

Carter McIver: Mechanical & Industrial Engineering

Mentor: Randal Larimer, Berk Knighton (Professor at Borealis Lab) -- Electrical & Computer Engineering/MSGC, Chemistry & Biochemistry/MSGC

MSGC BOREALIS High Altitude Ballooning Project

This past fall I worked in the lab with Berk Knighton and Randy Larimer as an Undergraduate scholar. I assembled two new ground stations, which will help us track future launches and be at the ready in case of technical failure. I have also designed cases and other apparatuses that will be flown in the payloads. Specifically, cases for our IMU, (inertial measurement unit) which will be flown on the eclipse launch. These parts are designed on CAD software, then 3D printed and prototyped. We have been using SLA (Stereolithography) and FDM (Fused Deposition Modeling) printers. Besides this I worked on creating an instructional manual for the Ground Station and Fill Station. My hope is to have these available to new students, giving them an understanding of what a launch entails before going on one. Through working on these different projects, they gave me a greater understanding of the lab. I will be presenting on the ground station and the IMU case. I will cover a basic understanding of the High-Altitude Ballooning system and go into detail on the ground station. I would also like to have a smaller section on the process of creating the IMU case from design to prototyping.

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