



Campus as Conservation Classroom

Barbra Sobhani & Janet Stomberg
Red Rocks Community College

Barbra.Sobhani@rrcc.edu

Janet.stomberg@rrcc.edu



Barbra Sobhani (she/her)

LSAMP Co-PI, Honors Director, CO Space Grant

Affiliate Director, RRCC Faculty

***MA Biology, MS Geophysics and Seismology, BS
Physics***



Janet Stomberg (she/her)

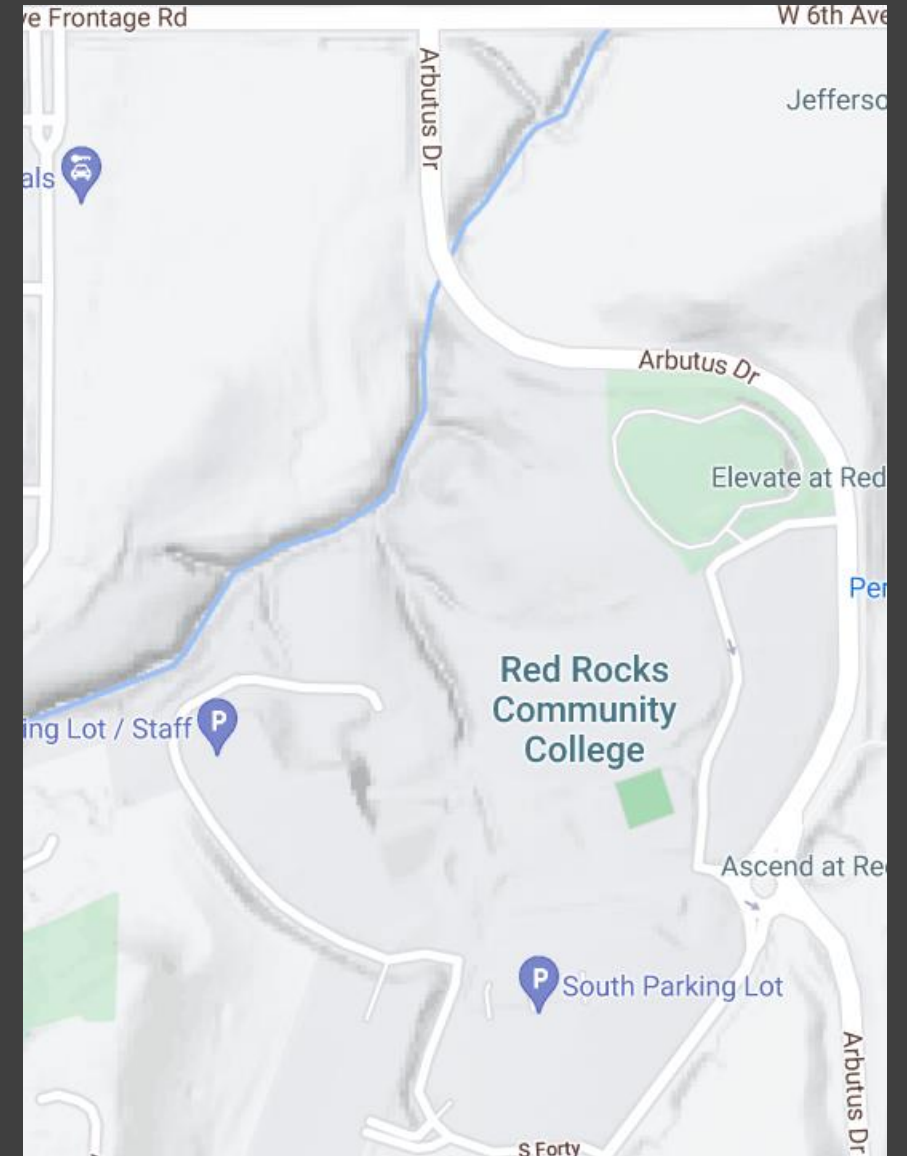
Metro Denver STEM Alliance Asst. Director

