ABSTRACT
Community colleges are ideally placed to provide STEM career access to a diverse population and increase transfers to four-year programs. Red Rocks Community College (RRCC) has built a robust transfer pathway through diligent development of articulation agreements, course alignments and recruiting. Geoscience at RRCC is part of an interdisciplinary science department, which offers many opportunities for unique programs and partnerships. Through our NSF IUSE grant: Empowering the Invisible Minority: Engaging the Low-Income/First Generation Student in STEM, we have been focusing on retention and transfer of our diverse student population. RRCC has developed a multi-pronged effort to address this, including developing a student STEM Scholar Program (SSP), student mentoring, faculty cultural competency training, and increasing access to undergraduate student research and internships.

The SSP is for low-income or first generation college students interested in STEM and looking to transfer to a four-year school. The student program provides community building, mentoring, training, and opportunity through career workshops, research projects, outreach activities, and competitive internship positions. STEM Summer Scholars Research Program is a paid internship for RRCC students, placing them in research projects on either the Colorado School of Mines or CU-Boulder or RRCC campus. With successful summer internships in 2015 and 2016, we are looking to expand the research program to include experiential learning field classes; and climate, atmospheric and aerospace related internships. Students are also encouraged to present their research in a professional setting. There are challenges to designing programs for community colleges that we have tried to address, such as transfer credit limits, a commuter student body, and differential preparation of the students for college. Mentoring, clear pathways and strong partnerships with four-year programs are crucial for the success of our STEM students.

Red Rocks Community College has a history of commitment to the national challenge of creating and sustaining a diverse STEM workforce. The science department has led the effort in developing more opportunities for students to engage with research, design and innovation. We have enhanced our introductory course offerings. The STEM Scholar Summer Internship Program gives students further opportunity for mentorship and scholarship.

STEM at RRCC
- Active learning in the classroom
- Research and design projects
- Transfer Pathways
- STEM Clubs
- NASA Space Grant Projects
- IDEA Lab

Students presenting their work at conferences and research fairs and working on their projects in the IDEA Lab

Development of the STEM Scholars Program at Red Rocks Community College: Finding Ways to Help Students Succeed
Barbara Maher Sobhani and Liz Cox, Red Rocks Community College, Lakewood, CO
barbara.sobhani@rrcc.edu

Program Transformation
A College-wide Focus on STEM and Sustainability
Red Rocks Community College has a history of commitment to the national challenge of creating and sustaining a green workforce and increasing access and retention in STEM and have created a campus-wide focus on STEM and sustainability. The science department has led the effort in developing more sustainability-focused course offerings. We have a robust science program at RRCC and have recently started the STEM Scholars program to encourage and support a more diverse student population to persist in STEM. Offering a wide array of interdisciplinary science courses at an introductory level encourages students to follow their interests and become involved in active problem solving.

As educators we know that no matter where our students go after they attend college, the issues of Energy, Environmental Stewardship, and Renewable Resources will face them. We realize these issues will affect how productive they can be on the job or at home. Therefore, we have made the commitment to teach these issues specifically in general education science and physics classes as well as across the curriculum. We developed many new courses that specifically address these issues and engage students.

STEM Scholars Program
The STEM Scholars Program (SSP) supports students who are either low-income and/or first-generation students. Students are selected to complete a campus-wide, year-long experience. Students work through research, design and innovation projects. The students are mentored by faculty, industry and community leaders.

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Project Based Learning: Passive Solar Home Construction and Testing
In Integrated Science (SCI 155), the design challenge is to build a model passive solar home that can warm up to a comfortable temperature and then retain that heat once out of the sun for a specified period of time. The students can incorporate multiple methods of passive heating. They have to provide their testing data and analysis. The teams present their projects in class and demonstrate the model solar home. Embedded in the project are lessons about renewable energy and solar technology.

Emphasis on Innovation, Research and Design
The IDEA Lab offers:
- Real projects in partnership with business, industry and community organizations
- Workshop for students
- Mentoring for technical projects
- Collaboration space

Follow Us at: The IDEA Lab
http://www.facebook.com/rrccidealab

Summer Research Experience Opportunities
The STEM Scholars Program at Red Rocks Community College has developed a competitive Summer Internship Research Program for the current STEM Scholars. Visit our website: http://www.rrcc.edu/stem/scholars
Program Admission Requirements:
- Enrolled in the Spring and Summer semesters
- Minimum GPA of 2.7
- Completed at least one STEM course
- Demonstrated involvement in STEM at RRCC
- IDEA class or Engineering or other STEM club
- IDEA lab
- NASA Space Grant
- STEM outreach
Program Completion Requirements:
- Complete 8 week, full time research commitment
- Present the project in a professional setting
- Produce a short video about their project
- Produce a professional poster

Diversity Trends in Education and STEM
Community College Enrollment National
- Diversity at RRCC

Gender in STEM Scholars Research Experience Program
Graduate 2015
- Graduate 2016

Gender in STEM Scholars Research Experience Program
Graduate 2015
- Graduate 2016