

## To Predict x To Design x To Perform

## ME, ECE Capstone Design Programs

## Team #47: Chem-E-Car

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To win the 2018 AIChE Chem-E-Car Competition by designing and building a chemically propelled car that travels a prescribed distance, quantifiable by a controlled change in a concentration of chemical reactants, while carrying a load.

Chem-E-Car Competition:

- Judges give a distance and load
- Closest to the target line wins
- Sponsored by AIChE

Туре	Threshold/Detail	Specification Met			
Time	< 2 minutes		Start Button Pressed & Light Sensor at Reference? False: Wait		
Distance	15-30 meters			Category	Amount
				Total	\$3,137
Size	< (40 x 30 x 20) cîm			Parts and	¢4.074
Load	0-500 mL water			Manufacturing	\$1,671
Spood	> 0.25 m/s			Testing	\$940
Speed	> 0.20 11/5			Safety	\$525
Alignment	± 26 degrees from center			Budget Surplus	\$1,863
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			All engineering specification	ns were met	

- Placed 华 in the Southern Regional Competition
- Placed 2<sup>d</sup> in the Poster Presentation Competition
- The team had the most consistent performance
- Earned a spot in the 2018 National Chem-E-Car Competitio
- With more testing, a better model can be created to win th National Chem-E-Car Competition

September
Define Objective, Functi
Constraints



Nov - Dec Plan Manufacturing, Testin Safetv

January Manufacture and Test