



**2022-2023**

**ANNOUNCEMENT OF OPPORTUNITY**

**spacegrant.carthage.edu**



**NASA’S SPACE GRANT**

**MIDWEST HIGH-POWERED ROCKET LAUNCH (MRL)**

**Informational Telecon:** Sept. 19, 2022 @ 7:00 PM; January 12, 2023 @ 7:00 PM

Contact James Flaten, [flate001@umn.edu](mailto:flate001@umn.edu) for call-in information

**MnSGC Notice of Intent to Compete Due:** October 1, 2022

**WSGC Notice of Intent to Compete Due:** October 28, 2022

**WSGC Selection Announcement:** November 10, 2022  
**WSGC Safety Meeting at Fox Valley Technical College:** March 25, 2023 (TBC)

**Launch Competition – “Precision Landing Challenge”**

**in North Branch, MN:**

May 13-14, 2023

(Rain date May 15, 2023)

**Awards\*:** Up to $2,400 *(Reimbursement provided through WSGC Program Office)*

*\*Subject to availability of funds.*

**About the Program:** The Minnesota Space Grant (MnSGC) announces NASA’s Space Grant Midwest High-Power Rocket Launch Competition. This competition is an opportunity for students to design and construct rockets to be launched at a competition in the spring of 2018 in North Branch, Minn.

Wisconsin Space Grant Consortium (WSGC) will sponsor up to three (3) teams with prior rocket experience to compete in the national competition.

*Note:  Teams selected to participate in the Midwest High-Power Rocket Competition may only receive funding for one WSGC sponsored rocket competition.  Individuals cannot compete on a Collegiate Rocket Launch team, but are encouraged to mentor a Collegiate Rocket Launch team.* **To Apply:** A faculty advisor must complete the following steps:

* Register as faculty on the WSGC website (<https://spacegrant.carthage.edu/about/login/>). Applicants will be prompted to update personal information annually.
* Submit the “Create Rocket Launch Team (NOI)” Grant Application Form (<https://spacegrant.carthage.edu/forms/application/rocket-launch-team/>).
* Submit a preliminary budget
* Complete the [Institutional Representative Acknowledgement](https://spacegrant.carthage.edu/live/files/2989-hrl17advisor-acknowledgementpdf) form

If applying for both the Collegiate and Midwest Rocket Competition, please indicate in the Rocket Launch Team NOI which competition is the school’s preference.

Once the faculty advisor completes the Notice of Intent (NOI), identifies the team name, lists the known student participants, and chooses which competition the team will compete in, each student will need to:

* Register as an undergraduate student on the WSGC website (<https://spacegrant.carthage.edu/about/login/>). Applicants will be prompted to update personal information annually.
* Upload current resume to applicant profile (optional). Applicants must check box in order to allow WSGC to share the applicant resume with Wisconsin Aerospace Industry partners for co-op, internship, and employment opportunities.
* Complete the Midwest High-Powered Rocket Competition Rocket Competition application [(https://spacegrant.carthage.edu/forms/application/midwest-high-powered-rocket-competition/)](https://spacegrant.carthage.edu/forms/application/midwest-high-powered-rocket-competition/)
* Indicate past rocket experience

**Applications 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](https://spacegrant.carthage.edu/about/login/):

* be US citizens
* attend any WSGC [Academic Affiliate Institution](https://spacegrant.carthage.edu/about/members/) full-time
* have prior rocket experience
* submit an academic [institutional representative acknowledgement](https://mail.google.com/mail/u/0/#label/WHSD/157254d70d0e5b65https://spacegrant.carthage.edu/live/files/2989-hrl17advisor-acknowledgementpdf)
* submit a preliminary budget
* have a committed faculty mentor
* be comprised of 4-6 team members
* select a team leader

Individuals/teams may:

* seek advice/mentorship from Industry, Tripoli, NAR, and others
* include Graduate students\* as long as they represent less than 50% of the team members

### “Precision Landing Challenge” (summary description): Students teams will design and construct a single motor, single stage, high-power rocket that will fly twice during the competition. The challenge is (A) to use a steerable parachute during a totally-unpowered descent to guide the rocket booster to land as close as possible to a specified ground target, probably about 1000 ft from the launch pad, and (B) to land the booster so that it remains upright. (Aside: The booster is allowed to separate from, and descend independently from, the upper section of the rocket, as long as all parts of the rocket land at safe speeds and are recovered in re-flyable condition.) Rockets will fly first on a Cesaroni 273-H-225-14A “White Thunder” (2-grain, 38 mm diameter) motor, and must exceed 1000 ft AGL (Above Ground Level). The second flight will have a target apogee as close as possible to, but not exceeding, 3000 ft AGL, and can be on any Cesaroni or AeroTech I-class or J-class 54 mm diameter motor. The rocket must carry a “non-commercial” (i.e. not sold for rocketry) data-logging sensor suite to characterize flight performance, including logging (at least once a second) GPS, av-bay pressure, 3-axis acceleration, and 3-axis rotation. The booster must also contain a look-up and look-down camera system, to collect video of the rocket motor boosting, the rocket separating, the steerable parachute in action, and the rocket landing. Bonus points will be given to teams whose members increase their certification level using individually-built rockets (which will be unrelated to the (team-built) competition rocket described above). Additional details about the competition will be included in a handbook. Note that all fabrication work on the rocket(s), except for possibly machining of plastic and/or metal parts, must be performed by students.

### Competition Handbook: <https://dept.aem.umn.edu/mnsgc/Space_Grant_Midwest_Rocketry_Competition_2022_2023/Midwest_Rocketry_Competition_Handbook_2022-2023_v2.pdf>

### Award Acceptance Requirements: As part of the award acceptance, awardees will be asked to attend and present at the Annual Wisconsin Space Conference as outlined in the award agreement and all 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
* Professional Photo

**All Team Members**

* Attend the WSGC Safety Review Meeting at EAA
* Oral Design Presentation in North Branch, MN
* Launch Competition in North Branch, MN
* Present project at the 33rd Annual Wisconsin Space Conference
* Submit a proceedings paper for the 33rd Annual Wisconsin Space Conference online journal

**Advisor**

* Institutional W9
* Quarterly Invoice

**Team Lead**

* Submit all MNSGC documents to Gary Stroick with Minnesota Tripoli Rocketry Association
* Submit copies of all MnSGC documents to WSGC
* 2-3 Project Photos
* Final Team Roster

**Please direct questions about the WSGC** [**Student Satellite Initiatives Program**](https://spacegrant.carthage.edu/funding-programs/undergraduate/rocket-competitions/collegiate/) **to:**

**Dr. William Farrow**

Wisconsin Space Grant Consortium

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Logistical questions may be directed to James Flaten, [flate001@umn.edu](mailto:flate001@umn.edu).  
Technical questions may be directed to Gary Stroick, [president@OffWeGoRocketry.com](mailto:president@OffWeGoRocketry.com).

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.

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