Wyoming NASA Space Grant
Spring 2017 Board Meeting
Welcome and Introductions

• Central Wyoming College
  – New representative – Jacki Klancher

• Laramie County Community College – Albany Co.
  – Retiring representative – Burt Davis

• Eastern Wyoming College
  – Retiring representative – Peggy Knittel
NASA and Space Grant Updates
2017-2018 National Meetings

- Fall 2017 National Mtg – Grand Forks, ND

Time to Make Your Plans!
Come to North Dakota for the
2017 National Space Grant Directors’ Meeting
Grand Forks, North Dakota
September 14-16, 2017

Stay at the Canad Inn, connected to the Alerus Center. Fly into Grand Forks International Airport-GFK (10 minutes away) or Fargo’s Hector International Airport -FAR (1 hour away)

National Meeting Website:
http://ndspacegrant.und.edu/national-meeting/information.aspx

Potential Tours (9/13):
Grand Forks Tours:
- Boathouse on the Red River (kayaking)
- Human Space Flight Laboratory
  (Space Suits, Inflatable Habitat, Electric Rover, Spacecraft Simulators)
- Ralph Engelstad Arena (Hockey Arena)
- Rhombus Brewery
- Turtle River State Park - 20 min drive
- UND Aerospace Tour

Fargo Tours:
- Fargo Air Museum
- Wood Chipper from Fargo movie
- Tours to Fargo Breweries (up to 4 places)
- Hjemkomst Center

Greater ND Tours:
- International Peace Gardens - 3 hour drive
- Ronald Regan Minuteman Missile Site - 1.5 hour drive

Check out the video for meeting details!
2017-2018 National Meetings

• Spring 2018 National Mtg – Washington, DC
  – Early March 2018

• Fall 2018 National Mtg – Stowe, VT
  – September 13-15, 2018
Evaluation and New Awards

• Space Grant External Evaluation
  – Still waiting.......  

• Solicitation for New Space Grant Awards
  – Expected in summer 2017
  – Awards to be given in Spring 2018
  – All Space Grant on same timeline
  – Details and award periods uncertain
President Trump signs NASA Transition Bill into law for FY 17

SEC. 824. EDUCATION AND OUTREACH.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) United States competitiveness in the 21st century requires engaging the science, technology, engineering, and mathematics (referred to in this section as “STEM”) talent in all States;

(2) the Administration is uniquely positioned to educate and inspire students and the broader public on STEM subjects and careers;

(3) the Administration’s Education and Communication Offices, Mission Directorates, and Centers have been effective in delivering educational content because of the strong engagement of Administration scientists and engineers in the Administration’s education and outreach activities;

(4) the Administration’s education and outreach programs, including the Experimental Program to Stimulate Competitive Research (EPSCoR) and the Space Grant College and Fellowship Program, reflect the Administration’s successful commitment to growing and diversifying the national science and engineering workforce; and

(5) in order to grow and diversify the Nation’s engineering workforce, it is vital for the Administration to bolster programs, such as High Schools United with NASA to Create Hardware (HUNCH) program, that conduct outreach activities to under-served rural communities, vocational schools, and tribal colleges and universities and encourage new participation in the STEM workforce.

(b) CONTINUATION OF EDUCATION AND OUTREACH ACTIVITIES AND PROGRAMS.—

(1) IN GENERAL.—The Administrator shall continue engage- ment with the public and education opportunities for students via all the Administration’s mission directorates to the max- imum extent practicable.

S. 442—48

(2) REPORT.—Not later than 60 days after the date of enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report on the Administration’s near-term outreach plans for advancing space law education.
NASA – New Administration

• Some uncertainty……..

