2017-18 PPCC STEM EVENTS PLANNING

STEM DAY at the Space Foundation

Tentative Dates: Fri., Oct. 13 (1st choice) or Fri., Oct. 27

(POC) Gwen’s Tasks:
- Check with the Space Foundation about the date
- Gather needed internship information for promotion
- See if we can have a couple of virtual reality headsets set up

David’s Tasks:

Karen’s Tasks:
- Work with Susanne’s MGD class to create the poster
  - Building Connections: Opening Doors to STEM Careers and Internships
  - Discover/Explore/Learn
  - Space-themed background (could be engineering-related)
  - Change specific details, font color, perhaps font itself for each event
  - Contact information
- Create the brochures
- Collect orders for posters
- Oversee printing of posters & brochures

Phil’s Tasks:

Other’s Tasks:
- Organize refreshments
- Publicity through PPCC (Paper, tv monitors, Stall Street Journal

Joint Tasks:
- Work on list of student internship speakers

FALL STUDENT STEM TALKS (at RRC)

Date: Monday evening, Dec. 4

Included Activities:
- Student Presentations
- Jeopardy Game

(POC) Holly’s Tasks:

Gwen’s Tasks:
- Check with the Space Foundation about the date
- Gather needed internship information for promotion
- See if we can have a couple of virtual reality headsets set up

David’s Tasks:

Karen’s Tasks:
- Talk to Jen about organizing the Jeopardy game

Other’s Tasks:
- Organize refreshments

Joint Tasks:
- Recruit student speakers
2017-18 PPCC STEM EVENTS PLANNING

CHALLENGER LEARNING CENTER LAUNCHER DESIGN CONTEST
(POC) David’s Tasks:
- Check with Robert to get specifics
- Finalize calendar deadlines

OTHER STEM RELATED ACTIVITIES
Karen’s Tasks:
- Check on AMATYC Student Math League
- Look up information about CCCS grants (for Challenger Learning Center day)
Gwen’s Tasks:
- See if Ginger or Shawna (or Ivana) would oversee the Spring Student STEM Talks at CC

David’s Tasks:

CHALLENGER LEARNING CENTER
Tentative Date: Fri., Feb. 23
- Applications due 1/22
- Selection date 1/29
(POC) Gwen’s Tasks:
Needs: FUNDING (about $700)

SPACE SYMPOSIUM at the Broadmoor
Date: Thurs., April 19
(POC) Phil’s Tasks:
Gwen’s Tasks:
David’s Tasks:
Karen’s Tasks:
Other’s Tasks:
Joint Tasks:
- Divide students up into groups before the event

SPRING STUDENT STEM TALKS (at CC)
Date: Thursday evening, April 26
Included Activities:
- Student Presentations
- Jeopardy Game
(POC) Leader’s Tasks:
Gwen’s Tasks:
David’s Tasks:
Karen’s Tasks:
Other’s Tasks:
- Organize refreshments
Joint Tasks:
- Recruit student speakers
NASA Community College Aerospace Scholars program:  
https://nas.okstate.edu/ncas

STEM students who satisfy eligibility requirements may apply for the NCAS program. Students can attend a one-hour online presentation to learn more about project requirements and benefits (see website for further information). Selected students have the opportunity to attend an onsite workshop and obtain an authentic NASA experience. PPCC students have successfully participated in the NCAS program the past several years; two PPCC students were at the Stennis Space Center in Mississippi last spring semester and another student is heading to the Marshall Space Center in Huntsville, AL in late October.

<table>
<thead>
<tr>
<th></th>
<th>Spring/Summer 2019</th>
<th>Fall Session 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Opens</td>
<td>August 29, 2018</td>
<td>March 1, 2019</td>
</tr>
<tr>
<td>Application Deadline</td>
<td>October 17, 2018</td>
<td>June 1, 2019</td>
</tr>
<tr>
<td>Online Session</td>
<td>October 30 - December 6, 2018</td>
<td>August 2019</td>
</tr>
<tr>
<td>Onsite Workshop</td>
<td>February - April, June - July 2019</td>
<td>September or October</td>
</tr>
</tbody>
</table>

Research Experience for Community College Students at CU Boulder:  
http://cires.colorado.edu/outreach/RECCS

The Research Experience for Community College Students (RECCS) is a summer research internship program for Colorado community college students. The goal of RECCS is to give community college students an authentic research experience that allows them to explore environmental or geosciences and gain the confidence to transition to a four-year program in the STEM (Science Technology Engineering Math) disciplines. Ten students receive a weekly stipend of $500 a week to conduct field- or lab-based independent research over a nine-week period in the summer (June 3 - Aug 2) while working with a team of scientists.

