



2023-2024

# ANNOUNCEMENTS OF OPPORTUNITY

[spacegrant.carthage.edu](http://spacegrant.carthage.edu)

## COLLEGIATE ROCKET LAUNCH (CRL)

### High-Power Rocket Competition

*“Deploy Lander and Capture Panoramic Image of Landing Site”*

**APRIL 26-28, 2024**

**Informational Meeting:** October 2, 2023 @ 6 p.m.

**Applications Open:** August 11, 2023

**Notice of Intent to Compete Deadline:** October 20, 2023

**Award Announcements:** October 27, 2023

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## LAUNCH 2 LEARN WORKSHOP (L2L)

### Level 1 High-Power Virtual Rocket Certification Workshop

**NOVEMBER 10-11, 2023**

**Notice of Intent to Compete Deadline:** October 20, 2023

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**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\*\*; 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.*

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*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, predict the rocket's flight performance, collect down-looking on-board video during the flight up, and after apogee, capture a detailed image of a designated ground target.

Additional rocket parameters include the use of a rocket motor from a specified list, and dual-deploy, electronic recovery with motor-charge backup. The rocket is required to use electronic deployment of the recovery parachute and must include motor deployment as a backup. A downed rocket location aid must be included. 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. 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.

The competition will include a series of written reports about the design, analysis, simulation, build, and 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](http://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/](https://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/](https://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 <https://spacegrant.carthage.edu/forms/account/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/](https://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/](https://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 <https://spacegrant.carthage.edu/forms/account/login/>.

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

**Award Acceptance Components:** As part of the award acceptance, 1<sup>st</sup>-3<sup>rd</sup> 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
- Media Release Form
- One-Paragraph Biography
- PI Professional Photo

#### All Team Members

- 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 34th Annual Wisconsin Space Conference](#)
- [Submit a proceedings paper for the 34th 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:**

**Dr. William Farrow**

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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**

