



2024-2025 ANNOUNCEMENT OF OPPORTUNITY

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COLLEGIATE ROCKET LAUNCH (CRL) High-Power Rocket Competition *“High-Pressure Avionics 2K25”* APRIL 25-27, 2025

Informational Meeting: Monday, September 30, 2024 @ 6 p.m.

Applications Open: Tuesday, September 3, 2024

Notice of Intent to Compete Deadline: Thursday, October 24, 2024

Award Announcements: Tuesday, October 29, 2024

Work Period of Performance: October 29, 2024-May 31, 2025 (All Teams)
October 29, 2025-September 15, 2025 (Winning Teams)

LAUNCH 2 LEARN WORKSHOP (L2L) Level 1 High-Power Virtual Rocket Certification Workshop NOVEMBER 15-16, 2024

Launch 2 Learn Notice of Intent to Compete Deadline: October 14, 2024

A calendar of events fully detailing all program due dates is included in the competition handbook.

Purpose: The Wisconsin Space Grant Consortium’s (WSGC) Collegiate Rocket Competition is intended to supply teams of affiliated university students with the opportunity to demonstrate engineering and design skills through direct application. It allows the teams to conceive, design, fabricate and compete with high-powered rockets. The restrictions on rocket motors and dimensions are limited so that knowledge, creativity, and imagination of the students are challenged. The end-result is a great, hand-on, aerospace experience for students that would not otherwise be available in the region.

About the Program: The Wisconsin Space Grant Consortium (WSGC) announces the Annual Collegiate Rocket Launch Design Competition. This competition is an opportunity for students to design and construct rockets to be launched at a competition in the spring from Richard Bong State Recreational Area, Kansasville, WI.

Wisconsin Space Grant Consortium (WSGC) will sponsor up to ten (10) teams - one team per academic institution. To qualify for the competition, interested teams of 4-6 students will be required to submit a Notice of

Intent to Compete by a faculty member, in which the team lead and team members are listed. Teams are encouraged to seek advice from Industry, Tripoli, NAR, and others. Teams do not need to have prior rocket experience.

Note: Teams selected to participate in the Collegiate Rocket Launch Competition may only receive funding for one WSGC sponsored rocket competition. Individuals selected to compete in the Collegiate Competition cannot compete on a Midwest High-Power Rocket Launch team but are encouraged to shadow a Midwest High-Power Rocket Launch team. Only six (6) students can register per collegiate team on the WSGC registration site.

* The material contained in this document is based upon work supported by a National Aeronautics and Space Administration (NASA) grant or cooperative agreement. Any opinions, findings, conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of NASA.

Awards*: **Mission Grand Champion** - \$3000 and VIP Tour at Sierra Space in North Freedom, WI **
2nd Place - \$2000
3rd Place - \$1000
Team Funding*: up to \$1000 for rocket supplies and equipment
Travel Funding*/*:** based upon round trip travel to and from competition (*see chart below*)
Competition Rocket Motor: (*One competition motor*)
Altimeter: Jolly Logic Altimeter Two

* *Subject to availability of funds.*

***Awarded to highest scoring team that successfully completes the mission and all aspects of the competition.*

*** *Teams whose schools are outside the following radius measured from their institution to Richard Bong State Park in Kansasville, Wisconsin, are eligible to request additional travel funds at the time the preliminary budget is submitted: 1) <50 miles = no lodging; 2) >50 miles < 100 miles = 1-night hotel (maximum 2 rooms); 3) >100 miles = 2-night hotel (maximum 2 rooms). The reimbursable mileage rate is \$.67/mile. Four-member teams are eligible for up to two competition mileage reimbursements (Advisor/team). 5-6 member teams are eligible for up to 3 competition mileage reimbursements (Advisor/team). All teams are eligible for one Safety Meeting mileage reimbursement.*

NOTE: *Only one travel reimbursement per team for competition weekend.*

It is the purpose of this Announcement of Opportunity to support the innovative, visionary projects that are student-led and designed to fully realize WSGC's goal of assisting in training the next generation of aerospace professionals.

Competition Engineering Parameters

Student teams will be required to design, construct, and fly a high-power, one-stage rocket that, following apogee, will be recovered safely and in flyable condition (determined by the field Range Safety Officer), predict the rocket's flight performance, and record required flight data throughout the flight. The main aspect of this year's competition will be measuring and predicting the maximum pressure and temperature inside the main parachute deployment chamber. Additional requirements include the use of a rocket motor from a specified list, use of a COTS dual-deploy, electronic recovery system, with the function of motor ejection capabilities at apogee as a back-up. Each rocket must be equipped with a downed rocket locator; using an electronic primary GPS/RF device (a secondary audible locator is allowed but not sufficient). All structural components and materials for the rocket must be obtained from reputable high-powered rocketry vendors or an engineering analysis demonstrating their suitability must be included with the design. No "blue tube" body tubes and no self-made body tubes. The winner of the flight portion of the competition will be the team whose rocket completes a safe, successful flight with a combination of best apogee as well as accuracy of their predicted apogee and/or other select flight parameters. The competition will include a series of written reports about the design, analysis, simulation, build, and optional test flight results of the rocket, an oral presentation, plus assessment of competition flight data results. A panel of professionals will score these from both academia and industry. Scoring of the pre-competition reports and the post-flight report will focus on the system design and its performance. More details about the competition motor, reports, deadlines, etc. are available in the competition handbook.

