# **A drawing of a cartoon character  Description automatically generatedPATCH CONTEST*13TH Annual Competition***

**Deadline: February 21, 2022**

**Competition:**

Design the 2022 First Nations Launch High-Power Rocket Competition Patch.

**Eligibility:**

Undergraduate students attending a Tribal College or University (TCU), a Native American-Serving Nontribal Institution (NASNTI), and/or who are members of an active AISES (American Indian Science and Engineering Society) collegiate chapter.

**Themes:**

*Moon Challenge*: GPS data logger  *Mars Engineering Challenge*: Cold gas thruster system

*NOTE:* Both themes must be incorporated into a single patch design

***Moon Challenge***:
Teams shall design and construct a dual deploy high-power rocket with a GPS data logger onboard. The flight shall be stable and reach an apogee of 3,000ft AGL. Teams shall reconstruct a 3D trajectory of the rocket flight from the data collected from liftoff until landing and plot it against a satellite imagery map. The trajectory plot will verify a stable ascent.

***Mars Engineering Challenge***:

Teams shall design and construct a dual deploy high-power rocket with a cold gas thruster system that controls the rocket’s Z-axis angular velocity (roll rate) during the coast phase of its ascent. At motor burnout, the thrusters shall increase the rocket’s roll rate from 0 revolutions per minute (rpm) to 120 rpm, maintain 120-240 rpm for 3 seconds, then decrease to 0 rpm before apogee. A gyroscope sensor and an external camera is required to verify the roll rate was achieved. An altitude range of 2,000 - 4,000 ft AGL is allowed.

**Required Lettering:**

* 2022
* First Nations Launch
* 13th Annual (optional)

**Required Logos:**

Logos are available at <https://spacegrant.carthage.edu/first-nations-launch/tools-and-tips/>.

* NASA
* FNL

**Medium:**

Design should be submitted in a digital format. Hand-drawn designs may be converted to a digital image if selected. Suggested tools for creating your design include but are not limited to:

* Adobe Illustrator
* Photoshop
* InDesign
* Microsoft Word

 **Shape:**

Designs can be square or circular, no larger than a 4” diameter. A border must be a part of the final image.

**Entry Information:**

Submit entries to the Wisconsin Space Grant Consortium spacegrant@carthage.edu.

* Subject line: FNL22\_Patch Contest
* Applicant Information:
	+ Name
	+ Home Mailing Address
	+ Phone Number
	+ Email
	+ Academic Institution
	+ AISES Chapter (if applicable)

Design entry must be entrant’s original design. It may not be copied or traced from another source.

**Evaluation Criteria:**

The following evaluation criteria will be equally weighted.

* Design Aesthetics
* Communication of Mission Themes
* Communication of the Spirit of FNL

**Winners:**

Designer of the winning design will be awarded a $100 cash prize and their design will be the official 2022 competition patch distributed to all participants. Last year’s winning patch design can be found at <https://spacegrant.carthage.edu/first-nations-launch/patch-contest/>.

**WSGC and the contest organizers:**

* Reserve the right to not use any entries submitted for the patch contest.
* Will honor the original artwork composition as much as possible. Changes made to the design will only be made when necessary to create the final patch design.
* Reserve the right to exclusively authorize the reproduction of the winning design.
* Reserve the right to utilize the patch imagery in future NASA, WSGC, and First Nations Launch marketing.
* Cannot confirm individual designs have been received.
* Have the right to use the winning applicant’s name and image without compensation.

# **TEMPLATE (OPTION 1)**

|  |  |
| --- | --- |
| Name: |  |
| Mailing Address: |  |
| Phone Number: |  |
| Email Address: |  |
| Academic Institution: |  |
| AISES Chapter (if applicable): |  |
| Patch Description (please provide a brief description of your patch noting the meaning behind significant design elements): |  |

# **TEMPLATE (OPTION 2)**

|  |  |
| --- | --- |
| Name: |  |
| Mailing Address: |  |
| Phone Number: |  |
| Email Address: |  |
| Academic Institution: |  |
| AISES Chapter (if applicable): |  |
| Patch Description (please provide a brief description of your patch noting the meaning behind significant design elements): |  |