<table>
<thead>
<tr>
<th>Application Deadline</th>
<th>Session</th>
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</thead>
<tbody>
<tr>
<td>February 1, 2019</td>
<td>June 3 - August 2, 2019</td>
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</tbody>
</table>
Community College Internships (CCI) program: [http://science.energy.gov/wdts/cci/](http://science.energy.gov/wdts/cci/)

STEM students who satisfy eligibility requirements may apply for the CCI program (see website for further information). Selected students participate in a paid 10-week internship program at one of 15 participating DOE (Department of Energy) laboratories, working on technologies or instrumentation projects or major research facilities supporting DOE’s mission, under the guidance of laboratory staff scientists or engineers. One PPCC student joined 84 community college students nationwide selected to participate in CCI programs last summer. She worked with three other CCI interns at the National Renewable Energy Laboratory in Golden, CO.

<table>
<thead>
<tr>
<th>Application Deadline</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 9, 2018</td>
<td>Spring 2019</td>
</tr>
<tr>
<td>Early January 2019</td>
<td>Summer 2019</td>
</tr>
</tbody>
</table>

Geo-Launchpad: [www.unavco.org/geolaunchpad](http://www.unavco.org/geolaunchpad)

If you have been successful in a geoscience class or other STEM classes, consider applying for Geo-Launchpad, an eight-week paid summer internship based in Boulder for up to 10 Colorado community college students. The internship runs June – July, 2019 and pays a stipend of $500 a week with housing provided in Boulder, if needed. You will have the opportunity to work with geoscientists under the umbrella of UNAVCO, the National Science Foundation geodetic facility, a non-profit university-governed consortium that facilitates geoscience research and education using geodesy.

<table>
<thead>
<tr>
<th>Application Opens</th>
<th>Application Deadline</th>
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</thead>
<tbody>
<tr>
<td>November 15, 2018</td>
<td>January 2019</td>
</tr>
</tbody>
</table>

REU Program in Solar and Space Physics: [http://lasp.colorado.edu/home/education/reu/](http://lasp.colorado.edu/home/education/reu/)

Motivated students interested in space sciences and engineering are encouraged to apply for a paid summer research internship in the fields of solar and space physics. The program offers research experience in a cutting edge STEM field, providing students with a real-life experience of what a career in research would be like. The internship runs June – July, 2019 and pays a stipend of $500 a week with housing and a food allowance. Application details will be made available soon.

For More Information About STEM Internship Opportunities Please Contact:

