

# Application for Entrepreneurship Project

## Opportunity Areas

Our knowledgeable, excited, and dedicated team was assembled to having the traits necessary to build a successful hardware startup. After a few weeks of brainstorming and preliminary market research, we filtered our ideas down to three products that align with our skill sets and that we'd love to create. We would like to spend the first two weeks of the class researching markets, interviewing customers, and consulting with the course advisors in order to choose the product we will develop over the semester.

1. Specific Molarity Solution Maker – Low cost machine for creating arbitrary solutions given sufficient input chemicals. Automates the high-precision, time-consuming measurement of input quantities along with the mixture process. Markets in academic and small commercial wet labs.
2. Oxygen Tank Transportation Platform – Robotic platform for medical oxygen tanks that follows a generated electromagnetic signal. Incorporates a LIDAR system for obstacle detection and path planning. Enables greater independence and mobility for seniors requiring oxygen tanks. Markets at hospitals, assisted living facilities, nursing homes, and medical rehabilitation centers.
3. IP Camera Doorbell – Video camera integrated into doorbell that allows the homeowner to see and communicate with the caller via a video feed to a smartphone app and a speaker in the doorbell. The app also can unlock the door. Adds convenience and security; for instance would be very useful for package delivery that requires confirmation. Aside from general homeowners, marketable as an inexpensive upgrade to old apartment buzzer systems.

## Projected Schedule

### Deliverables

Present product chosen based on preliminary research of above options	2/18
Present stereotypical customer and required features based on customer feedback of initial look-alike models	3/4
Present work-like model with consolidated feedback from customer reactions	4/8
Initial business strategy incorporating projected manufacturing costs and market size based on initial prototyping and research	4/22
Prototype incorporating customer driven design and branding	4/29
Draft pitch deck	5/6
Final presentation with alpha prototype	5/13

## Team

**Troy Astorino** (AeroAstro, Physics '13) – **About:** Troy's interest in machine learning and robotics has led him to take classes from a wide variety of departments outside of his two majors. He participated in StartLabs' C2C program last IAP and firmly believes that startups can change the world through building profitable businesses around products and services. **Skill set:** Troy's experience with large software systems and his academic focus on probabilistic robotics will be used in building the software and sensor integration for the project. **Desired units:** 24 **Advisor email:** kwillcox@mit.edu

**Turner Bohlen** (Physics, '14) – **About:** While gaining technical knowledge and practice through classes and internships at startups, Turner has developed an intense interest in entrepreneurship as a method for bringing novel technology and exceptional design into the hands of the public. He is the director of StartLabs, a non-profit student club dedicated to that mission, and has himself dedicated the last two years to learning as much as possible concerning the process of launching and running a company. **Skill set:** Turner has significant experience in software and web development that will be put towards writing the software for the project.

**Craig Cheney** (Mech. E '14) – **About:** Craig has pursued his interest in robotics throughout his career at MIT, most recently winning the 'Intro to Robotics' term project competition, "Robot Gymnastics". **Skill set:** His expertise in CAD, mechanical design, machining, and controls & instrumentation will be utilized in the physical design of the project, as well as the electronics system.

**Gus Downs** (Physics '13) – **About:** Gus has been heavily involved in experimental physics research across the country during his time at MIT, designing and building experiments to study ultrafast processes in quantum materials and efficient cooling of single atoms. **Skill set:** Gus's experience with circuit design and signal processing will be put to use designing the data acquisition and electronics system of the project.