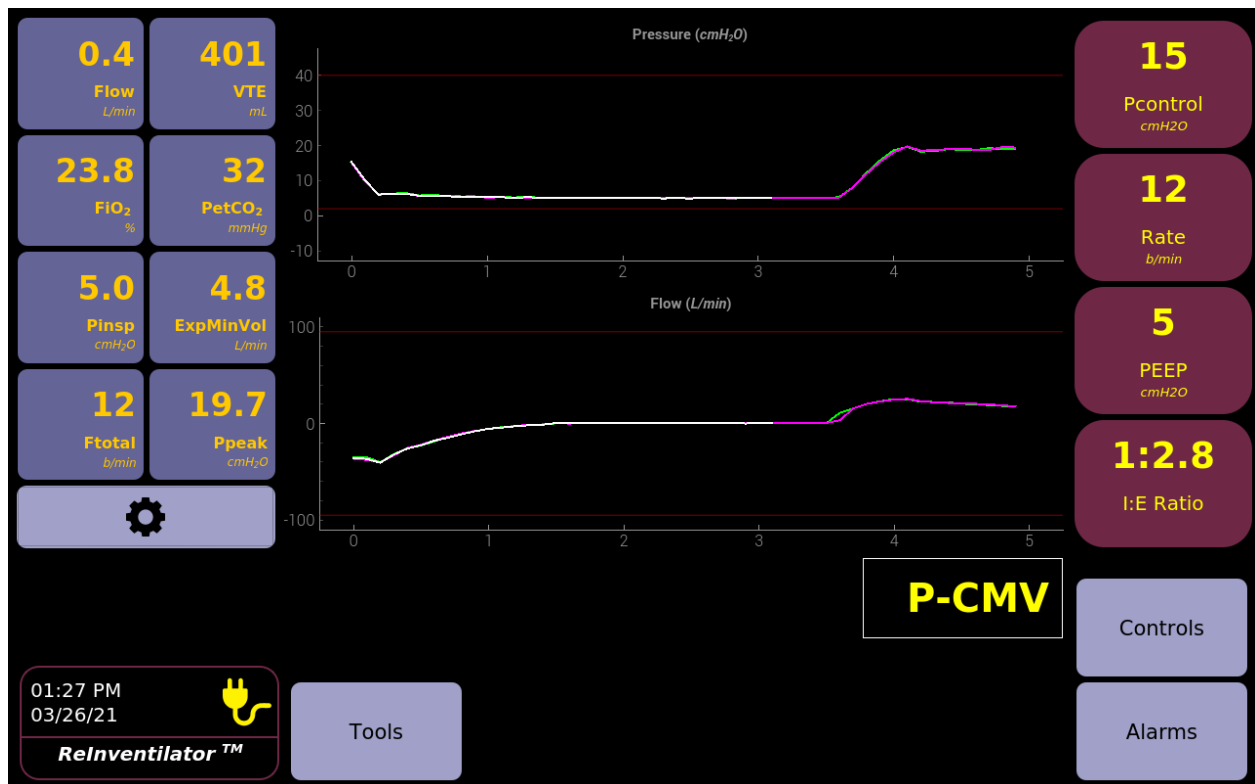


# ReInventilator - GUI v2

Optical Engines Inc develops high power laser systems, performs cutting edge R&D for leading scientific firms and universities, and delivers high quality custom fiber devices. We create exceptional solutions with hardware and software hand in hand. In the Spring of 2020, Optical Engines branched out (significantly) into the world of mechanical ventilation to create the ReInventilator™, initially as a response to the COVID19 pandemic. The project has since evolved into an ultimate “ICU in a box” care station that learns the patient’s respiratory statistics to recommend settings with software defined ventilation objectives.

## The Project



Version 1 of the ReInventilator GUI has been released (internally, as the ReInventilator itself has not been officially released), and it is time to give it the second round of feature upgrades.

## Objectives

- Customization of historic respiratory waveform display
- Customization of displayed respiratory statistics
- Respiratory data logging and storage, including customization
- Display respiratory trends based on selectable time frames
- Selectable patient profiles and sensible default settings
- Reach Goal: Machine Learning on logged respiratory data

## Learning

- Technologies
  - Python
  - Qt with PySide2
  - Raspberry Pi OS
  - Mechanical Ventilation
    - With a fake lung!
- GitLab with CI
- Test Driven Development with pytest and pycov

## Details

- Preferred team size: 3-5 students
- Potential for student internship(s)
- Work performed remotely and/or on-site in Colorado Springs