Carol Jonas-Morrison  F200, Centennial Campus  (719)502-3383, carol.jonas-morrison@ppcc.edu
David Lawton  W119, Rampart Range Campus  (719)502-3453, david.lawton@ppcc.edu
Karen Summerson  W119, Rampart Range Campus  (719)502-3603, karen.summerson@ppcc.edu
<table>
<thead>
<tr>
<th>Date</th>
<th>Task or Activity</th>
<th>Point Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov 30</td>
<td>Determine Date and campus</td>
<td>Dept Meeting</td>
</tr>
<tr>
<td></td>
<td>Create a committee and establish chair Committee: Shawna (P), Ivana (P), Jen, Ann, Carol, Pam, Ryan, JoAnne</td>
<td>Shawna &amp; Ivana</td>
</tr>
<tr>
<td></td>
<td>Reserve rooms: Main meeting room + 2 or three presentation rooms</td>
<td>Ivana/Cecilia</td>
</tr>
<tr>
<td></td>
<td>Find volunteer Keynote speaker (30-45 min) George Rus from UCCS</td>
<td>Jen</td>
</tr>
<tr>
<td></td>
<td>Gift to Speaker</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Funds: Chair Pam/Ryan</td>
<td></td>
</tr>
<tr>
<td>Oct 15</td>
<td>Create Flyer</td>
<td>Cecilia/Ivana/ Shawna</td>
</tr>
<tr>
<td></td>
<td>Create Poster/run student poster session</td>
<td>JoAnne</td>
</tr>
<tr>
<td>Nov 16</td>
<td>Determine Student Presentation summary deadline</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Invite students to present projects, offer extra credit project</td>
<td>All instructors in STEM path</td>
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<tr>
<td></td>
<td>Student Name + Topic, short abstract + Mentor</td>
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<tr>
<td></td>
<td>Food</td>
<td>Cecilia/Pam</td>
</tr>
<tr>
<td></td>
<td>Who should attend? Invite</td>
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<tr>
<td></td>
<td>STEM club</td>
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<td></td>
<td>Robotics club</td>
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<td></td>
<td>Leadership, Math Liaison advisor, Concurrent enrollment instructors</td>
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<td></td>
<td>Invite students with prior internship experience to present</td>
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<tr>
<td></td>
<td>Jeopardy</td>
<td>Jen</td>
</tr>
<tr>
<td></td>
<td>Program</td>
<td></td>
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<tr>
<td>Nov 16</td>
<td>Keynote BIO + ABSTRACT</td>
<td>Jen</td>
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<tr>
<td></td>
<td>Student Clubs</td>
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<td></td>
<td>Internees</td>
<td></td>
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<tr>
<td></td>
<td>Faculty to advertise internship opportunities</td>
<td>David</td>
</tr>
<tr>
<td></td>
<td>Student presenters</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Faculty with information on # of internships and scholarships</td>
<td>David</td>
</tr>
<tr>
<td></td>
<td>Poster Session</td>
<td>JoAnne</td>
</tr>
<tr>
<td></td>
<td>Publicity/Marketing</td>
<td>Carol: Dawn Souza + Karen Kovaly</td>
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<tr>
<td></td>
<td>Flyer</td>
<td></td>
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<td></td>
<td>Stall Street Journal</td>
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<td></td>
<td>Club advisor</td>
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<tr>
<td></td>
<td>Mathematics Website</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Paper</td>
<td></td>
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<tr>
<td>Nov 30</td>
<td>Room Cleanup</td>
<td>All</td>
</tr>
</tbody>
</table>
Certificate of Appreciation

Presented to

Thank you for your outstanding Presentation at the Fall 2017 Mathematics Colloquium

I. Love Math
Professor of Mathematics

Date
Agenda

11:30 - 12:00 GATHERING

12:00 - 12:05 WELCOME
   Dr. Philip Anderson
   Associate Dean
   Division of Mathematics & English

12:05 - 12:35 KEYNOTE ADDRESS
   Dr. Wojciech Kossek
   University of Colorado Colorado Springs

Interested in Working on the Twin Prime Conjecture?

Part of the appeal of Number Theory is that statements about integers are frequently easy to formulate and explain to students of all levels. Yet, some famous theorems take centuries to prove and several conjectures remain open, even with some substantial awards offered for their proofs. Significant progress was made in the last few years in the case of the Twin Prime Conjecture. Specifically, some very promising facts have been established regarding gaps between consecutive primes. An overview of some of the most impressive recent developments in number theory will be discussed, including theorems of Wiles, Green-Tao, Zhang, and Maynard.

This talk is accessible to anyone with an interest in mathematics and no background in number theory is expected of the audience.

12:35 - 12:45 DemoSAT

12:45 - 3:00 STUDENT PRESENTATIONS

3:00 - 3:20 JEOPARDY

3:20 - 3:30 WRAP UP

Keynote Speaker

Wojciech Kossek currently teaches mathematics at UCCS. He has a Ph.D. in mathematics and a master's degree in electrical engineering. His mathematical interests lie primarily in topological and measure-theoretical dynamics, combinatorial number theory, and real analysis. He is passionate about education and his teaching philosophy can be summarized in a subtitle of his short calculus book: Calculus for the Forgetful: How to understand more and memorize less. Recently, his research interests have been directed at applications of mathematics to battery management systems with the goal of maximizing battery life and performance.

Wojciech Kossek moved to Colorado Springs in 2004 and he and his family enjoy living here.

