

## Project Overview

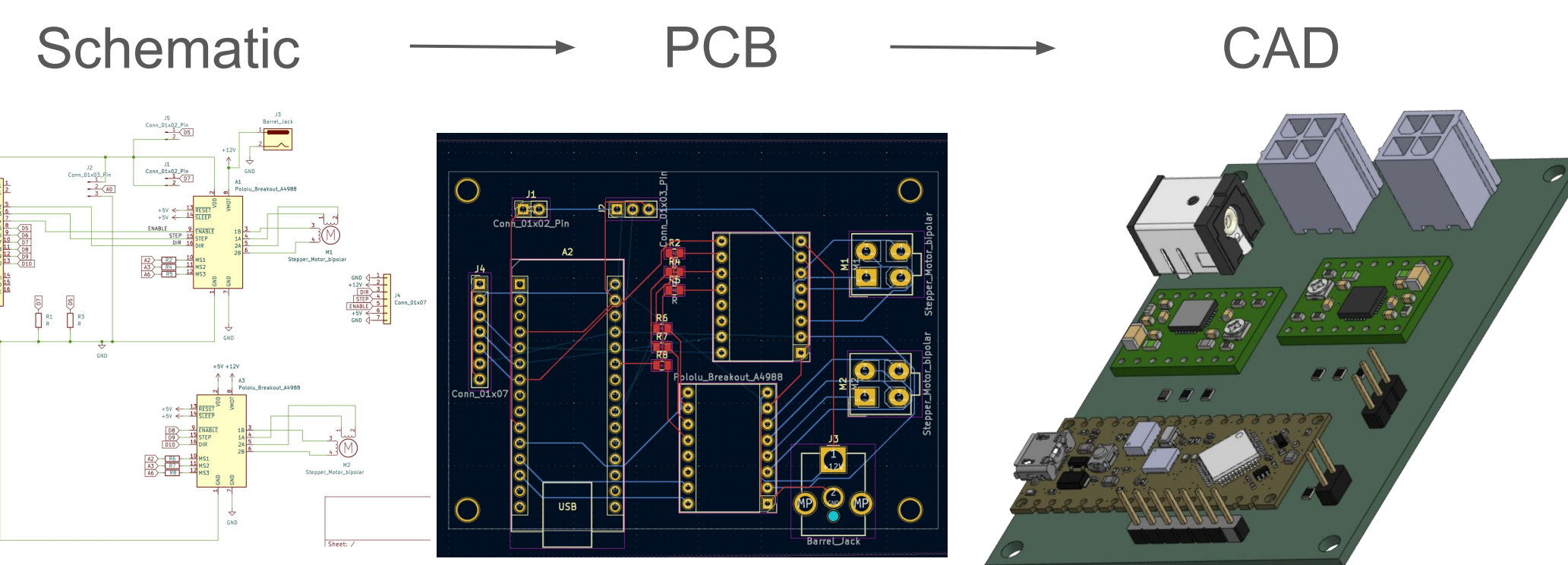
**Problem:** Altos Labs has created the Rejuvenator, a low-volume cell culturing device, in order to improve the traditional cellular reprogramming methods. However, the Rejuvenator still requires manual pipetting.

**Objective:** Develop an automated system compatible with the Rejuvenator capable of dispensing and isolating approximately 5–10  $\mu\text{L}$  of media within the growth chambers. The media is to be dispensed twice daily over a seven-day period while operating within a tissue culture incubator.

