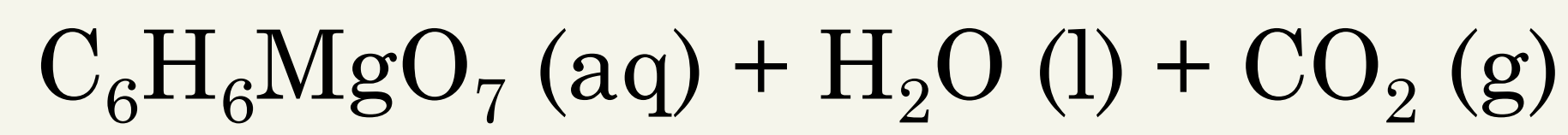
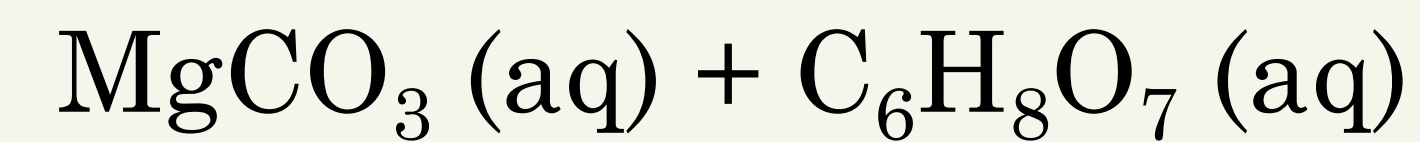


The Team

2017 AIChE Cooper Union Student Chapter Chem-E-Car Team
 Muhtasim Anjum | Liushifeng Chen | Dave Chun
 Laarnie delos Reyes | Mickey Huang | Grace Li | John Nguyen
 Vishesh Padnani | Timil Patel | Andy Qiu

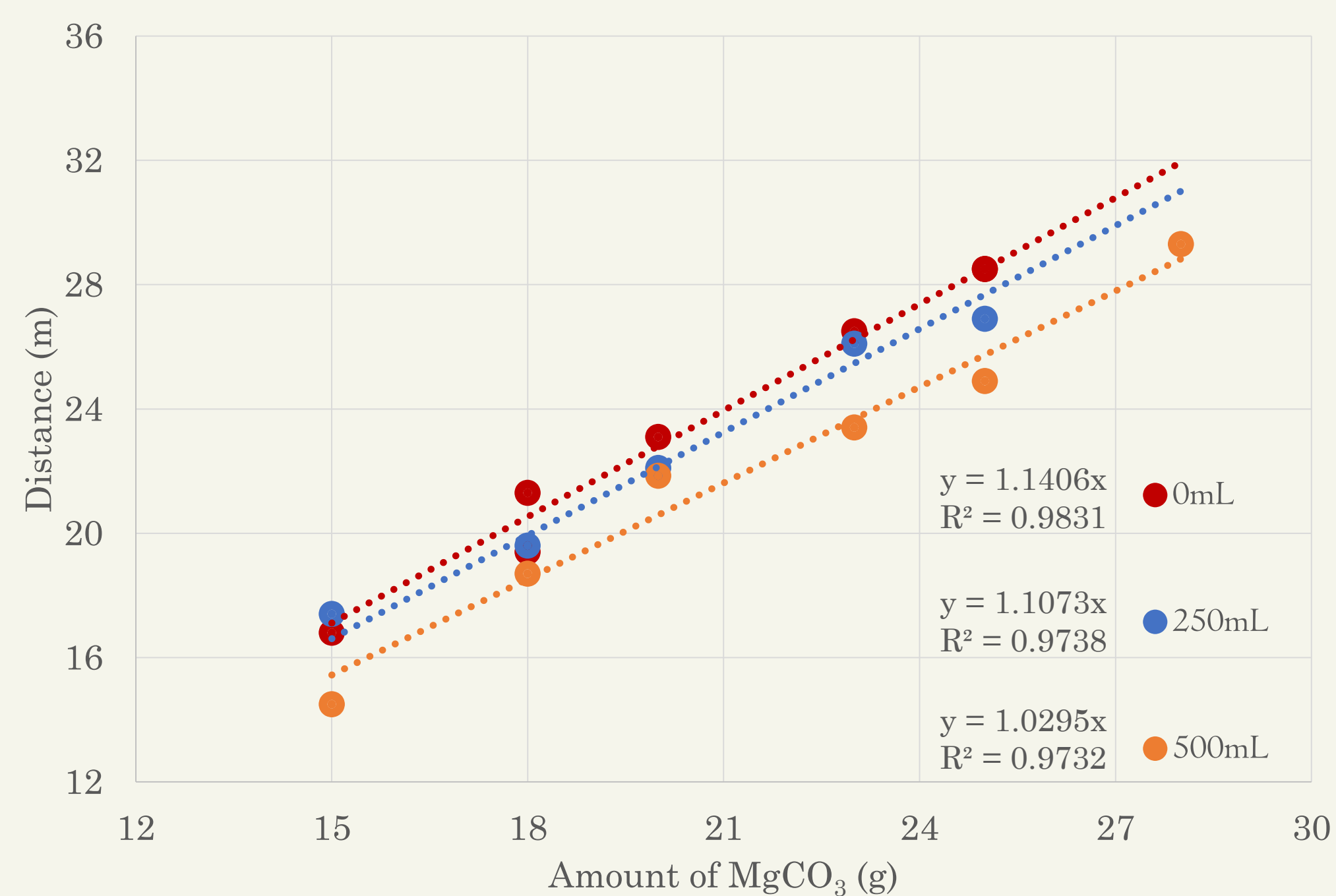
Special thanks to:
 Professor Daniel Lepek | Victoria Heinz | Revans Ragbir | Mike Westbrook

