

HIGH-POWERED ROCKETRY CLUB

AT NC STATE

***SPONSORSHIP
PACKET 2025-2026***





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About Us

The High-Powered Rocketry Club at NC State, nicknamed "Tacho Lycos", is a 50-member multidisciplinary team. We have been going strong since our first year participating in NASA Student Launch in 2010.



2022-2023 Team at NASA Student Launch



2024-2025 Interest Launch Rocket

The mission of the High-Powered Rocketry Club is to provide students of all majors with hands-on experience in research, design, testing, and launching high-powered rockets. Our primary goal is to show students that "rocket science" is a lot easier than they might think and all it takes is passion and a desire to learn.



NASA Student Launch

The NASA Student Launch competition that requires collegiate teams to design, build and launch high powered rockets. Each year, teams must design, manufacture, and fly a subscale and full-scale high-power rocket containing a payload to a target altitude between 4,000 ft and 6,000 ft.

In addition, several rounds of professional documentation are required including Proposal, Preliminary Design Review, Critical Design Review, and Flight Readiness Review. The competition provides points based on documentation quality, flight success, and payload requirements that change each year.

**2023 team leads interviewed
by Spectrum One News**

Tacho Lycos has earned numerous top 5 finishes and awards for altitude accuracy, social media engagement, and best-looking rocket.



**2024-2025 Team on competition day with "Pelicanator",
Huntsville, AL.**

The 2024-25 Payload challenge consisted of recording and calculating rocket flight parameters, and upon the safe landing of "STEMnauts", relaying those parameters to a ground station via APRS.



NASA SL Past Rockets

2023-2024: Placed 5th overall



"Shake N' Bake"

2022-2023: Placed 4th overall, won the Social Media Award and "Best-Looking Rocket" Award.



"Rainbow Road"

2021-2022: Won the Payload Design Award, Team Spirit Award, Social Media Award, "Best-Looking Rocket" Award.



"Catastrophe"

2014-2015: Won the Mars Ascent Vehicle Centennial Challenge.



"Lobo Fuego"



Wolfworks Experimental Projects

Formed in 2019, Wolfworks Experimental is the club's R&D division. Originally created to seek progress towards an air brake system, but has since grown to explore advanced rocketry concepts beyond NASA Student Launch.

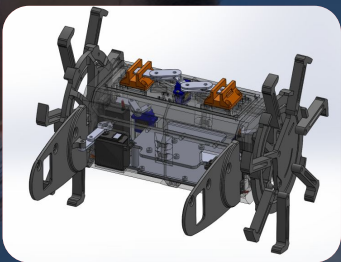
Air Brakes - Active Apogee Control

An apogee targeting system that deploys retractable flaps to increase drag and reduce altitude, helping achieve the target apogee. Developed for the NASA Student Launch to improve scoring by enhancing apogee accuracy.



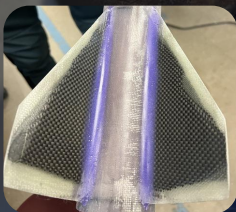
SSV Rover - Electromechanical Systems

Made from 3D-printed CF-PETG, the rover was built to drive on rough terrain. It features 2 continuous and 5 positional servos, an ultrasonic sensor and more. The vehicle fits inside a 6" body tube, with wheels that expand by 3" after landing. It includes a parachute release and driving stabilizers.



Pencil Pusher - Supersonic Rocket

Tacho Lycos' first supersonic rocket, built with a fiberglass airframe and carbon fiber-reinforced sandwich composite fins with a birch core. It included a custom telemetry system and flew successfully to Mach 1.4 in 2023 and Mach 2.0 in 2024.



BarbenHeimer - Custom Airframes

Two-stage high-power rocket "BarbenHeimer" with an airframe made entirely with in-house wet layup composite techniques. The rocket has successfully flown twice, with a third flight upcoming to start the 2025-26 year. This was the club's first attempt at a staged rocket.



Goals



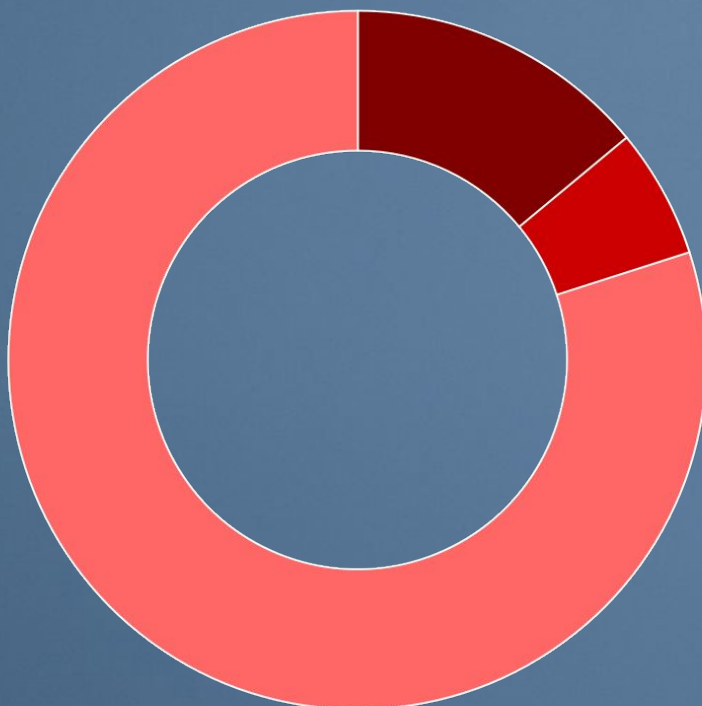
- **IREC**

- In place of NASA Student Launch this year, our club is shifting focus to the International Rocket Engineering Competition (IREC). The premise of the competition is to successfully launch a rocket to an altitude of either 10, 30, or 45 thousand feet with a minimum payload mass of 2.2 pounds. Our pursuit of this new competition will challenge our understanding of rocketry and push us to improve upon our designs and manufacturing techniques.

