Wyoming NASA Space Grant
Spring 2016 Board Meeting
Welcome, Introductions, and Lunch
NASA – Space Grant Updates

• National and Regional Meetings
  – Fall 2016 Western Regional Mtg – Bend, OR
    • Sept 30 – Oct 1, 2016
  – Spring 2017 National Mtg – Washington, DC
    • Early March 2017
NASA – Space Grant Updates

• Solicitation for new 5-year grants expected in summer 2016

• OEPM Reporting DUE: June 3
  – Please send us your data if you haven’t already
Interesting info from meetings

• Space Station Academy
  – [http://thevirtualhighschool.org/ssa](http://thevirtualhighschool.org/ssa)
  – 4 week online voyage for students 10-18 through the Virtual High School

• Institute on Teaching and Mentoring
  – 4-day conference in Tampa, FL – Oct 27-30, 2016
  – Provides minority scholars with strategies to survive graduate school and receive PhDs

• First Nations Launch Competition – Wisconsin Space Grant
  – [https://spacegrant.carthage.edu/first-nations-launch/](https://spacegrant.carthage.edu/first-nations-launch/)
  – Opportunity for students attending a tribal college to design, build, and fly a rocket
Interesting info from meetings

• Voyage solar system scale model
  – 2000 ft walking path for $29,500
NASA – Space Grant Updates

• Budget FY 2016-2017 - $570,000
### CC STEM Scholarships

- **2016-2017 Funding $32,500**

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CC STEM Scholarships

• How is everything going

• Student recruitment strategies

• Online application system
  – Who is using it?
  – How is it working?
  – Improvements?
Upcoming Events

• Women in STEM – May 17, 2016
  – Expecting close to 600 students
  – 26 workshops
  – NCWIT Computer Science Awards

• CWC Women in Science – May 17

• Community College Transfer Scholarships
  – Applications DUE: May 27
  – Volunteers to review?
Wyoming NASA Space Grant Community College REU:
Research Experience for Community College Undergraduates

Summer 2015
Year One
Wyoming NASA Space Grant
Community College REU:
Research Experience for Community College Undergraduates

- 11 students total
  - Physics
  - Geology
  - Chemistry
  - Astronomy
  - Biology/Zoology
  - Civil Engineering
  - Chemical/Petroleum Engineering

wyomingspacegrant.uwyo.edu
NASA Space Grant Consortium
Wyoming Space Grant Consortium
Spring 2016  Laramie, WY
Mentors and Partners

• Partnership with Astronomy and Chemistry
  • Cohort of 19 students total

• Mentors matched ahead of time
  • Based on student research interest

• Students were paid a monthly summer stipend
  • Housing was provided
Extra-Curricular Activities

- Community Building Events
  - Day hikes
  - Weekly lunches/dinners
  - Student led: sand volleyball, movie marathons, camping trips, other

‘Holistic’ Approach
Extra-Curricular Activities and Black Thunder Visit
Extra-Curricular Activities
NREL Visit

wyomingspacegrant.uwyo.edu
NASA Space Grant Consortium
Wyoming Space Grant Consortium
Spring 2016
Laramie, WY
Case 1 – Bad Chemistry
Case 2 – Request From a Former Student
Case 3 – Is it Plagiarism?
Case 4 – Look, I’ve Changed
Case 5 – Too Much Help is Not Enough
Case 6 – Friendship vs. Authorship
You have been assigned to the Academic Appeals Board of the University of Wyoming, in which capacity you are charged with rendering a decision concerning the case that John Hoberg, a graduate student in physical chemistry, has brought against his PhD mentor, Professor Brian Leonard. This morning you will have the opportunity to hear the positions being taken by the student and the professor in this matter, and you will be allowed to ask questions of them with respect to the issues. So that you may move efficiently into your investigations and discussions, I am providing you with the following essential elements of the case:

1. Professor Leonard is John Hoberg’s PhD mentor.

2. Professor Leonard failed Mr. Hoberg on his PhD preliminary examination, which under the regulations of the Department of Chemistry Graduate Program terminates his doctoral program at the University of Wyoming. The departmental standards state that a student must pass every question to pass the preliminary examination, and Professor Leonard has issued a failing grade on one question.

3. Professor Leonard has stated that, “In grading the qualifying examination, I found that every one of the answers conveyed an acceptable understanding of the subject matter. There was no serious weakness in any of the areas of physical chemistry, and Mr. Hoberg appeared to be a reasonably competent—if not brilliant—doctoral candidate.”