• For FY18, the President has proposed eliminating the NASA Office of Education

• The proposal does not affect the status of the Space Grant program, but could shift management to the Science Mission Directorate
NASA Space Grant Budget

• If Congress passes a Continuing Resolution for FY 2017 today.....
  – NASA Space Grant - $40M ($570,000 for WY)
  – Same as FY 2016
NASA Space Grant Budget

• Space Grant adding two additional Consortia
  – Currently 52 w/ Washington DC and Puerto Rico
  – Adding: Guam and the Virgin Islands
NASA Space Grant Budget

• Currently two levels of Space Grant funding
  – Designated Consortia ($760K)
  – Program and Capability Enhancement Grants ($570K)
## CC STEM Scholarships

- **2017-2018 Funding $32,500**

### Community College Awards for 2017-2018
Based on Spring 2016 FTE - WYCC Commission Report

<table>
<thead>
<tr>
<th>College</th>
<th>FTE</th>
<th>% of FTE</th>
<th>2017 Awards</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casper</td>
<td>1,914</td>
<td>21</td>
<td>$6,800</td>
<td>Check</td>
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<tr>
<td>Central</td>
<td>738</td>
<td>8</td>
<td>$2,800</td>
<td>Space Grant</td>
</tr>
<tr>
<td>Eastern</td>
<td>584</td>
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<td>$2,200</td>
<td>Space Grant?</td>
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<tr>
<td>LCCC</td>
<td>1,963</td>
<td>21</td>
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<td>NWC</td>
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<td>NWCCD</td>
<td>1,447</td>
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<td>Western</td>
<td>1,385</td>
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<td>Check</td>
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<tr>
<td><strong>Totals</strong></td>
<td>9,173</td>
<td>100</td>
<td>$32,500</td>
<td></td>
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</table>
Cool Ideas from National Meeting

• StarNet: Resources for Libraries
  – http://www.starnetlibraries.org/
  – Eclipse kits

• NASA Fame Lab USA
  – https://famelab.arc.nasa.gov/
  – Challenge yourself to communicate big ideas simply – national competitions
On Monday, August 21, 2017, all of North America will be treated to a rare celestial event, an eclipse of the sun.

Total Solar Eclipse
August 21, 2017

On Monday, August 21, 2017, all of North America will be treated to an eclipse of the sun. Anyone within the path of totality can see one of nature's most awe-inspiring sights - a total solar eclipse. This path, where the moon will completely cover the sun and the sun's tenuous atmosphere - the corona - can be seen, will stretch from Salem, Oregon to Charleston, South Carolina. Observers outside this path will still see a partial solar eclipse where the moon covers part of the sun's disk. NASA created this website to provide a guide to this amazing event. Here you will find activities, events, broadcasts, and resources from NASA and our partners across the nation.
Experience the 2017 Eclipse Across America

Eclipse LIVE STREAM
Live Streaming Video

ECLIPSEMAP & CARTOGRAPHY

TOTAL Solar Eclipse
WHO? WHAT? WHERE?
WHEN? and HOW?

eclipse2017.nasa.gov/
Join Us August 21, 2017

Join us in this first-of-its-kind citizen science project, gathering scientifically valuable data from the total solar eclipse that will traverse North America on August 21, 2017.
Eclipse MegaMovie 2017 Project

The Project

The Eclipse Megamovie Project will gather images of the 2017 total solar eclipse from over 1,000 volunteer photographers and amateur astronomers, as well as many more members of the general public. We’ll then stitch those media assets together to create an expanded and continuous view of the total eclipse as it crosses the United States.

LEARN MORE

How to Participate

If you will be along the path of totality for the total solar eclipse on August 21, 2017, then we hope you can participate in the Eclipse Megamovie Project! We want as many photos of the eclipse as we can gather, and we will have a special upload site for the public to submit their photos.

Over 1,000 experienced photographers will be part of a special team taking photos from known locations and with verified equipment. Others will be able to use their mobile devices (including special eclipse photography apps) that will work with the Megamovie project.

Sign in using the link above to create a profile, check if you’ll be in the path of totality, and learn more about the ways you can participate.
Eclipse MegaMovie 2017 Project: Eclipse Simulator
Solar Eclipse 2017: Life Responds Citizen Science Project

Solar Eclipse 2017: Life Responds

How does life respond to the dramatic event of a total solar eclipse?