- **Lab Improvements**

- Due to the increasing complexity of our airframes and payloads, there is an ever growing need to expand our space and replace our equipment to maintain both our productivity and safety.

Estimated IREC Budget



- IREC Rocket Airframe (\$3,500)
- IREC Rocket Payload (\$1,500)
- IREC Travel (\$20,000)



2024-25 Statistics

52 Members attended
Interest launch



12 Club rockets launched
across 7 launch days



\$1756 Raised for Habitat
for Humanity at
Shack-a-thon



20 Members with High
Powered Rocketry
Certifications



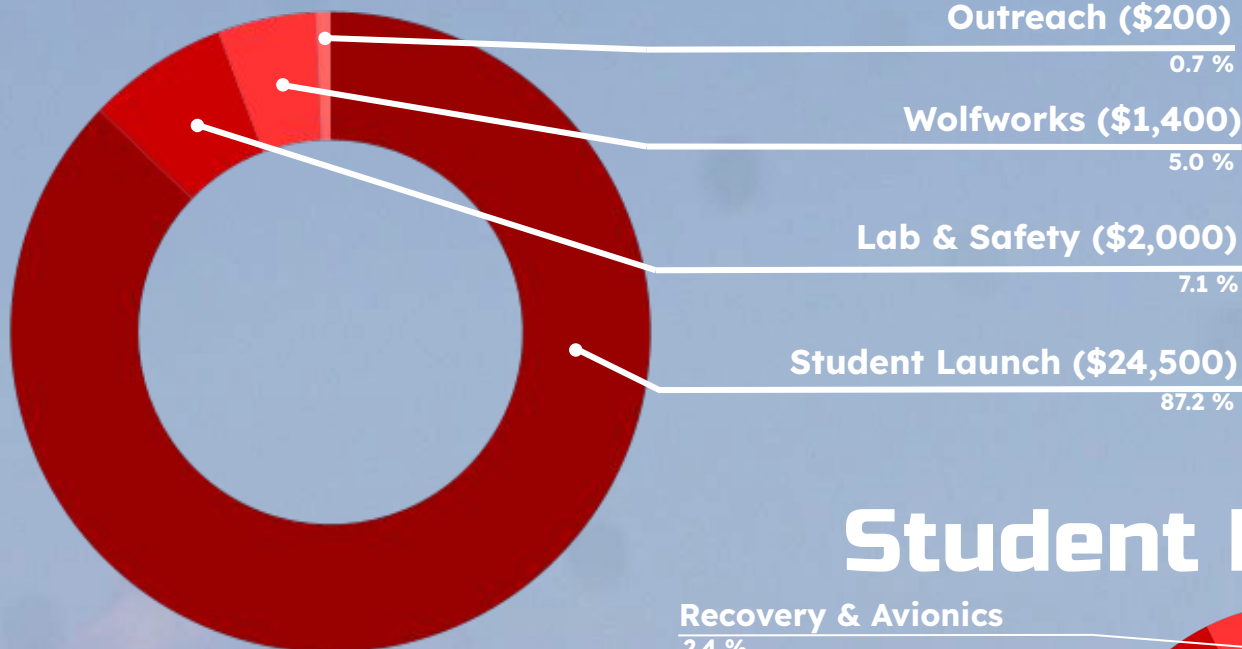
2168 Members of the
community reached
through Outreach Events



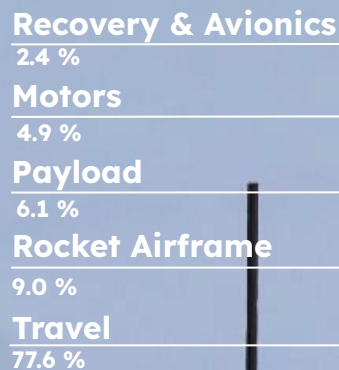


2024-25 Budget

Overview



Student Launch



Wolfworks



Total Budget: \$28,100



Sponsorship Tiers & Benefits

	Asteroid <\$500	Moon \$500+	Star \$1000+	Supernova \$2500+
Tax Benefits	★	★	★	★
Logo and Name on Website	★	★	★	★
Social Media Post	★	★	★	★
Logo on Competition Apparel	★	★	★	★
Team Networking Opportunities			★	★
Logo on Competition Rocket				★

Tacho Lycos is a 501(c)(3) nonprofit organization. All monetary and material contributions are tax deductible. We are happy to assist with any donation and benefit logistics when sponsoring our team.



Thank You For Your Support!

We look forward to you enhancing the High-Powered Rocketry Club experience for NC State's students through sponsorship support. Thank you for your time and consideration and we hope to be in contact.

To donate please visit:

<https://ncsurocketry.org/sponsorships>

Or contact us: rocketry-org@ncsu.edu