4. The basis for the failure derives from Mr. Hoberg’s answer to an open-ended “philosophical” question that is often part of graduate exams: “What is the age of the universe and how do we know this?” Professor Leonard has stated that one of the fundamental purposes of this question is to determine a student’s understanding of the epistemology of science.

5. The transcript of Mr. Hoberg’s answer is as follows:
   According to science, the universe is 13.5-14 billions years old. This age is based on ... [here he provided a rather cursory but adequate account of the physical chemistry of background radiation measurements, but cosmology is not at all within his field of study]. However, I know that this answer is incorrect. I believe that the universe is six thousand years old. And how do I know? I know because I have absolute and complete faith in the literal accuracy of the Bible. Because I’ve accepted Jesus as my Savior I have no doubt that every word of Scripture is true, and the best account of the dates provided in the Bible places the creation of the world at 6,000 years before the present.”

6. Professor Leonard contends that although it appears that Mr. Hoberg could have provided the correct, scientific answer, the answer he gave is unacceptable on an exam for a doctorate in physical chemistry. His position is that a scientist must present knowledge that conforms to the fundamental tenets of science. Moreover, he has expressed concern that should Mr. Hoberg be hired into a faculty position, he appears unwilling to separate his religious beliefs from science so that students would be given confusing, and scientifically erroneous information. The credibility of the program, the Department, and the University of Wyoming are at stake should Mr. Hoberg be allowed to claim doctoral-level knowledge of science in his future dealings with physicists, chemists, students, and the public.

7. Mr. Hoberg contends that the question left the door open for the answer he gave. Hoberg contends that academic freedom and the principles of religious liberty prohibit the department and institution from failing him for his religious beliefs. His position is that the department can only judge him according to his knowledge of science, and he has met that standard by Professor Leonard’s own admission.

Feel free to ask Professor Leonard and Mr. Hoberg any questions that you might have with respect to this case. I would note that the regulations of the University require that the Academic Appeal Board reach a unanimous decision with respect to the recommendation that will be issued to the President for further action. Please give this matter your most serious attention, as the implications for the institution are extraordinary.
Assessment and Evaluation

- Pre/Post analysis
- Observation, video, picture
- n=14 (pre)
- n=11 (post)
Results

- Positive increase in students’ self-assessment of research skills.
- Self-report data indicated a positive relationship was built between mentor and mentee.
- Indications that this REU program impacted students’ career trajectory in STEM disciplines.
Summer 2016
Year Two
Wyoming NASA Space Grant Community College REU:
Research Experience for Community College Undergraduates

• 8 students funded by NASA:
  • Physics
  • Mathematics
  • Civil Engineering
  • Pre-Veterinary Medicine
  • Mechanical Engineering
  • Astrophysics
  • Biology

• Larger cohort of 25 students
  • 10 students in Astronomy REU
  • 7 students in Chemistry
2017 Total Solar Eclipse: Ongoing Activities

- Citizen CATE Experiment telescope locations – Mike Pierce, CoPI – 2500 miles, 60 telescopes, 90 minutes of eclipse totality
- NASA Space Grant Balloon Launches (Glendo team is from AZ) – live streaming of eclipse video across the US from near space on NASA TV
2017 Solar Eclipse: Space Grant

• Developing common payload to be launched on balloons across the country
  – Stream live video on NASA TV
  – Can add additional payloads
  – Funding provided by Space Grant
2017 Solar Eclipse: Space Grant

• Casper Team – WY Space Cowboys
  – Megan Graham, UW Grad in Atmospheric Science, Girl Scouts

• Riverton Team – Central WY Moon Rustlers
  – Suki Smaglik, MS/HS teachers and students

• Glendo Team – Arizona ASCEND!
  – Connect Lorna and Roger Spears w/ AZ

• Balloon Workshop in Bozeman, MT: July 16-20
2017 Solar Eclipse: CATE Experiment

• *The Citizen Continental-America Telescopic Eclipse (CATE) Experiment*
  – Matthew Penn (PI), National Solar Observatory, Tucson, AZ
  – Mike Pierce, UW

• Summary:
  – Citizen science project aimed at high school and undergraduate students
  – Capture a continuous 90-min video of the eclipse by placing 90 telescopes along the path across the US
  – Reveals Sun’s outer corona
2017 Solar Eclipse: CATE Experiment

• Telescopes and cameras will be donated to participating school – 9 in Wyoming
  – Outreach activities before and follow-up activities after the eclipse are planned to give teachers guidance
2017 Solar Eclipse: Summer 2016 Teacher Workshop

