Attracting Students into Science: Insights from a Summer Student Research Program for Community College Students in Colorado

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The Program

The Research Experience for Community College Students in Critical Zone Science (RECCS) brings 10 community college students from across Colorado to spend 9-weeks at CU conducting research with science mentors. They also receive extensive training and support from the RECCS staff and collaborators. Mentors have come from CIRES, the Boulder Creek Critical Zone Observatory (BoCZO), NOAA and USGS. This program is funded by the NSF Research Experience for Undergraduates Program (REU).

Week 1
• Orientation and cohort building
• Meet & greet with mentors and student researchers
• Science communication workshop kickoff
• Thinking like a scientist training
• Overnight at Mountain Research Station with team-building exercises, note-taking in the field training and field trips led by RECCS scientists

Weeks 2 – 8
• Students work with mentors on research project
• Skills training one morning per week
  - Check-in with program manager
  - Science communication workshop
  - Brown bag lunch with science professional
  - Responsible conduct of research curriculum, required by NSF

Week 9
• Prepare for presentations
• Thursday – poster session hosted by UCAR for Boulder REU programs
• Friday – short AGU-style presentations in CIRES Auditorium

Evaluation

Typically REU programs target promising juniors and seniors on the graduate school tract. Last year was the first time a call went out by NSF to target community college students. Consequently, there is not a rich dataset on the outcomes of such programs for these students. We are conducting extensive evaluation to document the outcomes of participation and will share with the scientific community through publications.

Key Outcomes
• Students became more articulate and differentiated about their views on the Nature of Science. “This project has taught me more about science than I could ever learn in the classroom. It’s not the ‘cookbook’ style that I am used to...Reality is a lot different than what you planned...a very long process!”
• Students had a significantly higher mean Grit Score than those of other student populations from West Point and Ivy League schools. Grit is the tendency to sustain interest in and effort toward long-term goals.
• Students felt inspired to pursue a career in science and better prepared for and confident in an academic career. “The program helped me to see a big picture of my career. I have a lot more options than I thought. It made me realize that I have ability to do more.”

Impacts post-RECCS

• Students have presented at local and national conferences, such as AGU, GSA, Fire Ecology and Management Congress and Colorado & Wyoming Academy of Science.
• Five students have continued on in their mentor’s lab conducting research either during the school year or the following summer.
• A majority have successfully matriculated to a 4-year institution, many with plans to attend grad school.
• One co-authored paper submitted to a peer reviewed journal.

Why research experiences for community college students?
Community college students don’t have access to rich research experiences. We are providing this opportunity so they can explore the geosciences and gain confidence to transition to a 4-year program in STEM.

We Need You! Help Us Make a Difference

There are plenty of ways that you can participate in the RECCS Program:
• Mentor a student for the summer
• Talk with students about your career path & research at a brown bag lunch
• Serve as a science judge at the poser presentation
• Attend the oral presentations
• Request a supplement to your NSF grant to provide support for an additional RECCS student. Help us grow each cohort!

Questions?
Contact somebody from the RECCS Team:
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http://cires.colorado.edu/outreach/RECCS