LSAMP Navigator, Inclusion and Diversity

M.S. Biology, Sci. Ed., GIS., B.S. Anthropology



RED ROCKS
COMMUNITY COLLEGE



Located in Lakewood, Colorado

Trefny Honors Vision

*Developing Student Leaders
through STEM*

*Promoting Equity and Access in
Honors education*

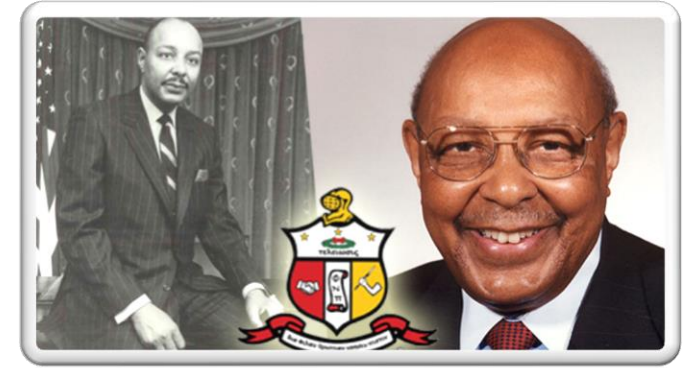
*Providing exceptional opportunities
for learning and development for
our exceptional students*



<https://www.rrcc.edu/honors>

2 yr cohort program
HNR courses
Scholarship
Advising

Metro Denver STEM Alliance LSAMP



- 175-200 Scholars in Denver
- Navigators share events, jobs, opportunities across Denver/Colorado- CO-WY AMP



Our scholars are a network of students at community colleges across metro Denver!

RRCC STEM Student Data

Enrollment

Academic Year	Total STEM Enrollment	URM STEM Enrollment	% URM		
			Hispanic	African-American	Native American
2019-20	2050	458	19.9%	1.6%	0.8%

Last year URM Students made up **23%** of STEM Enrollment.

Addressing Equity Issues

<http://cue.usc.edu/research/colorado-equity-in-excellence/>

Our campus has goals that are explicitly stated by race and ethnicity to improve retention, graduation, and STEM participation

Support for programs like L-SAMP, Trefny Honors and TRIO

Supporting high impact practices to improve learning outcomes for under-represented groups in STEM

Focus on place-based learning opportunities

Figure 1.1

Average Boost to Students' Perceptions of Their Deep Learning and Gains by Participation in Specific High-Impact Practices

