2020 |
| 0X33.BOARD | IT000010 | ELECTRONICS | AUGUST 05, 2022 |
| 0XCB | DE000104 | ELECTRONICS | MARCH 24, 2021 |
| 0XCB | DE000108 | ELECTRONICS | APRIL 16, 2021 |
| 0XCB 1337 | DE000112 | ELECTRONICS | MAY 27, 2021 |

# OSHWA Projects now

## Open Source Licenses "Facts" generator

This generator (source) builds on an idea by Alicia Gibb to present the three licenses that cover an Open Source Hardware project, in the form of the classic US "Nutrition Facts" food labeling design. It was created by Jeffrey Yoo Warren, who at time of writing is a member of the OSHWA board.

Enter your licenses:

Hardware:

CERN Open Hardware Licence Version 2 - Permissive

Software:

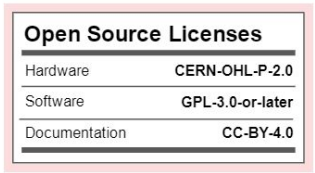
GNU General Public License v3.0 or later

Documentation:

Creative Commons Attribution 4.0 International

Go

Pre-generated SVGs can be found in the project repository



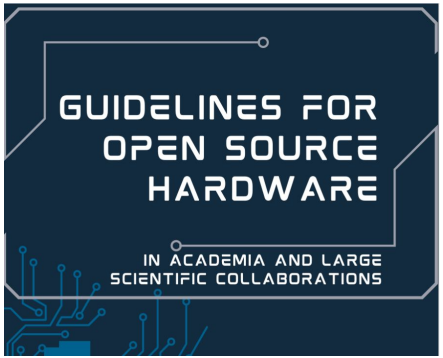

Download

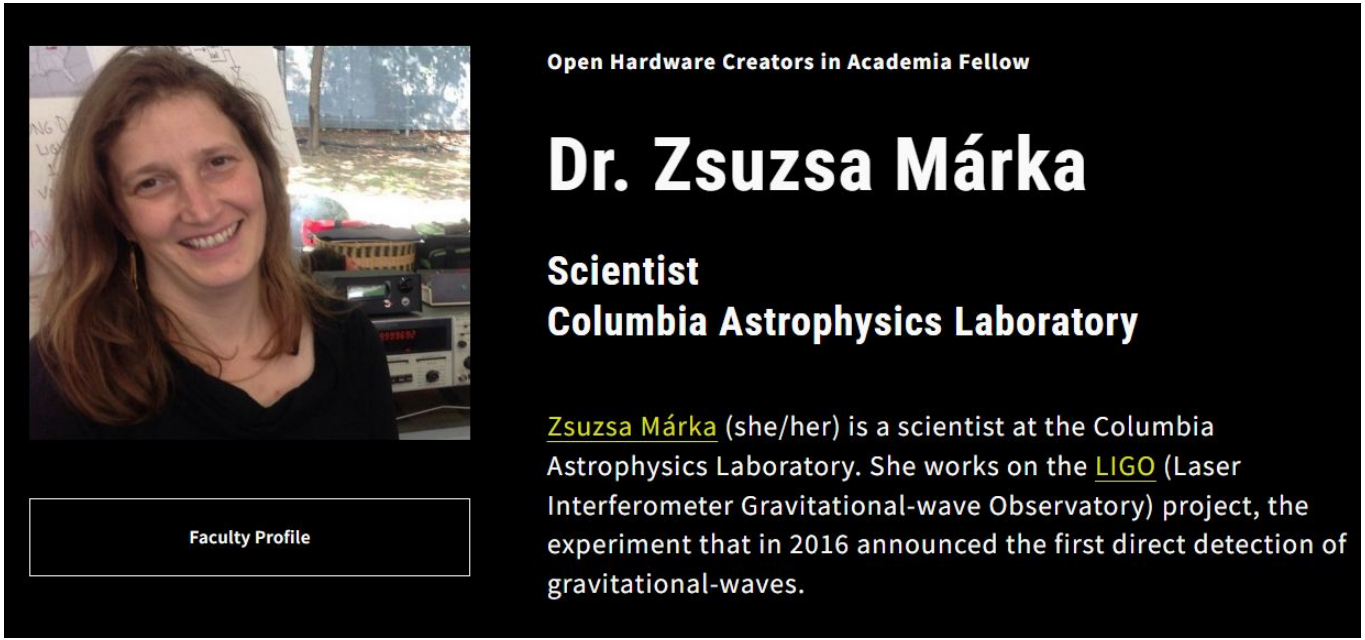
SVG PNG JPG

# OSHWA Projects now

ohca.oshwa.org

# OSHWA Projects now



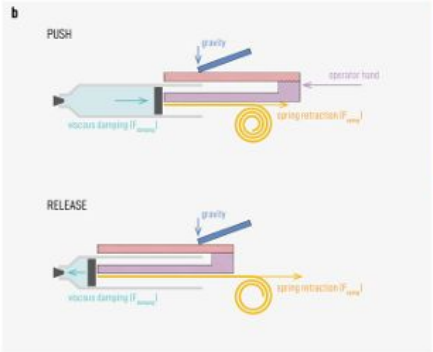
# OSHWA Projects now

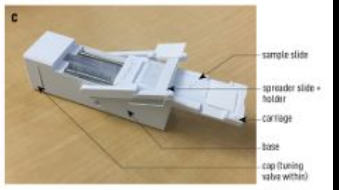
**Open Hardware Creators in Academia Fellow**

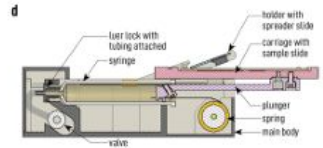
## Dr. Manu Prakash

**Professor**
**Stanford University**

Manu Prakash (he/him) is a professor at Stanford University. He is a physical biologist applying his expertise in soft-matter physics to illuminate often easy to observe but hard to explain phenomena in biological and physical contexts and to invent solutions to difficult problems in global health, science education, and ecological surveillance. His many lines of research are driven by curiosity about the diversity of life forms on our planet and how they work, empathy for problems in resource-poor settings, and a deep interest in democratizing the experience and joy of science globally.



# OSPOs and TTOs

Open Source Program Offices
&
Tech Transfer Offices

“OUR MANDATE IS TO MAXIMISE THE IMPACT OF CERN TECHNOLOGIES ON SOCIETY, WE HAVE A TOOLBOX TO ACHIEVE IMPACT AND OPEN SOURCE IS ONE OF THE TOOLS”
--CERN KNOWLEDGE TRANSFER GROUP

# Plans and visions at OSHWA

# Congrats on the OSPO

From the whole open hardware community