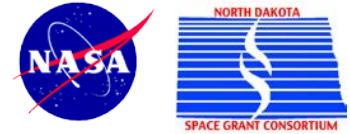


2016 Near Space Balloon Competition (NSBC) Proposal Submission Form



The North Dakota Space Grant Consortium (NDSGC) and the University of North Dakota (UND) will be holding the sixth annual Near Space Balloon Competition in the fall of 2016. We invite all interested North Dakota 6th-12th grade students to submit a payload proposal using this form. Please submit completed proposal forms by **September 30, 2016** by email or mail to:

balloons@ndspacegrant.org

or

North Dakota Space Grant Consortium
Clifford Hall Room 513
4149 University Avenue Stop 9008
Grand Forks, ND 58202-9008

Teams will be notified of their proposal's acceptance by **October 7, 2016**. Accepted teams will be reimbursed up to \$250 for supplies and additional travel funds will be provided for your team to attend and participate in the balloon launch.

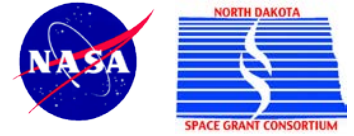
For more details, visit blogs.und.edu/nsbc.

Tentative Schedule of Events

September 30, 2016	Proposals Due
October 7, 2016	Teams Notified of Acceptance
October 17, 2016 – October 21, 2016	Web meeting for accepted proposals (Individual Teams)
November 14-18, 2016	Midterm progress report web meeting (All Teams)
November 18, 2016	Pre-launch orientation meeting @ UND
November 19, 2016	Launch Day
<i>December 3, 2017</i>	<i>Back-up Launch Date</i>

If you have any questions please contact Marissa Saad or Mike Cook by email at balloons@ndspacegrant.org.

2016 Near Space Balloon Competition (NSBC) Proposal Submission Form



I. Proposal Form Instructions

1. Please fill in all applicable fields completely to ensure full consideration of your proposal.
2. You may attach additional documents and information at the end of the form.
3. Submit completed form by **September 30, 2016** by email or mail to:

balloons@ndspacegrant.org

or

North Dakota Space Grant Consortium
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Grand Forks, ND 58202-9008

II. Payload Guidelines

We encourage you to be creative when designing your payload. However, we must enforce the following design limitations, in order to comply with FAA safety regulations.

1. The fully completed payload **MUST** be 1.5 pounds or lighter.
2. Payloads may not exceed 2 ft x 2 ft x 2 ft.
3. Please do not launch animals! (Plants are allowed).
4. If you wish to use any radio equipment, please contact us.
5. Please do not incorporate anything that may explode, has a projectile, or could accidentally contact another payload.

2016 Near Space Balloon Competition (NSBC) Proposal Submission Form



Team Information

School: _____

Faculty Mentor Name: _____

Contact Email: _____

Phone: _____

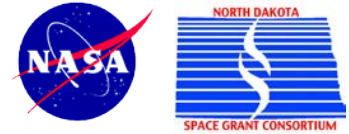
Mailing Address:

Team Name: _____

(Attention teachers: if your NSBC team is your entire class, you may add more than 20)

Team Member	Grade	Team Member (continued)	Grade
1.		11.	
2.		12.	
3.		13.	
4.		14.	
5.		15.	
6.		16.	
7.		17.	
8.		18.	
9.		19.	
10.		20.	

2016 Near Space Balloon Competition (NSBC) Proposal Submission Form



III. NSBC 2015 Mission Objective

A. Heliophysics, or the study of the Sun.

How does the Sun support life on Earth? What effects does the Sun have on planets, like Earth? How do solar panels relate to the Sun? What is solar wind? How do electricity and magnetism relate to the Sun? Do the ozone layer and ultraviolet light have a relationship? These are just a few of the questions you may decide to investigate during the 2016 Near-Space Balloon Competition. This year, NSBC will focus on heliophysics, or the study of the **Sun**.

While studying heliophysics during NSBC, we will celebrate the **Total Solar Eclipse of 2017**. But first, what is an eclipse?

On August 21, 2017, the Sun, Moon, and Earth will form a straight line. The Moon will transit in front of the Sun, making midday appear to be midnight! The Moon's shadow will pass over the coast of Oregon, travel across the Midwest, and exit through South Carolina, where it continues across the Atlantic Ocean. Select few cities will experience totality. Here in North Dakota, you'll still experience a partial solar eclipse. Get ready for this once-in-a-lifetime experience!

The North Dakota Space Grant Ballooning Team will be travelling to Idaho during the total solar eclipse. We will be launching a 2,000-gram balloon to view the eclipse from 100,000 feet in the air! We'll be able to see the Moon's shadow travel across Earth's surface, as well as the disappearance of the Sun! We will take the **grand prize winner's** payload and launch it on our balloon, during the total eclipse (*check out the Prizes tab on our website!*). Knowing that your payload may fly during a total solar eclipse, think of what you may want to study on August 21, 2017! Our NSBC launch could be your *control* flight to compare it to the eclipse flight!

To learn some quick facts about the Sun and the upcoming eclipse, check out the following websites:

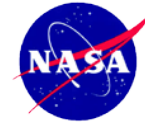
Fun Facts about the Sun: <http://goo.gl/5xNb8K>

Heliophysics Vocabulary: <http://goo.gl/7Xxjwx>

Interactive map of the Eclipse: <http://goo.gl/WkXU>

25 Facts about the 2017 Eclipse: <http://goo.gl/aqz17x>

2016 Near Space Balloon Competition (NSBC) Proposal Submission Form

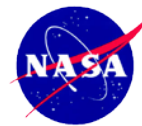


IV. Payload Details

A. Payload Analysis

1. Describe the objective(s) for your payload.
2. What is your hypothesis for the experiment?
3. Describe how the experiment will meet your objective(s).
4. What is the control group for your experiment?
5. How will you record the data?
6. Describe how your payload objectives may be affected if you're selected for launch during the total solar eclipse. What scientific outcomes do you predict?

2016 Near Space Balloon Competition (NSBC) Proposal Submission Form



B. Please provide a material list and rough budget for your payload:

Materials	Quantity	Cost

C. Please provide a sketch or schematic of your proposed payload. (Attachments are acceptable.)

Note: Submitted designs must indicate where the balloon string will run through payloads. Teams must attach clear vinyl **tubing** (found at Menards, Lowe's, etc.) in this designated spot. UND launch teams will later pass the string through this tubing. Consider how your payload will oscillate and rotate during flight, when suspended with the string.

If you would like more information about preparing your payload with tubing, please email balloons@ndspacegrant.org or refer to your **NSBC Handbook (page 17)**.