Open Hardware Creators in Academia Fellowship

Enabling Practices: Unlearnings Checklist

Unlearning about institutions:

- ☐ The university expects that you're going to patent something & make millions for them. It doesn't mean there aren't commercial opportunities when thinking through "ownership" in a different way, or through a different lens of the university's mission.
- ☐ Let's unlearn staying under the radar because opening it may cause scrutiny, but that mindset keeps from connecting with other departments who can use it
- ☐ Let's unlearn that funders will scrutinize open hardware projects.
- ☐ Let's unlearn that open hardware projects need to be big to be useful. Not all open hardware projects in academia aim to take over the world and that's okay.
- ☐ Let's unlearn siloing and territorialism in the academic environment, cite projects with admiration.
- ☐ Stop believing it is ok to privatize publicly funded research through intellectual property.

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- ☐ We need to make clear there are ways for open hardware activity to be compatible with traditional academic metrics, for example, getting tenure.
- ☐ Let's unlearn the norm that the usefulness of an open hardware project to current publications is critical for determining the level of support or attention it should receive. A project may be critical to publications later, or perhaps its usefulness might be greater in a different department within the university. Or maybe in another university altogether. That's why sharing and broad communication about open source hardware work is important.
- ☐ Let's unlearn an open hardware project is worthless if you don't use it to produce a paper/thesis
- ☐ Everybody loves open hardware! There is something special about open hardware projects in academia compared to regular non-open hardware projects. It shows bravery to publish unfinished work, compassion to allow others to build upon, and courage to do something new. Let's be proud of that work.
- ☐ Let's unlearn that all open hardware coming from academia comes from universities, versus other research institutes or labs like CERN, or nontraditional environments spaces like hacker spaces.

Unlearning ownership and control:

- ☐ Let's unlearn that you have the right to prevent others from doing something because you had an idea.
- ☐ Let's unlearn that you are the best one who can do the task at hand - people you work with are collaborators
- ☐ Adopting not just open designs, but the open tools that make them truly useful and accessible
- ☐ Stop assuming that open hardware is anti-commercial. Open hardware generates businesses and income.
- ☐ Let's unlearn the engrained traditional role of patents in society.
- ☐ Let's honor the difficult feelings of traditional clout in closed hardware: If your dad | PhD advisor | obnoxious aunt who used to work in tech in 1981 thinks you're giving away all your secrets, it can be hard to break free.

- ☐ Let's unlearn that open hardware applies to one domain i.e. Open source hardware is particularly well suited to electronics.
- ☐ Let's unlearn who can do open hardware i.e. You don't have to be an engineer to develop open hardware project, and students/faculty can develop open hardware outside of STEM.

Unlearning about collaboration and sharing:

- ☐ Let's unlearn that copying is bad.
- ☐ Let's unlearn that we need perfection before sharing or waiting until the end of the project to share; let's learn empathy for projects that aren't complete
- ☐ Let's unlearn siloing our data and experimental processes - not just the hardware itself, to enable reproducibility.
- ☐ Think deeply about the value our projects give and how they can co-exist with "competitors". Bring more value than the sum of the parts by working together through open hardware.
- ☐ We need to remember that open hardware often has audiences beyond the original target. We need to remind the community that open hardware impact is bi-directional, it benefits the developer in addition to the adopter.

Unlearning about documentation:

- ☐ Let's unlearn that documentation is something you do *later* or *once*
- ☐ Let's unlearn that documentation (outside of what goes into a publication) isn't as valuable a contribution
- ☐ Good documentation is enough for projects to succeed, perfection is the enemy of done.