

JOH Special Collection on COVID19 - Call for Submissions

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COVID-19 has led to the largest mobilization of distributed, rapid manufacturing of open hardware ever seen. The Journal of Open Hardware is launching a Special Collection on the open-source response to the pandemic.

Open technologies have become an important part of relief efforts during major crises in recent history. As a result of the COVID-19 pandemic, we are witnessing another peak in activities around open technologies at an unprecedented scale. The pandemic has led to the largest mobilization of distributed, rapid manufacturing and open hardware ever seen. This has resulted in hundreds of designs for personal protective equipment (PPE), ventilators, and more by groups around the world, being manufactured by thousands of individuals, community centers, and small and large corporations.

Open hardware designs are being published both formally and informally and designs are being manufactured in new spaces including homes, schools, community labs, and reconfigured factories. However, there is also a need for improving documentation standards; as well as to advance the analysis, reflection, and critique around the role of open hardware verification and testing in the COVID-19 response. Previously, free and open source technologies for collaborative mapping have been used to support affected communities in the aftermath of the 2010 BP oil spill, and in the Haitian, Chilean, and Nepali earthquakes to collect and distribute disaster relief information. Community-driven rapid prototyping of radiation monitoring devices took place within a week of the outbreak of the triple disaster of Fukushima, Japan in 2011. Examples such as these and the rapid mobilization around COVID-19 demonstrate the importance of learning how free and open source development can be mobilized to address different crises.

What can we learn from previous projects to help mitigate disease outbreaks? How do COVID-19 projects help us better understand and support OH development and community dynamics in the context of a critical event? In this Special Collection we are interested in responding to these questions by drawing together articles from researchers and practitioners on topics including (but not limited to):

- hardware metaperspectives describing novel open hardware solutions for COVID-19
- the role of “openness” in the subsequent impact of open hardware designs and their downstream use
- the challenges of open hardware mass distributed manufacturing efforts
- open source efforts in biotechnology for diagnostics, drugs, and vaccine discovery
- solutions for digital fabrication for medical use, e.g. sterilization of 3D prints
- interactions between designers, developers, and domain experts, e.g. medical personnel

- group formation and dynamics in design and manufacture of open hardware, such as PPE, ventilators, and UV sanitation equipment
- methodological challenges and successes in onboarding large numbers of volunteers during times of crisis, while ensuring alignment with practices and values around open hardware development.
- organizational and development practices emerging through large-scale mobilization of open hardware, distributed manufacturing, and “maker” communities
- the practices of collection, distribution, and delivery of open hardware and goods made with distributed manufacturing
- approaches to large-scale fabrication with alternative supply chains, including the role of place in local and global circuits, commercial and non-commercial frictions
- the role of standards in open hardware development for medical use and its adaptation
- how open hardware designers deal with regulations and regulators deal with open hardware designs
- intellectual property law and other legal aspects of open hardware for medical devices, including but not limited to the use of exceptions, such as “Good Samaritan” law, for liability protection
- the intersection of grassroots efforts and the actions of incumbents and existing manufacturers
- open business models: cost, scaling and pricing in projects for the public good

Articles will be reviewed, processed and (if appropriate) published online as soon as possible, without delay as in traditional special issues. If you would like to send an abstract for initial review and feedback, we welcome them but note that an abstract is not mandatory.