



2016-2017

ANNOUNCEMENT OF OPPORTUNITY

spacegrant.carthage.edu

COLLEGIATE ROCKET LAUNCH (CRL)

Informational Telecon: September 22, 2016 @ 7 PM

Notice of Intent to Compete Due: October 3, 2016

Selection Announcement: October 14, 2016

Kick-off Meeting at Milwaukee School of Engineering: October 27, 2016

Safety Review Meeting at EAA AirVenture Museum: March 11, 2017 (TBC)

Oral Presentation at Carthage College: April 21, 2017 (TBC)

**Launch Competition – “Potential Electricity”
at Richard Bong Recreational Park:** April 22, 2017 (TBC)

Awards: 1st Place - \$3000; 2nd Place - \$2000; 3rd Place - \$1000

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 aerospace experience for students that would not otherwise be available in the region.

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.

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 twelve (12) 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, in which they name their team members and committed faculty mentor. Teams are allowed 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.

To Apply:

A faculty advisor must complete the following steps:

- Register as faculty on the WSGC website (<https://spacegrant.carthage.edu/about/login/>).
- Submit the “Create Rocket Launch Team (NOI)” Grant Application Form (<https://spacegrant.carthage.edu/forms/application/rocket-launch-team/>).
- 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/>).
- Complete the Collegiate Rocket Competition application (<https://spacegrant.carthage.edu/forms/application/collegiate-rocket-competition/>)

Application Requirements: To apply for this competition, individuals/teams must:

- be US citizens
- attend any WSGC [Academic Affiliate Institution](#) full-time
- submit an academic [institutional representative acknowledgement](#)
- 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
- compete without experience (*Teams will be given the basic training and information required*)

Groups of students wishing to be paired up with like-minded students at other affiliate institutions should contact the WSGC Institutional Representative for their campus. Members of groups underrepresented in aerospace disciplines are particularly encouraged to participate.

*Individual students cannot participate in more than four WI Collegiate Rocket Competitions.

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

Competition Engineering Parameters:

Student teams will be required to design, construct and fly a high-power rocket that will demonstrate a process to generate power during the pre-apogee portion of the flight. The rocket is required to use electronic deployment of the recovery parachute and motor deployment as a backup. A downed rocket location aid must be included in the design. All structural components and materials 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 and whose rocket achieves an apogee closest to 3000 feet, as recorded by a competition-provided flight recorder.

The competition will include two 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. These will be scored by a

panel of professionals 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 in the competition handbook.

Equipment/Reimbursable funds provided by WSGC:

<p>Required Competition Rocket Motor</p>	<p>Cesaroni (38mm): Thrust curve data can be found at: http://www.thrustcurve.org/searchpage.jsp</p>
<p>Competition Flight Data Recorder</p>	<p>Raven III Featherweight Altimeters http://www.featherweightaltimeters.com/The_Raven.php 1.80” long x 0.8” wide x 0.55” thick (~7 gm) Powered by a 9V battery (~45 gm) This recorder is separate from the team’s electronic deployment system and will be inserted at time of launch to record acceleration & altitude vs. time.</p>
<p>Rocket Supplies and Equipment</p>	<p>Reimbursed up to \$675. Submit a Team Reimbursement Form accompanied with original receipts to: Wisconsin Space Grant Consortium 2001 Alford Park Drive Kenosha, WI 53140 ATTN: Lisa Crumble NOTE: Final reimbursement deadline is May 8, 2017.</p>
<p>Travel Award</p>	<p>Teams whose schools are outside the following radius (round trip) measured from Richard Bong State Park, are eligible to claim: <100 miles = \$0 for mileage & lodging >100miles<200miles = \$75 mileage & 1 night hotel (maximum 2 rooms) >200miles = \$125 mileage 2 night hotel (maximum 2 rooms) NOTE: Teams must request travel funds and provide a Google map to the WSGC Program Office no later than January 09, 2017.</p>

Award Acceptance Requirements: As part of the award acceptance, awardees will be asked to attend the Annual Wisconsin Space Conference as outlined in the award agreement and 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 Safety Review Meeting
- Oral Design Presentation
- Launch Competition

Team Lead

- Preliminary Design Report
- Preliminary Budget
- Demo Flight
- Interim Progress Report
- Final Team Roster
- Final Design Report
- Education Outreach Form
- Post Flight Performance Report

Winning Teams

- Present project at the Annual Wisconsin Space Conference
- Submit a proceedings paper for the 27th Annual Wisconsin Space Conference online journal
- W9

If you have question about the Student Satellite Initiatives Program, please contact:

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