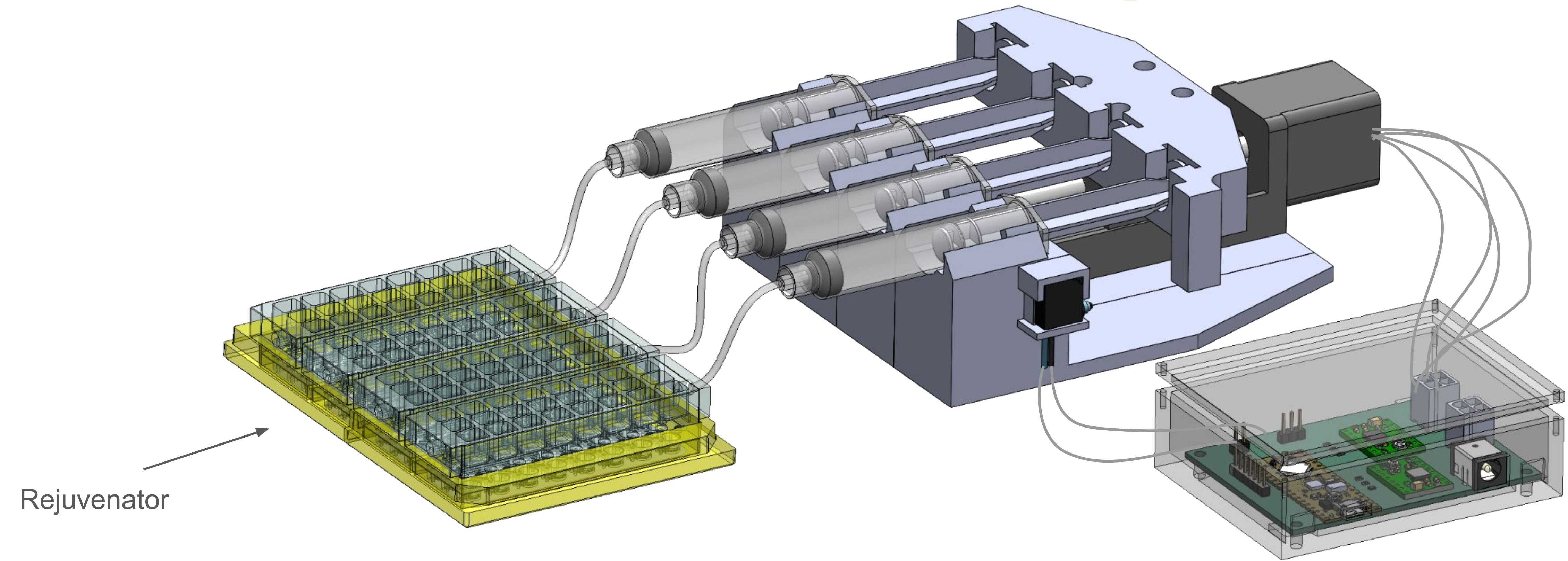
## Meet the Sponsor

**Altos Labs:** Our mission is to restore cell health and resilience through cell rejuvenation to reverse disease, injury, and disabilities that can occur throughout life. Altos merges the best of academia and industry to discover and develop medicines that can transform people's lives. From academia, the freedom to pursue the most challenging problems in biology, and from industry, the drive, mission and focus on patients. This model promotes deep collaborations and harnesses the passion and commitment required to transform scientific breakthroughs into medicines.