Prime Number Theorem

\[
\lim_{x \to \infty} \frac{\pi(x)}{x / \ln(x)} = 1
\]
Student Presentations

W-101

Anna Christiansen, “Radiation and Plants in Space”
Derek Eskeldson, “Syntax of Creation”
David Michon, “Brachistochrone Curve”
Caitlin Randall, “Madness and Brilliance”
Eugene Hamzeyadeh, “Mechanical Engineering and Calculus”
Kelly Taylor, “Work”
Jonathan Ramirez, “Continued Fractions”
Max McGrath, “There, There, There, and Back Again”
Marco Morales, “Euler’s Most Famous Equation”
Zorahh Shirley & Nathan Flannery: “A Brief History of Euler and Three of his Equations”

Student Presentations

W-102

Karah Han, “The Snow Plow”
Porter Moody, Chad Bowman, & Luke Larson, “Complex Numbers and Trigonometry”
Natalie Dils, “Evaporation”
Glenn Jones, “The Riccati Equation”
Jaxon McNeil, “Calc I or Summation”
Robert Whitley & Brittany Arnold, “2D Rotations”
Thomas Malechek & Joshua Stuth, “History of Linear Algebra”
David McGraw & Ronald Sparkman, “Rocket Thrust Requirements”
Brandi Orcutt, “Calculus Cards”
Bryce Vieth, “Law of Sines”
Caleb Maftei, NASA NCAS Internship

Internship Information

Caleb Maftei, NASA NCAS Internship
Anna Christiansen, DemoSAT
Rob Gilchrist & Liz Coelho, DemoSAT
Alondra Hauser, Robert Clayton, Ryan Klimek, & Nathan Leusink, DemoSAT
Internship Opportunities

NASA (NCAS) National Community College Aerospace Scholars
Opportunities just for college students
Must be a high school grad and at least 18 years old
Concurrent enrollment in or completion of 9 or more STEM hours
US citizen
Part 1 is a 5 week online course (Oct 30-Dec. 6)
Part 2 (for the “top” online students) is 5 days onsite at a NASA location (Feb. – April)
Applications open 8/29 for the next session and closes Oct. 17
https://nas.okstate.edu/ncas/apply/

Palace Acquire
Air Force Civilian Servic
https://www.afciviliancareers.com/students.php

ULA Internships post the Tues. after Labor Day (including local ones)
Closes REALLY quickly - must be ready to submit right away
Spend June - Aug. preparing to submit
Need to be a sophomore
https://www.ulalaunch.com/careers/internships

Ball Aerospace Internships
Summer
Jr. or Sr.
http://www.ball.com/aerospace/about-ball-aerospace/careers/college-internships

SSL Maxar
Lots of opportunities
2 yrs of college
Summer

FFRDC
Research opportunities
FFRDC - 18 locations around the country
https://www.mitre.org/careers/student-programs

RECCS (Research Experience for Community College Students)
9 weeks long
Application for summer 2019 opens November 2018
http://www.cires.colorado.edu

For any questions please contact Alondra Hauser or Bryce Vieth at ppcstemclub@gmail.com
For more information about STEM Internship Opportunities please contact

Carol Jonas-Morrison, F200, Centennial Campus
(719)502-3383
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david.lawton@ppcc.edu

Karen Summerson  W119, Rampart Range Campus
(719)502-3603
karen.summerson@ppcc.edu

Special thanks

The Space Foundation

Susanne Arens, PPCC MGD Instructor

Kimberly Fitch
(PPCC graphic arts student) for poster design
9:00—9:30 INTRODUCTION AND KEYNOTE ADDRESS
Emcee:  Karen Summerson, PPCC
Phil Anderson, PPCC
Bryan DeBates, Space Foundation Vice President—Education

So you want to work in the space industry?

9:30—10:00  INTERNSHIP OPPORTUNITIES
David Lawton, PPCC

NASA NCAS program, Joseph Day
Research Experience for Community College Students at
CU Boulder, TBD
COSGC/DemoSat, Nathan Leusink
What UCCS offers STEM Students, Sean Swallen, uCCS

10—10:15 BREAK (SNACKS/TOUR/ORIGAMI)

♦ SCIENCE ON A SPHERE
♦ DESIGN CHALLENGE

11:35—11:45 BREAK (SNACKS/TOUR/ORIGAMI)

11:45—12:00 VOLUNTEER OPPORTUNITIES, UCCS, and CLOSING REMARKS
Jennifer Walters, Space Foundation
Bryan DeBates, Space Foundation
David Lawton, PPCC

INTERNERNSHIP OPPORTUNITIES
Mathematics Department  Spring 2018

NASA Community College Aerospace Scholars program:
https://nas.okstate.edu/ncas

STEM students who satisfy eligibility requirements may apply for the NCAS program. Students can attend a one-hour online presentation to learn more about project requirements and benefits [see website for further information]. Selected students will have the opportunity to attend a four-day onsite workshop and obtain an authentic NASA experience. PPCC students have successfully participated in the NCAS program the past several years; two PPCC students were at the Stennis Space Center in Mississippi last spring semester and another student is heading to the Marshall Space Center in Huntsville, AL in late October.

