HIGH-POWERED ROCKETRY CLUB

AT NC STATE

SPONSORSHIP PACKET 2026-2027

NC STATE UNIVERSITY

Table of Contents

About Us

The High-Powered Rocketry Club at NC State, nicknamed "Tacho Lycos", is a 50-member multidisciplinary team. We have experienced great success 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.

IREC

2023 team leads interviewed by Spectrum One News

The International Rocket Engineering Competition (IREC), is a prestigious event where student rocketry teams from across the world compete to launch high-altitude rockets. Competition criteria include a minimum payload size of 2.2 pounds, and target altitudes of either 10,000, 30,000 or 45,000 feet above ground level. Multistage rockets and all chemical propulsion types (solid, liquid, and hybrid) are allowed. IREC's competition standards are designed to encourage creativity and ingenuity in all stages of engineering.

This will be our first year competing in IREC, after earning numerous top 5 finishes and awards for altitude accuracy, social media engagement, and best-looking rocket during our time at the NASA Student Launch.

2025-2026 Team on competition day with "Jackpot", Huntsville, AL.

The 2025-26 Payload challenge for NASA Student Launch consisted of collecting and testing soil upon rocket landfall to simulate the activities of NASA probes on Mars and Venus.

NASA SL Past Rockets

2025-2026: Placed 3rd overall, won Altitude Award, STEM Engagement Award, "Best-Looking Rocket" Award.

"Jackpot"

2024-2025: Placed 2nd overall, won Project Review Award, placed 2nd in AIAA Reusable Launch Vehicle Innovative Payload Award and Safety Award

"Pelicanator"

2023-2024: Placed 5th overall

"Shake N' Bake"

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

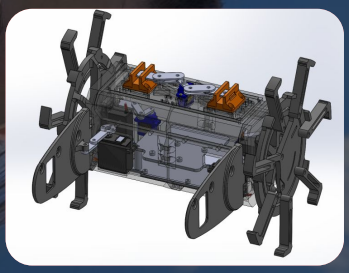
"Rainbow Road"

Wolfworks Experimental Projects

Formed in 2019, Wolfworks Experimental is the club's research and development division. Originally created to allow for focused progress towards an air brake system, it has grown to explore a variety of 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

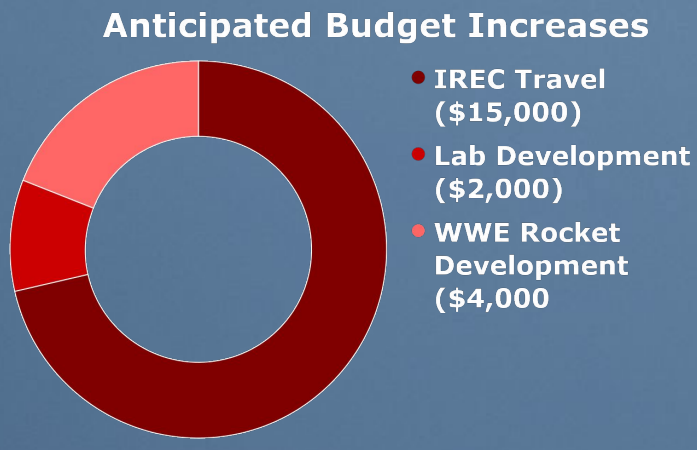
Tacho Lycos' first supersonic rocket, built with a fiberglass airframe and carbon fiber-reinforced sandwich composite fins with a birch core. It included a custom telemetry system and flew successfully to Mach 1.4 in 2023 and Mach 2.0 in 2024.

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, and was the club's first attempt at a staged rocket.

Goals

- **Competition Switch**
  - As we expand as a program, we have decided to take on the challenge of the International Rocket Engineering Competition (IREC) to test our abilities on a global stage and leave room for further expansion of our program. This unfortunately brings major increases in development and travel costs.
- **WWE Projects**
  - This coming year, our experimental team aims to build and launch a two-stage high altitude rocket, challenging ourselves to learn and integrate inter-stage coupling systems. This will allow us to reach high ascent times critical for data gathering and analysis of experimental systems being developed in parallel, such as our apogee control system and canards.
  - Another goal is to successfully launch our lightweight, subminimum diameter rocket, attempting mach 3 speeds.
- **Lab Improvements**
  - Due to the increasing complexity of our airframes and payloads, there is an ever growing need to improve and expand upon the tools and other equipment in the lab to keep up with both productivity and safety demands.



