NASA’S SPACE GRANT
MIDWEST HIGH-POWERED ROCKET LAUNCH (MRL)

Informational Telecon: Sept. 25, 2019 @ 7:00 PM; January 16, 2020 @ 7:00 PM
Contact James Flaten, flate001@umn.edu for call-in information
MnSGC Notice of Intent to Compete Due: October 1, 2019
WSGC Notice of Intent to Compete Due: October 31, 2019
WSGC Selection Announcement: November 15, 2019
WSGC Safety Meeting at EAA: March 28, 2020 (TBC)
Launch Competition – “Photography/Altitude Challenge” in North Branch, MN:
May 16-17, 2020 (Rain date May 18, 2020)

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 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/)
- 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:

- be US citizens
- attend any WSGC Academic Affiliate Institution full-time
- have prior rocket experience
- submit an academic institutional representative acknowledgement
- 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

**Competition Engineering Parameters:** In this competition college/university student teams will design and construct a single stage (dual-deploy optional) high-power rocket that will fly twice in the competition. The target altitude for the first flight will be 2345 ft above ground level and the target altitude for the second flight will be 3456 feet above ground level. The flights can be on any Cesaroni or AeroTech I-class or J-class motor. The rocket must carry two low-cost cameras that interface with a non-commercial sensor suite described below (see later in this handbook for cost limits on cameras). The cameras are to be mounted on parts of the rocket that separate from one another in flight. Photography points during ascent (post-burnout) will be awarded for quality of footage and minimum rotation. (Active roll-control mechanisms encouraged, but not required.) Photography points during recovery will be for having each camera keep the other part of the rocket in view, especially during separation and during landing. Photography points post-landing will be awarded for the best 360° horizon panorama (video or a set of still photo(s)) from just one camera from an elevation as far off the ground as possible. The rocket must also carry a non-commercial data-logging sensor suite to characterize flight performance including (at least) axial acceleration, roll rate about vertical axis, av-bay ambient pressure plus forward-facing (stagnation) pressure (from which velocity can be determined). Sensor values must be logged at 10 Hz (minimum) and also text-overlaid on one video in real time (not post-processing). Computer/camera system likely to be Raspberry-Pi-based with Pi cameras, or something similar. All fabrication work on the rocket (except for possible machining of plastic and/or metal parts) must be performed by students.

**Summary of this year’s rules:**
https://dept.aem.umn.edu/mnsge/Space_Grant_Midwest_Rocketry_Competition_2019_2020/

**Competition Handbook:**
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 30th Annual Wisconsin Space Conference
- Submit a proceedings paper for the 30th 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 to:

Dr. William Farrow  
Wisconsin Space Grant Consortium  
Associate Director for Student Satellite Initiatives  
Milwaukee School of Engineering  
Phone: (414) 277-2241  
E-mail: farroww@msoe.edu

Wisconsin Space Grant Consortium  
Carthage College  
2001 Alford Park Drive, Kenosha WI 53140  
Phone: 262-551-6054  
E-mail: spacegrant@carthage.edu

Logistical questions may be directed to James Flaten, flate001@umn.edu. Technical questions may be directed to Gary Stroick, 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 Training Grant #NNX15AJ12H. 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 [social media icons] for program updates

Join Our Mailing List