

We are **Colorado Robosub from the University of Colorado Boulder**. Our university is located only 16 miles away from Longmont. This will be our third year competing in MATE ROV. We started in 2021 and have competed in the Rocky Mountain regional competition the past two years. Most of the team this year is new to the competition, but there are still some experienced members who were here for our first ever MATE competition. Our team is a diverse group of students from different majors ranging from freshman year with little experience to graduate students working on a thesis.



*Pictured above is this year's team. From left to right is Ben Partee (Mechanical lead), Liam Harris (CEO), Dylan Kriegman (Systems lead), Luke Morissey (Electrical lead), Xavier O'Keefe (Software lead and pilot), Tahn Jandai (Software team), Jake Tucker (Software team), Connor Julson (Software team), Ron Curry (Mechanical team), Amanda Stevens (Mechanical team), Mark Turner (Mechanical team), and Andrew Heck (Mechanical team). Not pictured is Madison Ritsch (CFO).*

Shown below is **Lazarus**, our ROV. The total approximate cost of the vehicle is \$3,095.00 when including all parts and materials. The ROV is roughly 35 pounds and has dimensions of 28in x 14in x 24in. When factoring in the initial development and constant updates that have been brought to this vehicle, the total number of combined hours worked is roughly 4,000 hours. Lazarus features a 20 amp fuse spliced into the positive side of our power tether. There is also a kill switch on the laptop controller such that the pilot can shut down the sub immediately if needed. There are also IP40-rated shrouds on all 11 thrusters. One feature we are particularly proud of is the gripper rotation mechanism we've developed this year. We had a similar mechanism last year that would consistently fail, but this year we've made significant changes by implementing a timing belt system with less room for error.

