

Open Hardware/Modding: 3-D Printing and Arduino

By *Rianne Schestowitz*

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- [Team to design 3D-printable mask inspired by animal noses](#) [2]

A multi-institution team, including a Cornell researcher, has received a National Science Foundation grant to design an open-source, 3D-printable medical mask inspired by the nasal structures of animals.

The team has been awarded a special one-year, \$200,0000 RAPID grant; co-principal investigator Sunghwan "Sunny" Jung, associate professor of biological and environmental engineering, will receive \$75,000 of the total to design the mask.

- [Open Source Arduino Stepper Motor Barometer displays air pressure](#) [3]

I like this one ? a super impressive Arduino-based barometer for measuring air pressure. There?s something satisfying about the link with nature, a tangible connection with outside weather.

[...]

Featured on the Arduino Project Hub, the project is open source and uses an Arduino UNO and Nano (above). It displays the pressure via a 12? (300m) analogue display using three stepper motors, but this is just to scratch the surface of all the work involved. It?s a big, impressive project ? read it in full (there are 28 sections of progress).

- [Open source published for 3D printing of its own high-quality microscope](#) [4]

The open-source design from Bath University gives schools, homes, and laboratories the ability to 3D-print their own precision microscopes. It can be used to analyze samples and identify diseases. About this writes Biomedical Optics Express.

The OpenFlexure microscope is a fully automated laboratory instrument with motorized sample positioning and focus control. It is unique among 3D printing microscopes in its ability to produce high-quality images. It is easy to use, with an intuitive software interface and simplified alignment procedures. It can be adapted for laboratory, school, and home.

- [Neat Open Source Pinhole Camera Design Can Be \(Mostly\) 3D Printed](#) [5]

We've seen pinhole camera builds before, but this new one looks interesting. The Scura is a new open-source design for a pinhole camera that shoots on analog 35 mm film. It is all 3D printable except for a handful of screws, magnets, and the pinhole itself, which is laser cut. The cool and unusual part of the design, though, is the curved film holder, which produces 60 mm by 25 mm (2.3 in by 0.98 in) panoramic images that are sharp to the edges.

Most pinhole cameras produce fuzzy-edged images because the distance from the pinhole varies across the film plane. That throws things out of focus, but the sample images from the Scura look much cleaner and sharper because the curved film holder keeps the film at a constant distance from the pinhole.

[Hardware](#)

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[2] <https://news.cornell.edu/stories/2020/05/team-design-3d-printable-mask-inspired-animal-noses>

[3] <https://www.electronicweeky.com/blogs/gadget-master/arduino/open-source-arduino-stepper-motor-barometer-displays-air-pressure-2020-05/>

[4] <https://freenews.live/open-source-published-for-3d-printing-of-its-own-high-quality-microscope/>

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