Application Opens:  August 29, 2018
Application Deadline:  October 17, 2018 for Winter 18/Spring 19 Session
Online Session:  Oct. – Dec., 2018
Student Selections:  January 2019
Onsite Workshops:  February—April 2019

Research Experience for Community College Students at CU Boulder:
http://cires.colorado.edu/outreach/RECCCS

The Research Experience for Community College Students (RECCS) is a summer research internship program for Colorado community college students. The goal of RECCS is to give community college students an authentic research experience that allows them to explore environmental or geosciences and gain the confidence to transition to a four-year program in the STEM (Science Technology Engineering Math) disciplines. Ten students receive a weekly stipend of $500 a week to conduct field- or lab-based independent research over a nine-week period in the summer (June 3 - Aug 2) while working with a team of scientists.

Application Deadline:  February 1, 2019
Session Dates:  June 3 - August 2, 2019

Community College Internships (CCI) program:
http://science.energy.gov/wdts/cci/

STEM students who satisfy eligibility requirements may apply for the CCI program [see website for further information]. Selected students participate in a paid 10-week internship program at one of 15 participating DOE (Department of Energy) laboratories, working on technologies or instrumentation projects or major research facilities supporting DOE’s mission, under the guidance of laboratory staff scientists or engineers. One PPCC student joined 84 community college students nationwide selected to participate in CCI programs last summer. She worked with three other CCI interns at the National Renewable Energy Laboratory in Golden, CO.

Application Deadlines:  Early January 2019 for Summer 2019 Session
<table>
<thead>
<tr>
<th>DATE</th>
<th>STEMinar</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Friday Jan. 26</strong></td>
<td><strong>Focus on Chemistry</strong>&lt;br&gt;Dr. Kristin Rowan&lt;br&gt;Dr. Evy Garcia&lt;br&gt;Dr. Trini Garza</td>
<td>Club meeting</td>
</tr>
<tr>
<td><strong>Thursday Feb. 1</strong></td>
<td><strong>Girls STEM Day</strong>&lt;br&gt;UCCS</td>
<td>Field Trip</td>
</tr>
<tr>
<td><strong>Friday Feb. 9</strong></td>
<td><strong>Focus on Computer Science</strong>&lt;br&gt;Dr. David Skinner&lt;br&gt;Carly Scherrer</td>
<td>Club meeting&lt;br&gt;Club meeting&lt;br&gt;Career Series:&lt;br&gt;Resume Workshop&lt;br&gt;Patricia Padeway&lt;br&gt;HR Specialist</td>
</tr>
<tr>
<td><strong>Sat Feb. 24</strong></td>
<td><strong>PPRUMC</strong>&lt;br&gt;UCCS</td>
<td>Field Trip&lt;br&gt;Field Trip&lt;br&gt;Math Conference&lt;br&gt;<a href="https://www.uccs.edu/pprumc/">https://www.uccs.edu/pprumc/</a></td>
</tr>
<tr>
<td><strong>Friday March 9</strong></td>
<td><strong>Focus on Technology</strong>&lt;br&gt;Robotics Club&lt;br&gt;Kent Winchell</td>
<td>Career Series:&lt;br&gt;Elevator Pitch, Networking, and Cover Letter&lt;br&gt;Kristi Callahan&lt;br&gt;Associate Dean CHTS</td>
</tr>
<tr>
<td><strong>Friday April 6</strong></td>
<td><strong>Focus on ?</strong></td>
<td>Career Series:&lt;br&gt;How to Dress for an Interview, First Impressions, How to ask crucial/good questions&lt;br&gt;Dr. Phil Anderson</td>
</tr>
<tr>
<td><strong>Thursday April 19</strong></td>
<td><strong>Space Symposium</strong>&lt;br&gt;Broadmoor Hotel</td>
<td>Field Trip&lt;br&gt;Field Trip&lt;br&gt;Volunteer opportunity April 15-19&lt;br&gt;www.spacesymposium.org/about/volunteer-opportunities</td>
</tr>
<tr>
<td><strong>Friday April 27</strong></td>
<td><strong>Mathematics Colloquium</strong></td>
<td>Rampart Range Campus</td>
</tr>
</tbody>
</table>

*Tentative Calendar, subject to change*