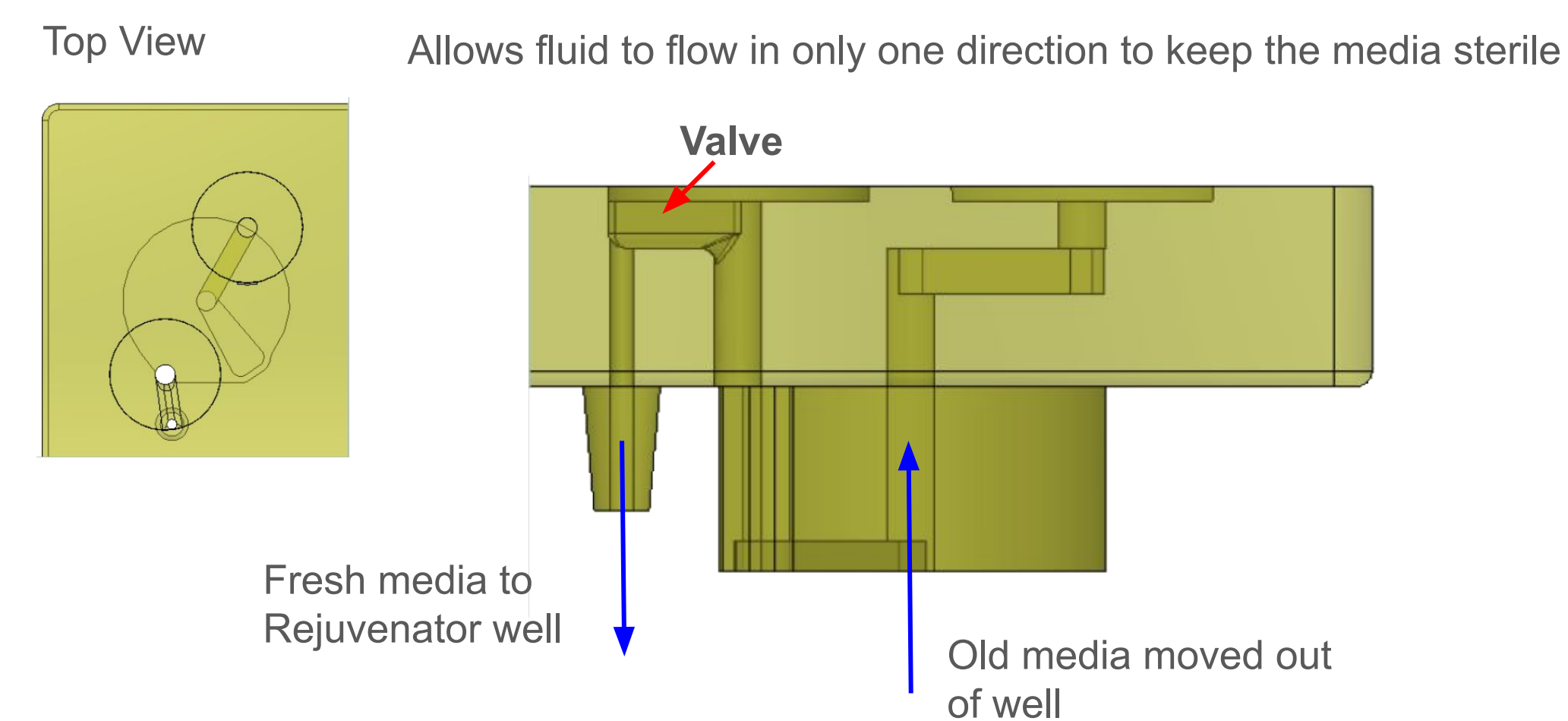
## PCB



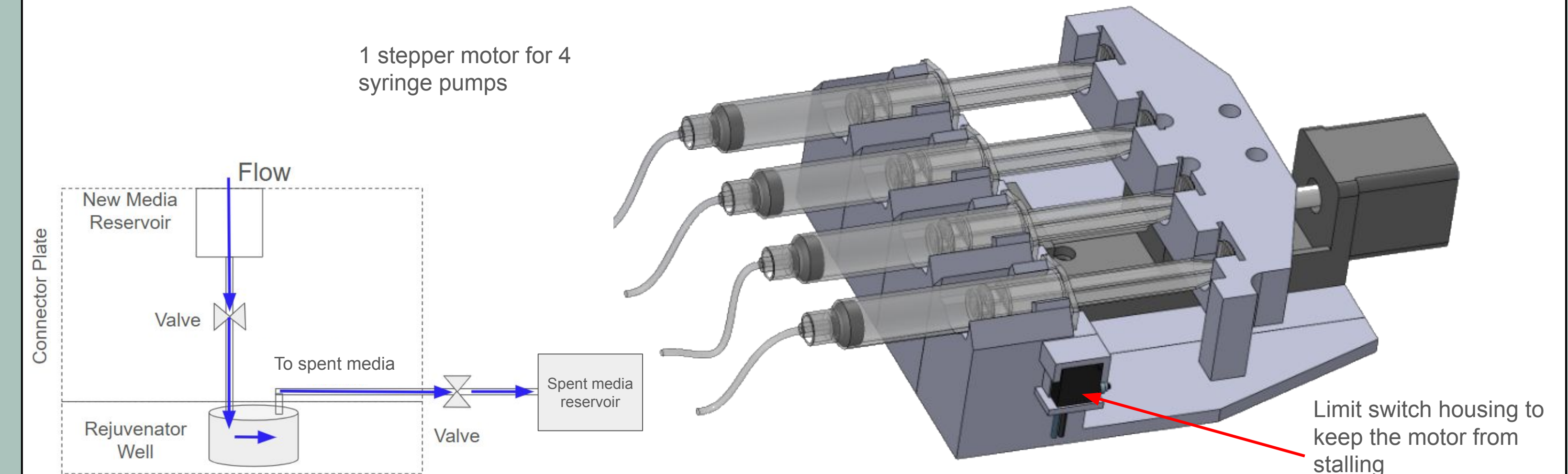
## CAD Assembly



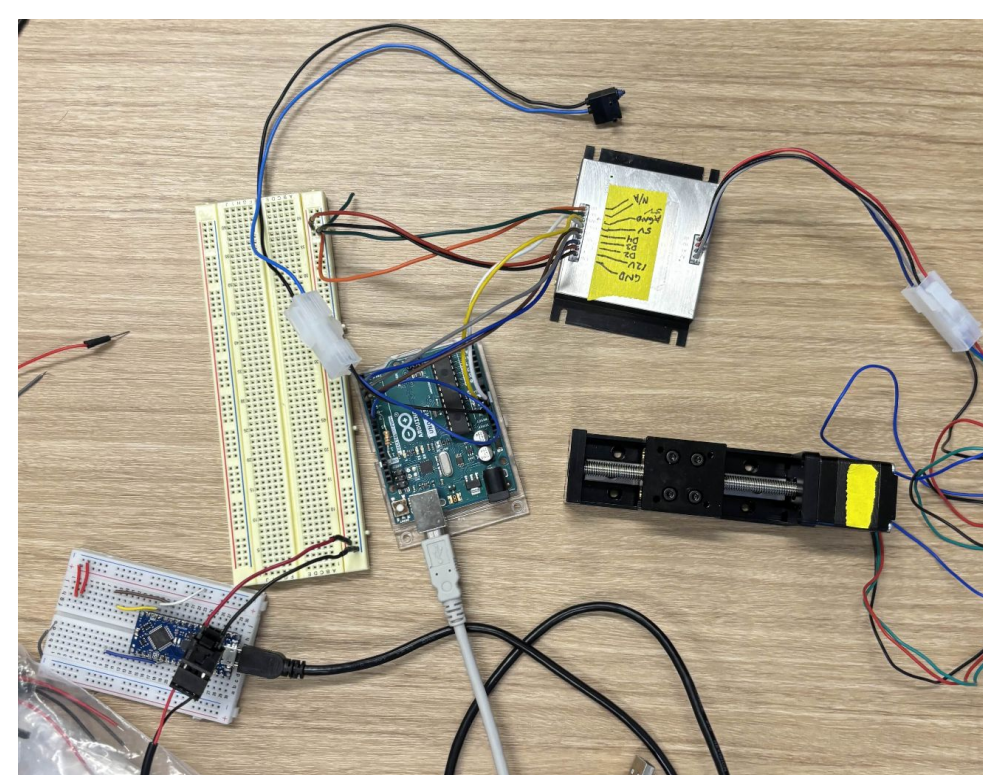
## Valves



## Pumps



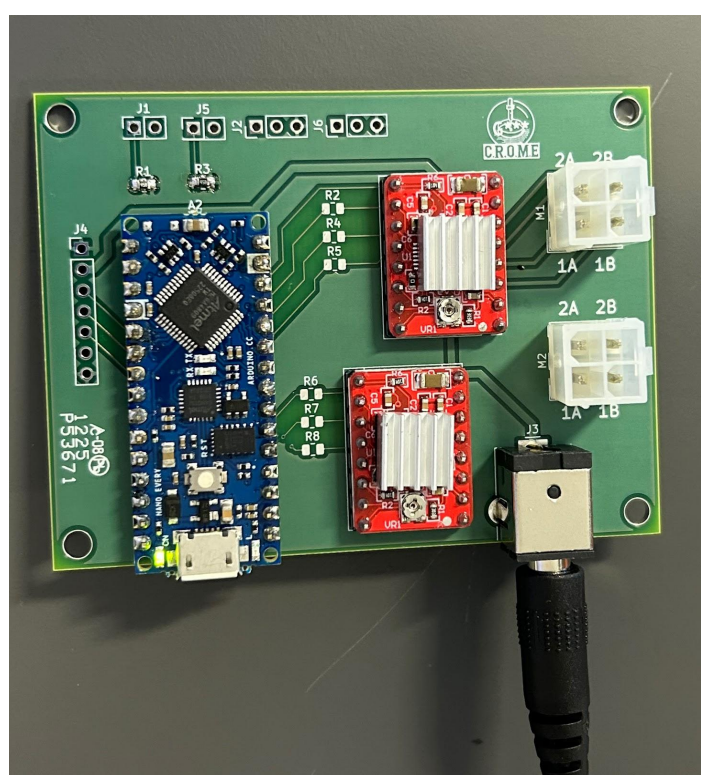
## Manufacturing & Testing



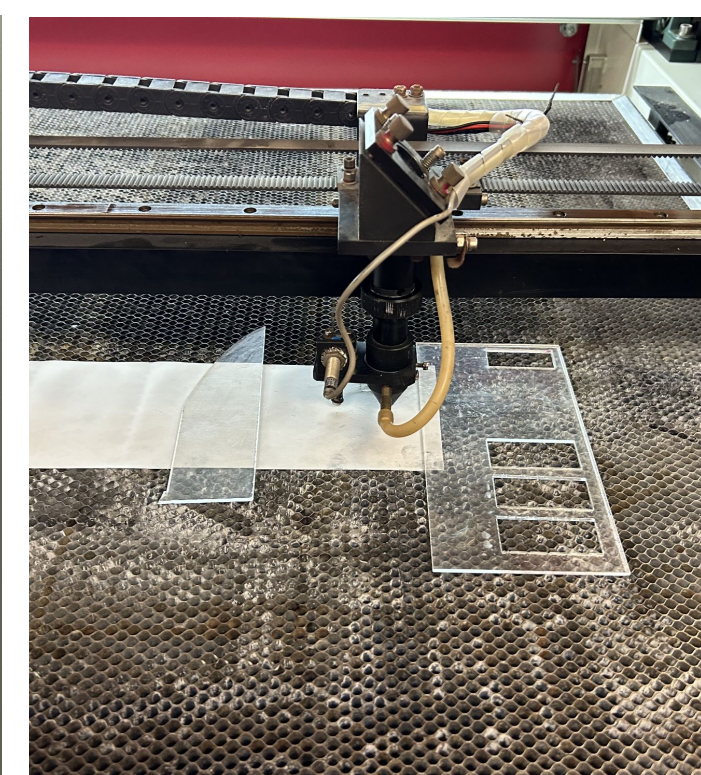
Test circuit for code troubleshooting



