

Dear SEDS USA,

UNH SEDS (Students for the Exploration and Development of Space) has launched 8 rockets in the past few months; each an iteration and improvement on the previous design. We began with a single engine rocket and have since moved to two stages (two engines). Using a GPS and an altimeter in our electronics bay, we have been working towards successfully recovering each rocket stage and bringing all components to the ground safely via parachute. Our electronics record flight data from each launch, which we have compared to MATLAB and Open Rocket trajectory simulations. We started our builds with cardboard tubing, then switched to blue tube (commonly used model rocketry material), and have now manufactured a carbon fiber rocket for the final competition (Launching September 29th).

SEDS participated in the Undergraduate Research Conference at UNH this year and placed second among the ME competition teams (receiving honorable mention). Judges were impressed by our presentation, poster, and overall progress we have made in such short time. We began as a group of individuals from various academic backgrounds with no previous rocketry experience or skills. Not only have we all learned so much over the course of the year from failures, successes, and each other, but we have also expanded into more than just a senior project. Students from all across the college in multiple engineering departments, ranging from freshman to seniors, have become involved with the organization. We have taught underclassmen basic rocket theory and principles and allowed each of them to help with rocket manufacturing. As we fly more complex rocket builds, more students, both inside and outside of the organization, are attending the launches.

Moving forward, we plan to dive deep into designing, manufacturing and testing a hybrid engine to compete in a competition in May, 2019 with over 100 other rocketry teams around the country. When the group was first started last year, we received $500.00 from the Deans office which let us buy some of the necessary components during our early months. Rocketry is mastered through testing, learning from the mistake and fixing it. It is naturally an expensive hobby for this reason. To assist in the success and rapid development of UNH SEDS, we hope that SEDS USA can help.

We have hit the ground running with compiling a list of 40 nearby engineering related companies to travel to and ask them for sponsorship. We have made a detailed sponsorship package to assist us with enticing them to contribute and join our organization. The Sponsorship packet for this year is attached to this application. We have also compiled a list of distant companies and their contact email for requesting sponsorship electronically and if they would like to talk on the phone. Last year, the bulk of our funds were from the Parents Foundation in January. They gave UNH SEDS their top donation of 4,000.00 for our potential in community outreach and the extent of learning that goes on day-to-day.

Last year, we had a committed membership (Students that come to nearly every meeting and special events like launches, build sessions and design meetings) of 14 students. We also hosted 4 seniors in the club as their senior design projects. This year, we have accepted 9 seniors into the club for their senior design project (6 ME, 2 EE and 1 CE) as well as take 4 new dedicated freshmen. We have also added 3 new sophomores/juniors starting this year. This has created a total committed student membership of 22, including all classes and nearly every CEPS major (ME, CS, CE, EE, PHYS, EP)

Thank you for your consideration in funding a part of our goals for this year, and if there are any questions regarding the application, please do not hesitate to contact me below.

Respectfully,

Charlie Nitschelm

[Cjn1012@wildcats.unh.edu](mailto:Cjn1012@wildcats.unh.edu)

603-923-9079