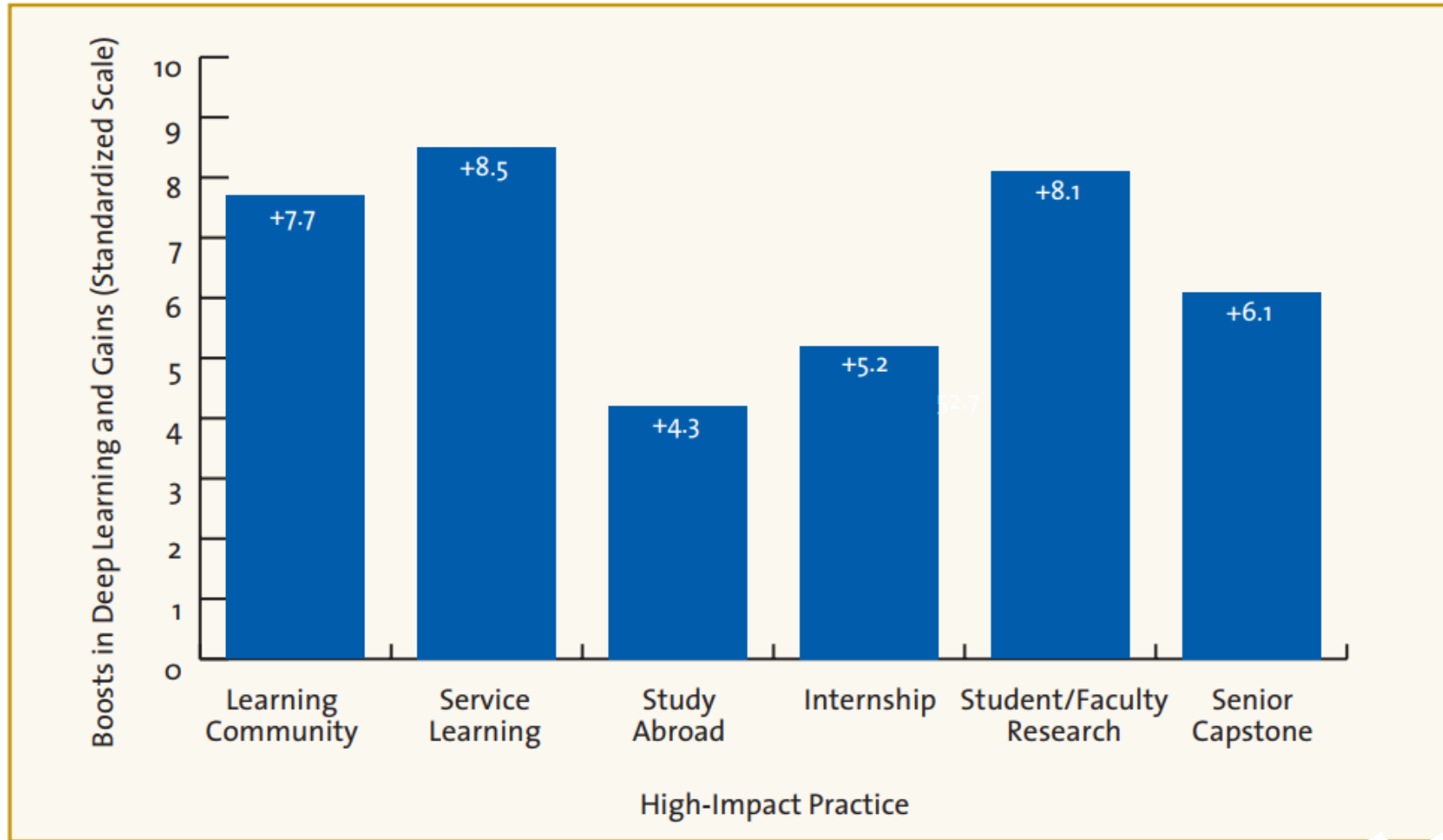
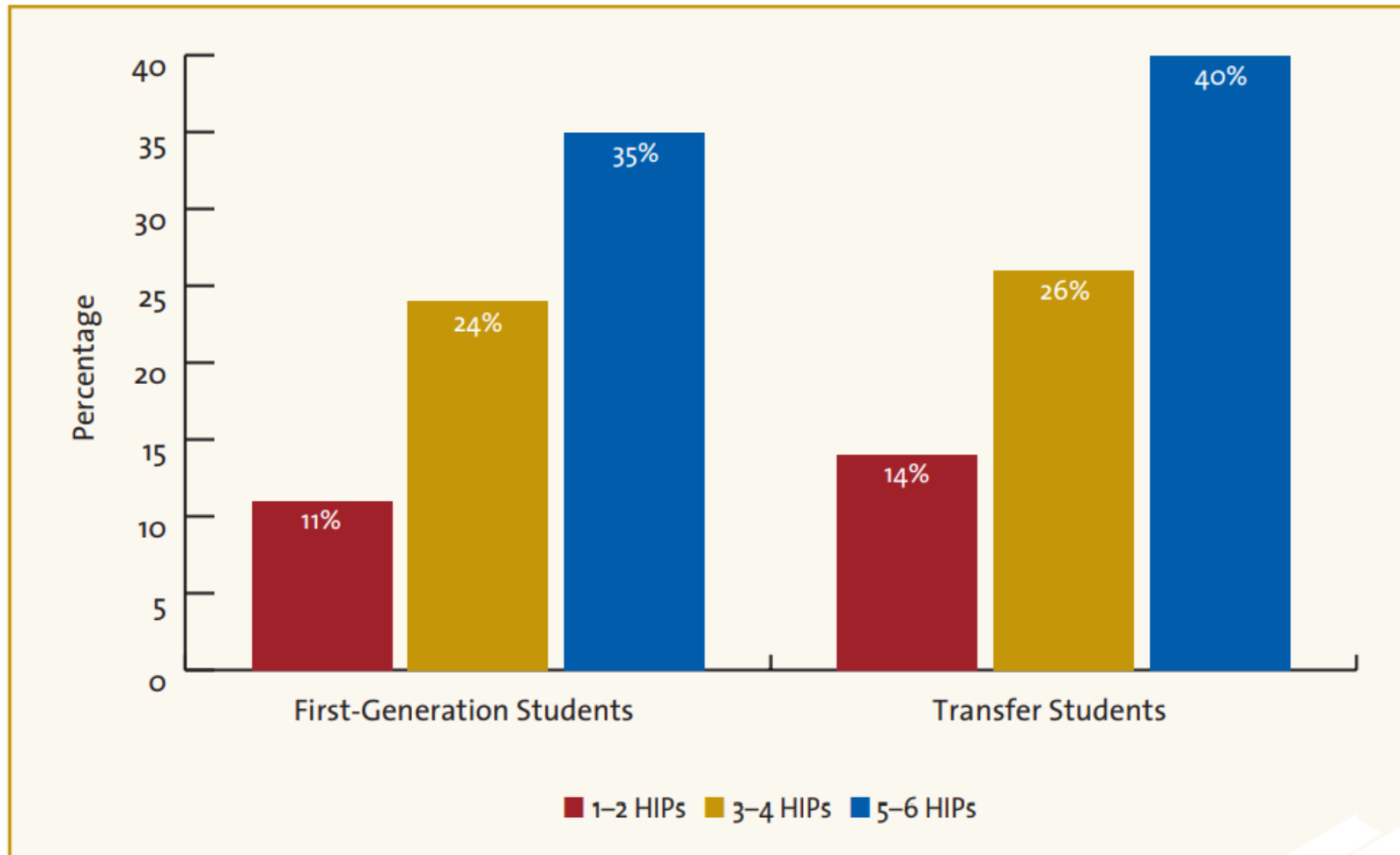