• Provide K-12 teachers with activities to take back into the classroom for AY 16-17
• Provide info and training related to NASA projects
• Possible collaboration w/ state parks
• Dates TBD
2017 Solar Eclipse: Eclipse Education of Wyoming Initiative (EEWIN)

• Faculty Education Enhancement grant awarded to Dr. Andrew Young
  – Lunar Motion Exhibit at the Science Zone
  – Science and Engineering Heirloom Packages
    • Casper College faculty will distribute packages to elementary schools throughout Wyoming
2017 Solar Eclipse: LCCC Activities

• Telescope viewing w/ solar filters

• Binocular viewing w/ solar filters
2017 Solar Eclipse: Ideas

• Eclipse glasses with Space Grant logo/web address (could sell them)
• Eclipse STEM Saturday event for students and families
• Information tents on the day of the eclipse in Jackson, Riverton, Casper, and Torrington
  – 2 people to man each tent
  – Give away eclipse glasses, provide telescope access and activities
• Jackson – AMK Research Talks in Summer 2016 and 2017
  – Provide info to locals and tourists visiting Jackson/Yellowstone area
• Other ideas????
Scholarships, Internships, Fellowships, and Grants
Scholarships, Internships, Fellowships, and Grants

• Community College STEM Scholarships
  – 48 total awards
    • 28 women (58%)
    • CC – 13, CWC – 6, LCCC – 12, NWC – 3, NWCCD – 7
      WWCC – 7
Scholarships, Internships, Fellowships, and Grants

• CC Transfer Scholarships ($4,000)
  – DUE: May 27, 2016

• CC REU Summer Fellowships ($4,500 + room and board and travel)
  – 8 students – NASA
  – 7 students – CHEM
  – 5 women
  – EWC, LCCC, NWC, CC, ID, CO, CA
Scholarships, Internships, Fellowships, and Grants

• NASA Internships – Summer 2016 ($6,500)
  – 2 students at Johnson Space Center in Houston
    • Both women in engineering
  – 1 grad student at the Jet Propulsion Lab in CA
Scholarships, Internships, Fellowships, and Grants

• Engineering Senior Design Funding
  – NASA Robo-Ops Challenge
    • http://robo-ops.nianet.org/
    • https://www.youtube.com/watch?v=pma5Lrpjd7A&feature=youtu.be
  – E-Baja Team
Scholarships, Internships, Fellowships, and Grants

• Undergraduate Research Fellowships ($5,000)
  – 12 awards (6 women)

• Graduate Research Fellowships (PhD - $20,000; MS - $15,000 + tuition/fees/health ins)
  – 7.5 awards (3 women)
Scholarships, Internships, Fellowships, and Grants

• Faculty Research Initiation Grants ($20,000)
  – 5 awards (2 women)

• Faculty Education Enhancement Grants ($10,000)
  – 4 awards (2 women)
  – Casper College – 2 awards
  – Central Wyoming College – 2 awards
Scholarships, Internships, Fellowships, and Grants

- Travel grants for scientific conferences ($250)
  - 8 travel grants
New Things on the Horizon
NASA USIP: Inexpensive Microgravity Environment (IME) Project

- PI: Kevin Kilty
- Engineering Senior Design project
- $200,000 over 2 years
- 61 Space Grant proposals submitted – 39 selected including WY!
Grants Submitted

• NSF GRAD Training Grant: More than Just a Scientist
  – STEM outreach course for Grad students

• Ellbogen Foundation Grant
  – STEM outreach course for UG and Grad students

• NSF EPSCoR Track I EOD Grant: WYSTEM
  – EOD coordination, STEM outreach opportunities

• NSF INCLUDES Grant: Passports to STEAM – Building Viable Pathways for Underrepresented Minority Students
  – Provide Saturday STEAM Fairs and summer camps for underrepresented students
Future Grant Ideas

• Keck Foundation Grant
  – Summer: Undergraduate REU program
  – Fall: STEM outreach course for students in the REU
  – Spring: students would practice STEM outreach at events (Science Fair, Women in STEM, STEM Saturday, Campus STEM Tours)
  – Traveling STEM Mobile
Wyoming NASA Space Grant Website Redesign – Summer 2016

Coming Soon

WEBSITE UNDER CONSTRUCTION
Odds and Ends

• Travel reimbursements
  – Turn in food & hotel receipts
  – Mileage
  – Let us know if your contact info has changed
Odds and Ends

• Location for Fall 2016 Board Meeting
  – Any volunteers???

• What month is best?
  – September
  – October
Thank you for Coming!