Operation



- Powered by pressurized CO₂.
- Ratio of reactants and water (added to promote mixing) optimized through testing.
- Distance traveled controlled by reactant quantity.
- Car stops when CO₂ is used up and Lego engine stops running

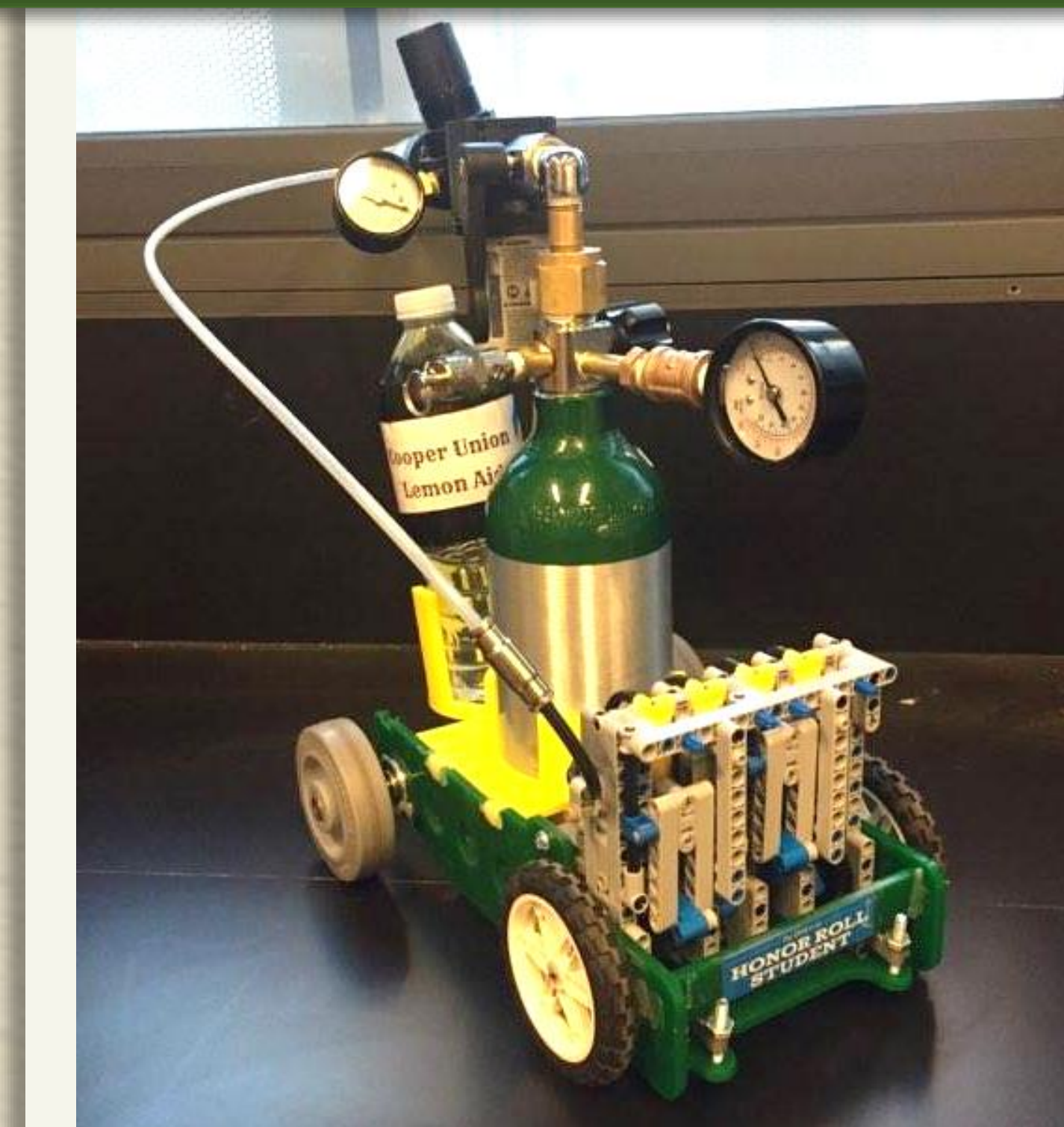
Distance Calibration



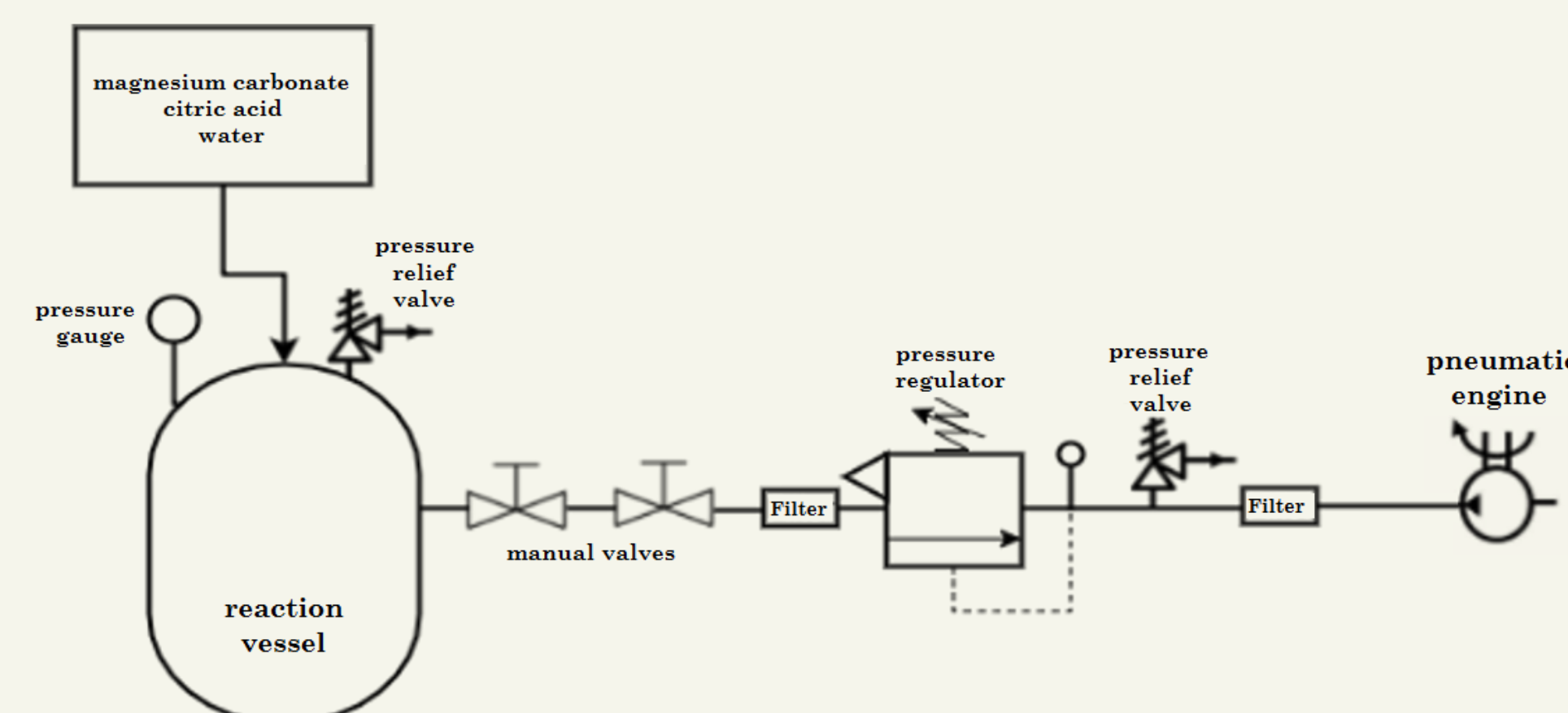
50% ORGANIC LEMON AID



The Car



Process Diagram



Unique Features



- Lego Pneumatic Engine**
 - Runs on pressurized CO₂
 - 4 pistons
 - Easy to clean, plastic MOC will not corrode
 - Lightweight
- Gym Chalk & Citric Acid**
 - Household chemicals, easily procured
 - Affordable
 - Safe to utilize, NFPA rating of 0 or 1 in all categories
- Custom frame**
 - Lightweight and resilient
 - Precise fitting of components

EHS Considerations

- Environment**
 - Low carbon dioxide emissions
- Health**
 - Low toxicity chemicals
- Safety**
 - Pressure regulator allows for safe, consistent engine operation
 - Relief valves installed on reaction vessel and after regulator
 - Lever valve for emergency stop
 - All components selected for MAOP service & chemical compatibility
 - Gauges read 2x the max operating pressure