2024-25 Statistics

52 Members attended Interest launch

20 Members with High Powered Rocketry Certifications

12 Club rockets launched across 7 launch days

2168 Members of the community reached through Outreach Events

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

2024-25 Statistics

52 Members attended Interest launch

20 Members with High Powered Rocketry Certifications

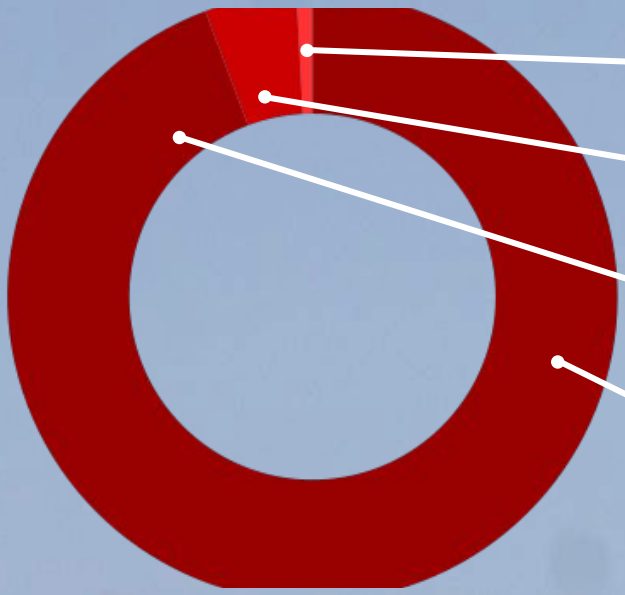
12 Club rockets launched across 7 launch days

2168 Members of the community reached through Outreach Events

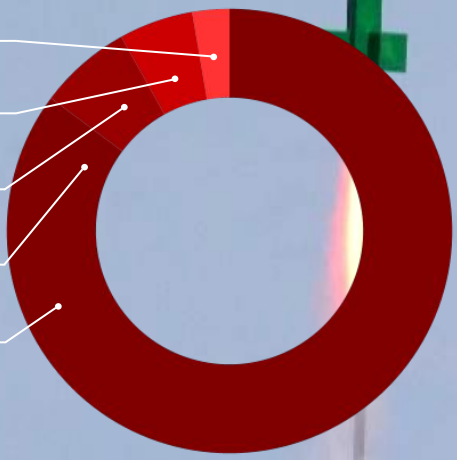
$1756 Raised for Habitat for Humanity at Shack-a-thon

2026-27 Budget

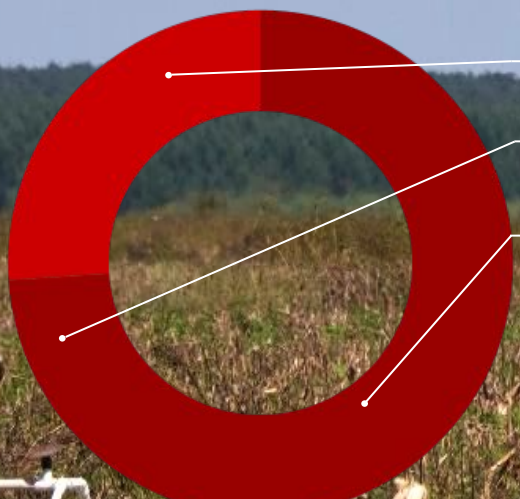
Overview



IREC



Wolfworks



Total Budget: $28,100

NC STATE UNIVERSITY

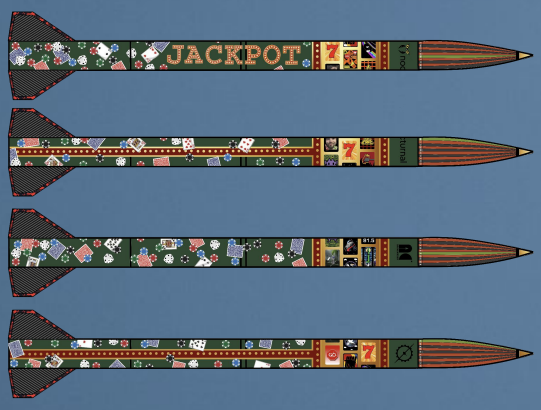
Sponsorship Tiers & Benefits

	Bronze $500+	Silver $1,500+	Gold $3,000+	Platinum $5,000+
Newsletter Updates	★	★	★	★
Branding on Team Website	★	★	★	★
Social media feature	★	★	★	★
Invitation to test launch viewings	★	★	★	★
Brand on team apparel	Small Logo	Medium Logo	Large Logo	Large Logo
Invitation to sponsor showcase event		★	★	★
Rocket Body Logos		2″ x 2″ on Body/Fin	4″ x 4″ on Body	6″ x 6″ on Body

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. Benefits stack over years.

HPRC and SKEMA

- **NASA SL**
  - We would love to foster a mutually beneficial partnership with SKEMA to promote the school on our NASA Student Launch rocket for 2026.
- **Opportunities for Promotion**
  - We are proud to display our partners at outreach events and launches. Along with events, sponsors are present on our rocket design and competition t-shirt, mock designs of which are displayed below.
  - Our club also provides various opportunities for social media promotion.
  - We can also offer further promotional opportunities for our Interest Launch, typically held in during the Fall semester.



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