There is some evidence that plant and animal life notice and react to the changes that occur during a total solar eclipse. Birds are reported to stop singing, spiders may tear down their webs, gray squirrels retreat to their dens, and more. Much of these reports are anecdotal or from captive animals.

On August 21, 2017, a total solar eclipse will cross a large portion of the United States. We want to take advantage of this once in a lifetime viewing experience and opportunity for experimentation by encouraging citizen scientists all across the country in areas with at least 80% coverage to report changes in animal and plant behavior.

We hope you will join us in using the iNaturalist app to record behavior changes you observe during the August 2017 eclipse.

Stay tuned for more!

Are you involved in behavioral ecology? Are you interest in how certain life forms react to eclipses? Could widespread records of behavior changes inform your research? Interested in what we find? We are looking for both scientific and engagement partners.

For more information contact: citizenscience@calacademy.org

Photo by Luc Viatour CC-BY-SA

How to view a Solar Eclipse

Witnessing a Solar Eclipse is an amazing experience. Watch this great video on how to observe solar eclipses safely. We are gathering data on how animals and plants react to the total solar eclipse. Read more below and join us in August 2017.
Upcoming Events

• Women in STEM – May 16, 2017
  – Expecting close to 600 students
  – 26 workshops

• CWC Women in Science – May 16
Upcoming Events

• Wyoming Department of Education: Roadmap to STEM Conference
  – Gillette College
  – August 2-4

• Wyoming Afterschool Alliance Conference
  – Little America - Cheyenne
  – October 4-5
Upcoming Events

• Wyoming Math and Science Teacher Conference – Casper College
  – October 16-17

• Rocky Mountain Citizen Science Conference
  – Cody
  – Nov 30 – Dec 1
Upcoming Events

- Community College REU Program – Year 3
- May 22 – July 28
- 2 Space Grant students

*Update from Megan*
Wyoming NASA Space Grant
Community College REU:
Research Experience for Community College Undergraduates

Upcoming Events

• Community College REU Program – Year 3
• May 22 – July 28
• 2 Space Grant students

*Update from Megan

Summer 2017
Year Three
(one-year no-cost extension)

wyomingspacegrant.uwyo.edu

NASA Space Grant Consortium
Spring 2017
Laramie, WY
Supporting 2 students (both returning)
- One in mathematics
- One in engineering (mechanical)
These two students will be a part of a larger cohort of 12 chemistry and astronomy students.
Upcoming Events

• Community College REU Program – Year 3
• May 22 – July 28
• 2 Space Grant students

*Update from Megan

Program Highlights

• Students live in apartment-style housing complex
• Student participate in trainings (lab safety, ethics, etc.)
• Students participate in extra-curriculars (Yellowstone/Teton Trip, NREL visit, Rockies game, wind farm visit, etc)
Upcoming Events

• Community College REU Program – Year 3
• May 22 – July 28
• 2 Space Grant students

*Update from Megan

“The REU program was one of the best experiences I ever had. I made new friends, learned how to work with computer science in ways I had never imagined and gained the confidence to go for my bachelors (and eventually masters) in mathematics.”
Space Grant Director Transition

• Appointment of an Interim Director

• **Consortium Meeting**

• **Consortium Consensus on Changes**

• Request to NASA for Consortium Changes

• Submission of Change Request Package
Leadership Program Plan

- Vision
- Mission
- Goals
- Program Elements
- Leadership Structure
- Affiliate Engagement
• To provide educational and research opportunities in the state of Wyoming in support of NASA missions and to serve as a link between Wyoming citizens and NASA programs
• To promote a strong educational base in STEM from the elementary grades through the university levels
• To encourage participation of women and underrepresented populations in STEM and develop programs to support these students and faculty
• To recruit and train professionals for careers in STEM to enhance workforce and economic development in Wyoming
• To develop collaborations with educational organizations, government institutions, and industry
• To raise awareness of NASA and Space Grant programs
• Focus on diversity within programs
• Provide opportunities for research experiences for students and support STEM workforce development through hands-on experiences
• Recruit community college students into Space Grant and NASA programs
• Develop research infrastructure in Wyoming
• Improve STEM education at the college level
• Provide opportunities for STEM teacher training and in-service professional development
• Provide opportunities for and distribute NASA and STEM resources to teachers, informal educators and students in Wyoming
Program Elements

