Boilerplate Blurbs and Talking Points for Open Hardware in Academia

Defined

From the Open Source Hardware Communal Definition: Open source hardware is hardware whose design is made publicly available so that anyone can study, modify, distribute, make, and sell the design or hardware based on that design.

The Open Source Hardware Association (OSHWA) aims to foster technological knowledge and encourage research that is accessible, collaborative and respects user freedom. OSHWA's primary activities include hosting the annual Open Hardware Summit and maintaining the Open Source Hardware certification, which allows the community to quickly identify and represent hardware that complies with the community definition of open source hardware.

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. The Certified Projects Directory makes it easy to find certified open source hardware and to search by type of hardware, license, and country of origin.

Open Source Hardware is an option in the landscape of intellectual property.

OSHWA

Benefits

Some benefits of open source hardware include to talk to Deans, Tech Transfer Offices and funders about includes the following:

- Open Source Hardware can produce a citation of your work through certification.
- The open hardware project could include a license for attribution to both the creator at the university if someone uses your source, which creates visibility marketing for the university.
- Open hardware builds community knowledge and is a feel good feature that is marketable, especially when taking public tax dollars for research.
- Patents are expensive for a university to acquire, and even more expensive to enforce. Focusing on solving a problem through open hardware is a more efficient use of resources and researcher time, rather than spending time on patent descriptions and drawings.
- A successful open hardware project creates an active community that focuses around a project or product. This can introduce prospective students, industry partners, or peer to peer collaborations to your university.
- Open source hardware allows for replicable lab equipment, hardware design, and testing jigs, which creates more reproducible science.
- Using open hardware can save a university money, many open hardware products are cheaper than closed counterparts.
- Public disclosure protects the right to practice and prevents others from patenting the same art, as it acts as clearly disclosed and published prior art.
- Open hardware benefits for students includes the creation of a public portfolio which publicly demonstrates their work that future employers can easily see and evaluate.
- Successful Open Hardware protects against project abandonment and can live on by community involvement even when students or researchers leave.
- It is easier to evaluate the security, safety, reliability, and limits of hardware devices when the source is publicly available.
- In the words of the CERN knowledge transfer group: "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 those tools." They further state: "Identifying opportunities to collaborate with industry for the development and commercialisation of OSHW is another key part of our process to maximise impact on society."

Broader Impacts

Broader impacts for grants might include some of the following:

- Open Hardware builds something more sustainable and reusable for the earth's resources because people are able to repair and repurpose hardware whose designs are publicly available and free to modify. People are able to use decentralized manufacturing that reduce carbon footprints, whether or not they created the project.

- Open source projects/products allows for derivatives. Those derivatives build upon the original source and can be modified or used in fields the original creator knows nothing about, countries where the original creator doesn't speak the language, and with functions the original creator never thought of.

- Successful Open Hardware protects against project abandonment and can live on by community involvement even when students or researchers leave.

Helpful Links

This list includes helpful documents to advance advocacy of open hardware in academia:

- Policy Briefs for Tech Transfer Offices, Sustainable development, and Funding: https://openhardware.science/policy-briefs/

- Policy for Science Funders and University Managers: https://osh-policy.org/

- Quantifying the Value of Open Source Hardware Development: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3331131

- Economic savings of scientific open hardware: https://linkinghub.elsevier.com/retrieve/pii/S2468067220300481

- ROI on open hardware scientific development: https://www.researchgate.net/publication/281361072_Return_on_investment_for_open_source_scientific_hardware_development

- Value of Open Source: https://joinup.ec.europa.eu/collection/open-source-observatory-osor/news/first-results-study-impact-open-source

- CERN's goals, services and activities, including the Open Hardware Repository: https://openscience.cern/hardware

Suggestions?

Do you have something to add? Email info@oshwa.org If included in this document, your written response in the email will be public domain. Individual hardware projects will not be added.