

GOOD NEWS

From Public Invention

RECENT ACCOMPLISHMENTS

by inventor(s) or invention teams

- **Veronica Stuckey** and **Robert L. Read** released a pre-print research paper, "**A Novel Passive Ferrofluid One-way (Check) Valve**," on **Engineering Archive (EngrXIV)**: [Link Here!](#)
- Public Invention received a 15K donation to financially support **Glia Inc.** in their current efforts to make emergency tourniquets and medical supplies for Ukraine. Check out their website here: [Click Link!](#)
- We had our 1st ever "**Inventor Gathering**" and will continue to host virtual meet ups **every month** on the **3rd Thurs (8pm CST) via rehive**. **Rehive link: [Click Here!](#)**

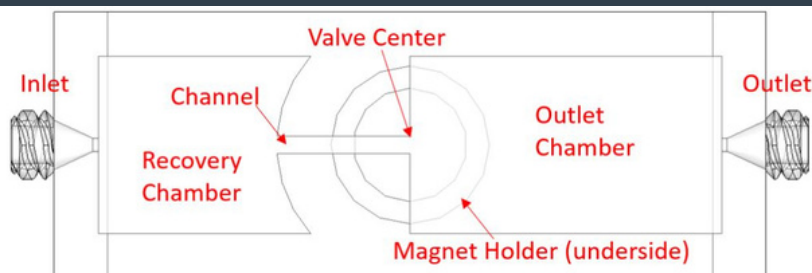
OPPORTUNITIES

- Make a Public Invention/humanitarian engineering club at your school using this source: [link](#)
- Check out our current project ideas available for inventors and invention coaches to join: [Google spreadsheet](#)
- Do you have some progress to share with the general public/our membership regarding your current Public Invention project? Then submit your summarized efforts/any images to our Public Outreach Coordinator (Megan) for the next newsletter!

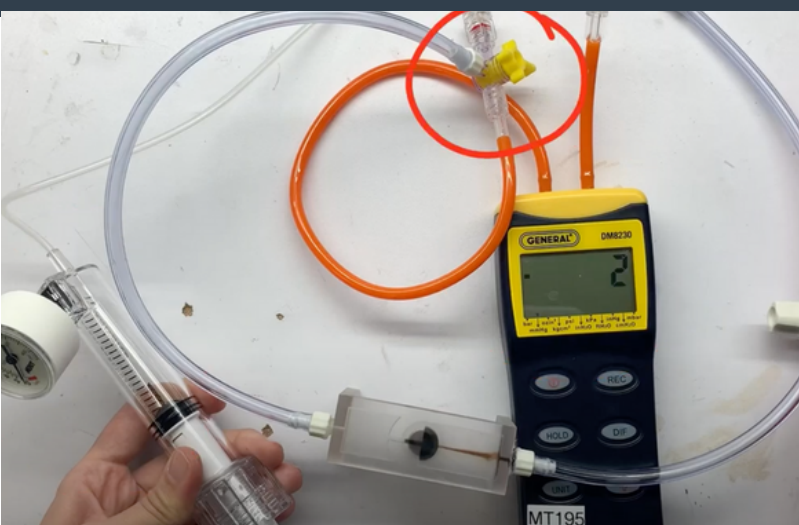
Email: outreach@pubinv.org

We invent things that help all people.
All of our work is in service to nurture humanitarian invention.

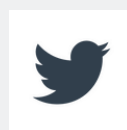
Ferrofluid Check Valve - Veronica S.



Ferrofluid Check Valve - Veronica S.



FOLLOW US!



GENERAL PURPOSE ALARM MODULE PROJECT

Looking for volunteers interested in Arduino Programming & Hardware Design!

They seek an Arduino/PlatformIO programmer or hardware engineer to pioneer open-source medical devices.

Apply at either link below:

Linkedin Posting: [Click Here!](#)

Volunteer Match Posting: [Click Here!](#)

Responsibilities:

The role implies coming up to speed with current development, using hardware drives in PlatformIO, and having an understanding of the Arduino environment. An understanding of PID Controllers will also be helpful.

Future work for this role can include: writing technical papers for hardware, user testing, developing and integrating new modules (such as the reliable GUI), and controlling a proportional flow valve. It will include extensive performance testing and reliability testing. Note that the prototypes are in high demand, so it is likely that a new main board prototype will be designed and built. Additionally, a major research effort will be to develop and test additional "air drive" modules. The current drive is based on a proportional valve, but an air drive based on a blower would make the whole system more versatile.



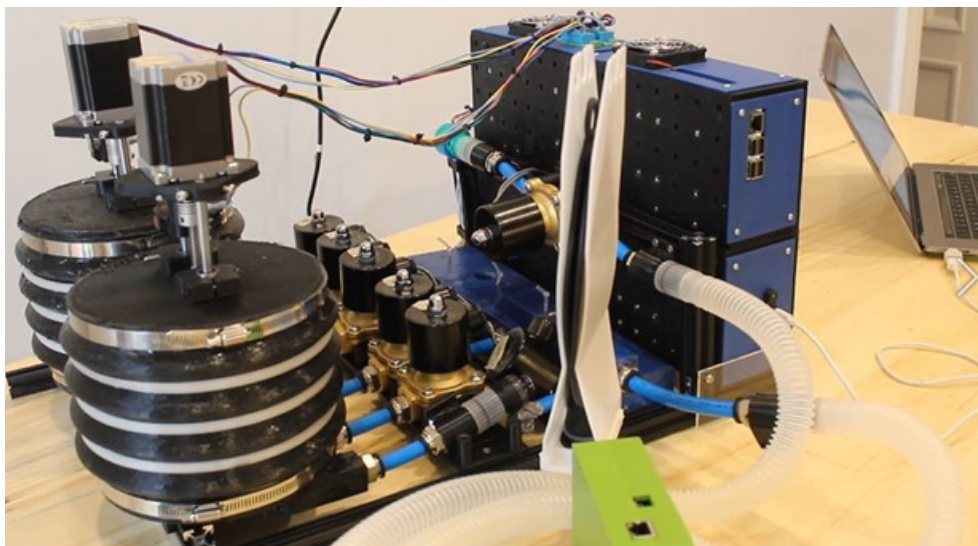
GENERAL PURPOSE ALARM MODULE PROJECT

Looking for volunteers interested in Arduino Programming & Hardware Design!