Measuring the voltage of the Arduino pins to troubleshoot the circuit



Soldered PCB board



Unsuccessfully attempted to manufacture valves with the laser cutter



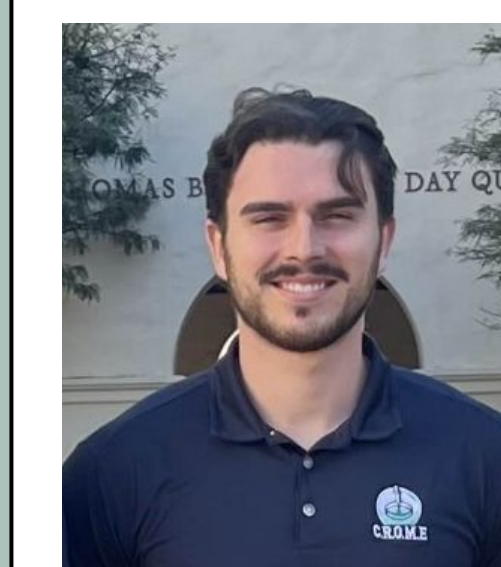
Craft cutter used to create the valves instead



Testing the one way seal of the valves



## Meet the Team



Daniel Martinez-Barry



David Liang



Emilia Cadenasso  
Team Lead



Mark Osorio



Katherine Simms

## Acknowledgements

Team CROME would like to thank Dr. Scott Shaffar for his guidance and facilitation of this project. We would also like to thank our sponsor, Altos Labs, and project advisor, Ben Yeoman, for their time and support.