Application Requirements

Team/Individual applicants who meet the following requirements can apply for this grant by registering and applying online at spacegrant.carthage.edu/about/login.

To qualify for the competition, individuals/teams must:

- attend any WSGC [Academic Affiliate Institution](#) full-time
- be US citizens
- have a committed faculty mentor
- have a committed Industry, Tripoli, and/or National Association of Rocketry mentor
- select a team leader

Individuals/teams:

- be comprised of 4-6 team members
- can compete without experience (*teams will be given the basic training and information required*)
- shall seek advice/mentorship from Industry, Tripoli Rocketry Association, National Association of Rocketry, and others
- shall obtain membership through Tripoli Rocketry Association and/or the National Association of Rocketry
- are encouraged to obtain Level I, II, and/or III high-powered rocket certification through Tripoli Rocketry Association or National Association of Rocketry

***Note from Tripoli:** *Without exception, university teams must involve an experienced mentor, preferably a TAP or L3CC, during the design and construction phases of their rocketry projects if they expect to fly the competition rocket at Tripoli events. The mentor must be certified at or above the level of motor the team wishes to fly AND be experienced in the type of construction, propulsion, and recovery the team uses.*

To Register and Apply

The faculty advisor must first register with WSGC before students/team members register. One exception to the order of registration exists. If the student team lead has never registered with WSGC, he/she must register before the advisor begins the Notice of Intent (NOI).

A **faculty advisor/co-advisor** must complete the following steps:

1. **CREATE a NASA STEM GATEWAY account** stemgateway.nasa.gov/public/s/login/
(applicants will be required to update profile information annually).
2. **CREATE a WSGC account** spacegrant.carthage.edu/about/login/
(applicants will be required to update profile information annually).

A **faculty advisor** must complete the following step:

1. **Sign into** your WSGC account and submit an application/supporting documents to the **ROCKET LAUNCH TEAM (CREATE NOI)** application site spacegrant.carthage.edu/about/login/.

Once the faculty advisor completes the Notice of Intent (NOI), identifies the team name, lists the co-advisor(s) (if applicable), mentor, team lead and student participants, and chooses which competition the team will compete in, the team lead and each team member will need to:

1. **CREATE a NASA STEM GATEWAY account** stemgateway.nasa.gov/public/s/login/
(applicants will be required to update profile information annually).
2. **CREATE a WSGC account** spacegrant.carthage.edu/about/login/
(applicants will be required to update profile information annually).
3. **Sign into** your WSGC account and submit an application/supporting documents to the **COLLEGIATE ROCKET COMPETITION** application site spacegrant.carthage.edu/about/login/.

[See a list of current and past award recipients](#)

Award Acceptance Components

As part of the award acceptance, 1st-3rd place awardees will attend and present at the Annual Wisconsin Space Conference as outlined in the award agreement. Participants will submit the following documents on the WSGC application website under Program Applications/Your Applications:

All Advisors/Participants

- Award Agreement Letter
- One-Paragraph Biography
- PI Professional Photo

All Team Members

- Accept the NASA STEM Gateway invitation to the Collegiate Rocket Launch Activity
- Attend the Online Kick-off Meeting
- Attend the Online Design Review Meetings
- Attend the Virtual Safety Review Meeting
- Attend Oral Design Presentation @ Carthage College
- Attend the Launch Competition
- [Submit Student Stories](#)

Winning Teams

- [Present project at the 35th Annual Wisconsin Space Conference](#)
- Submit a proceedings paper for the 35th [Annual Wisconsin Space Conference online journal](#)
- [Individual W9](#)

Team Lead

- Preliminary Design Review Report
- [RockSim model file of Preliminary Design](#)
- Preliminary Budget
- Demo Flight
- Critical Design Review Report
- Final Team Roster
- Flight Readiness Review Report
- Education Outreach Form
- Post Flight Performance Report
- 2-3 Project Photos Featuring Team Members

If you have question about the Collegiate Rocket Competition, please contact:

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Wisconsin Space Grant Consortium

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This funding opportunity is made available for the pursuit of space-related research and/or activities through the National Space Grant College and Fellowship Program: NASA Educational Cooperative Agreement #80NSSC20M0123. Catalog of Federal Domestic Assistance (CFDA) number for this award is 43.008.

All awards are fully competitive awards of opportunity in which applications are reviewed by the WSGC Technical Advisory Panel and other experts as needed. Awards are made by the Assistant Director based on recommendations from the Associate Director.

Please follow us on     for program updates