- Internships, Fellowships, and Scholarships
- Research Infrastructure Projects
- Precollege Projects
- Informal Education Projects
- Higher Education Projects
# Program Elements

<table>
<thead>
<tr>
<th>NASA Internships, Fellowships, Scholarships</th>
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<tbody>
<tr>
<td>1. Graduate Fellowships</td>
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<tr>
<td>2. Undergraduate Fellowships</td>
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<td>3. Engineering Senior Design Fellowships</td>
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<tr>
<td>4. NASA Center Summer Internships</td>
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<tr>
<td>5. Community College Transfer Scholarships</td>
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<tr>
<td>6. Community College STEM Scholarships</td>
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<tr>
<th>Higher Education Projects</th>
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<tbody>
<tr>
<td>1. Faculty Education Enhancement Grants</td>
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<td>2. Balloon Satellite Program</td>
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<td>3. 2017 Eclipse Ballooning Project</td>
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<td>4. Astronomy Workshop and Afterschool Program - Casper Planetarium</td>
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<td>5. WiMSE Student Organization Support</td>
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<tr>
<th>Research Infrastructure Projects</th>
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<tr>
<td>1. Faculty Research Initiation Grants</td>
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<tr>
<td>2. Travel Grants for STEM Students</td>
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<tr>
<th>Precollege Projects</th>
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<tr>
<td>1. Women in Science Conference</td>
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<td>2. Robotics Competition Support</td>
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<tr>
<td>3. State Science Fair</td>
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<tr>
<td>4. Traveling Space Trunks &amp; Science Kits</td>
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<td>5. Teacher Professional Development Grants</td>
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<th>Informal Projects</th>
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<tr>
<td>1. Wyoming Afterschool Alliance STEM Support</td>
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</table>
Leadership Structure

Dr. Shawna McBride
Interim Director

Michele Turner
Program Coordinator for College Level Programs

Megan Candelaria
Associate Director for CC and K-12 Programs

Samantha Ogden
Planetarium Director and K-12 Program Coordinator
Affiliate Engagement

• Affiliate specific programs and projects
  – Longer term projects
  – Example – Casper Planetarium projects
    • Astronomy camp
    • Afterschool STEM programs
    • Science fair and robotics competition support

• Community college research opportunities
  – Faculty grants
  – UG research fellowships and/or internships
  – CC REU programs
Input from Consortium Members
TIME FOR A BREAK
2017 Total Eclipse News from Casper
Dr. Andrew Young and Michele Wistisen
2017 Total Eclipse News from Riverton
Suki Smaglik

Agate Adventures
NASA Microgravity Team and Senior Design Update
Dr. Kevin Kilty
During the 2015-2016 School year, NASA Space Grant worked with approximately 1600 K-12 students!
This included events such as:

- Women in STEM
- Wyoming State Science Fair Balloon Launches
- STEM Saturday
- Campus STEM visits
- Classroom visits
- Partnerships with the Boys and Girls Club and Big Brothers Big Sisters
Science Fridays
with the
Boys and Girls Club
of Carbon County
We have also done several Eclipse Education Professional Developments, with several more planned!
2017 Solar Eclipse

AUGUST 21, 2017 | WYOMING

Don’t get caught in the dark!
2017 Eclipse Education Workshop

WHO
Wyoming Educators*
*Note that the workshop is targeted for grades 5-9, however all educators are welcome to attend.