PolyVent Ventilation System

**Want to make an
impact?**

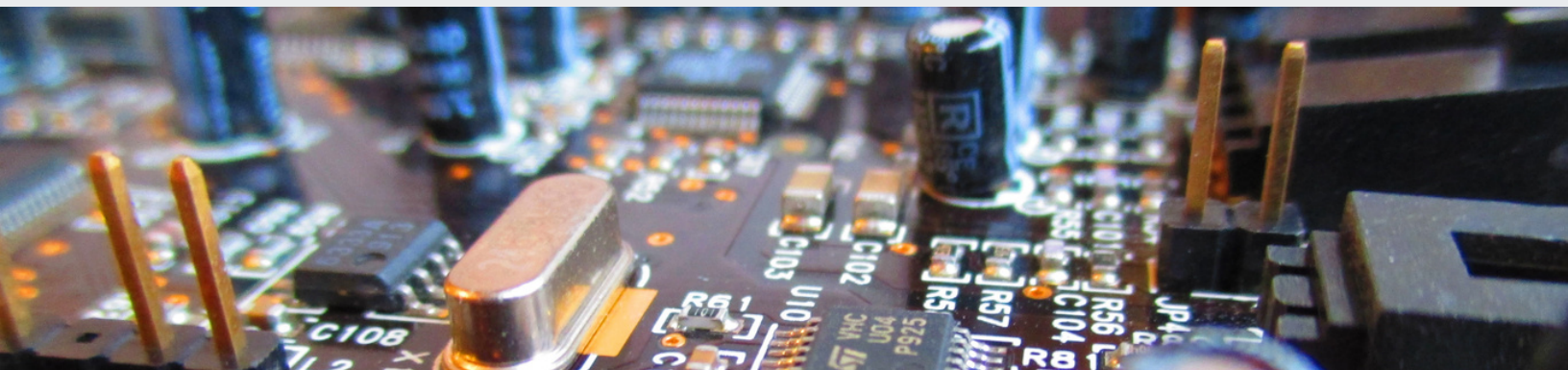
Join our team!



Skills Needed!

- Arduino programming (PlatformIO to program the ESP32 hardware)
- Electromechanical design
- UX skills
- project management/product development
- I2C
- SPI (to communicate with SAMD21 motor controllers for stepper motors)

If you consider yourself an agent of change and want to improve the world, join us! Please submit your resume and a statement of interest to volunteers@pubinv.org



GENERAL PURPOSE ALARM MODULE PROJECT

MEET THE TEAM!



Nathaniel Bechard - PolyVent Project Contributor

Meet the inventor who volunteered on our **POLYVENT** team and helped to develop the ventilator system that will utilize the general alarm system you will contribute on!!

Check out the PolyVent Efforts!

GitLab Repo Link: [Click Here!](#)

MEET THE TEAM!

VentOS Project Mission:

"To create a **free** and **open-source** software library and embedded operating system to enable engineering teams to develop safe and effective invasive and non-invasive ventilators for diverse contexts."

The project aims to:

- support 100's of global hardware projects that started when world health authorities projected a ventilator short-fall
- help teams see the value found from pre-existing software/engineering works

The project was initiated by **Dr. Erich Schulz**, an Australian Anaesthetist together with **Dr. Robert Read**, PhD, of Public Invention. They were rapidly joined by **Ben Coombs**, a New Zealand Engineer, and then by **Brittany Tran** as ambassador.

Check out the VentOS Efforts!

GitLab Repo Link: [Click Here!](#)

We could use your help! Drop by the **Helpful Engineering slack channel** and tell us a bit about yourself and how you'd like to help.

Slack Channel: [Join Here!](#)

We have weekly team meetings **every Tuesday 5pm PST**. Please contact us on the Helpful Engineering Slack if you'd like to attend.

NOTE:

If you are interested in forming a team or joining our efforts as an invention coach, volunteer researcher, social media intern, or admin intern, then email our outreach coordinator here: **outreach@pubinv.org**

GET TO KNOW OUR TEAMS:

For Inventors and Invention Coaches

FerroFluid Valve and Pump

Veronica Stuckey is an inventor who performs engineering research and mechanical design work for biomedical applications. Recently, she has published an open-source research paper on her novel, passive ferrofluid one-way check valve for microfluidic applications, such as fabrication of a lab-on-a-chip. Her design is ingenious because of its ability to pass a fluid using no moving parts.

How it Works: Video [Click Here!](#)

Github Repo Check Valve Work: [Click here!](#)



Veronica is also attempting a design of a ferrofluid pump that can efficiently pump ferrofluid with no moving parts aside from ferrofluid and 2 blobs of immiscible, incompressible fluid, like water.

Check Pump Github Repo: [Click Here!](#)

NOTE: If you are an **Inventor, Invention Coach, or an external partner** interested in offering your feedback too, then **please email us at outreach@pubinv.org** to set up a possible interview or send us your testimonial typed!

QUOTE OF THE MONTH

"Creativity is thinking up new things.
Innovation is doing new things"
- **Theodore Levitt**