WHEN
Friday, April 21st
(starting at 5pm)
Saturday, April 22nd
(9am-3:30pm)

WHERE
University of Wyoming
Materials, Food, and PTEB credit will be provided

WHAT
On August 21, 2017 a total solar eclipse will occur over North America. Learn how to take advantage of this spectacular teachable moment and engage your class and community in investigating and experiencing the eclipse. Workshop sessions include ties to Wyoming State Standards, understanding the science of the eclipse, learning about the state-wide eclipse projects, as well as exploring UW resources such as the planetarium.
These activities work to:

- promote a strong educational base in STEM from the elementary grades through the university levels
- encourage participation of women and underrepresented populations in STEM and develop programs to support these students and faculty
NASA Space Grant
K-12 Program Update
“Let’s Make STEM Happen!”

Which help to build our STEM pipeline
Highly Qualified STEM Workforce (industry, academia, etc.)

STEM Literacy - General Public

K-12 Students
- Elementary
- Middle School
- High School

K-12 Educators
- In-Service Teachers
- Pre-Service Teachers
- OST Providers

Engineering Undergraduate Scholarships

Enzi STEM building as a 'hub' for STEM Outreach activities and STEM PD

Middle School Exploring Engineering

In-Service and Pre-Service Professional Development

Faculty

Industry

STEM 'Pipeline'

Undergraduates

STEM Outreach
- Mentoring, (Eg. Science Fair) STEM Mobile, Classroom visits, Campus visits, field trips, etc.

NGSS, Engineering Design, Current Research

Service Learning Benefits
- greater understanding of their respective fields as a whole

Professional Benefits
- a generation leaders who have experience in and are passionate for community and school outreach and who have the ability and drive to communicate the importance, impact, and meaning of the work that they do

Graduate Students

Mentoring
- Successful mentoring is often cited as among the most influential factors on degree completion

Research Experiences
- REUs and RETs
- Internships

Increased Faculty Satisfaction/Retention

Strengthen Broader Impacts

Undergraduates

WIMSE
- (Women in Mathematics, Science, and Engineering)

Mentoring (Upper to lower level, graduate to undergraduate)

First and Second Year Support

Advising and Academic Support

Broader Impact Support

Engagement in Active Learning

Opportunities for Interdisciplinary Work

Disengagement from 'silod' research
Scholarships, Internships, Fellowships, and Grants
Community College Awards

• Community College STEM Scholarships
  – 36 total awards to date
    • 21 women (58%)
    • CC – 13, CWC – 4, NWC – 6, NWCCD – 6, WWCC – 7
Community College Awards

• CC Transfer Scholarships (up to $4,000)
  – 3 students
  – 1 woman
  – LCCC, CWC, Casper College

• CC REU Summer Fellowships
  ($4,500 + room and board and travel)
  – 2 students – NASA
Research Fellowships

- Undergraduate Research Fellowships (up to $5,000)
  - 18 awards (8 women)

- Graduate Research Fellowships (PhD - $20,000; MS - $15,000 + tuition/fees/health ins)
  - 6 awards (3 women)
Faculty Grants

• Faculty Research Initiation Grants ($20,000)
  – 5 awards (1 women)

• Faculty Education Enhancement Grants ($10,000)
  – 4 awards (3 women)
  – Eastern Wyoming College – 1 awards
  – Central Wyoming College – 2 awards
Travel Awards

• Travel grants for scientific conferences ($250)
  – Close to 40 travel grants
New Things on the Horizon
New Grant in FY 2018

Opportunities straight ahead

UNCERTAINTY AHEAD
Wyoming NASA Space Grant Website

SPONSORING EDUCATIONAL AND RESEARCH PROGRAMS IN WYOMING
Community College Transfer Scholarships

• New Deadline: January

• UW Financial Aid wants us to follow their schedule for CCTS and students apply through UW system

• This created some confusion this year, but we will advertise better next year......
Odds and Ends

• Fall 2018 Meeting at WWCC?

• Travel reimbursements

• Let us know if your contact info has changed
Thank you for Coming!