Figure 1.4

**Within-Group Comparisons for First-Generation and Transfer Students:
Average Boost in Deep Learning Experiences and Self-Reported Gains with
Multiple High-Impact Practices (HIPs) vs. No Participation**



Honors Wicked Problem: Climate Change Now

- Interdisciplinary problem that has local, regional and global impact.
- Climate issues are infused in scientific, social, political and economic contexts.



Program Infusion

Honors classes



```
graph TD; A[Honors classes] --> B[Campus Action Projects]; B --> C[Service Learning]; C --> D[Creative Problem Solving & Leadership Skill];
```

Campus Action Projects

Service Learning

Creative Problem Solving & Leadership Skill

Energy, space, and Earth's effective temperature

Unit 1 of Earth's Thermostat
InTeGrate Module

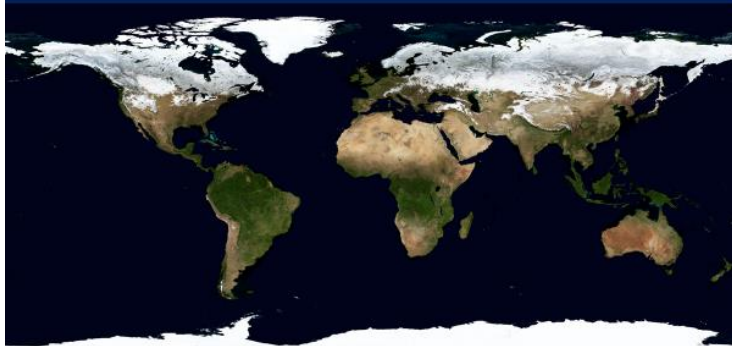


Image: January 2004 Blue Marble Composite – Reto Stöckli, NASA Earth Observatory



The Changing Biosphere: Lessons from the Past

Unit 1: Introduction to the Geologic
Timeline & Mass Extinctions

Rebecca Teed (Wright State University)



This work is supported by a National Science Foundation (NSF) collaboration between the Directorates for Education and Human Resources (EHR) and Geosciences (GEO) under grant DUE - 1125331



WHAT CAUSES SEA LEVEL TO CHANGE?

Unit 2: Part 1



This work is supported by the National Science Foundation's Transforming Undergraduate Education in STEM program within the Directorate for Education and Human Resources (DUE-1245025).

Carbon, Climate, & Energy Resources

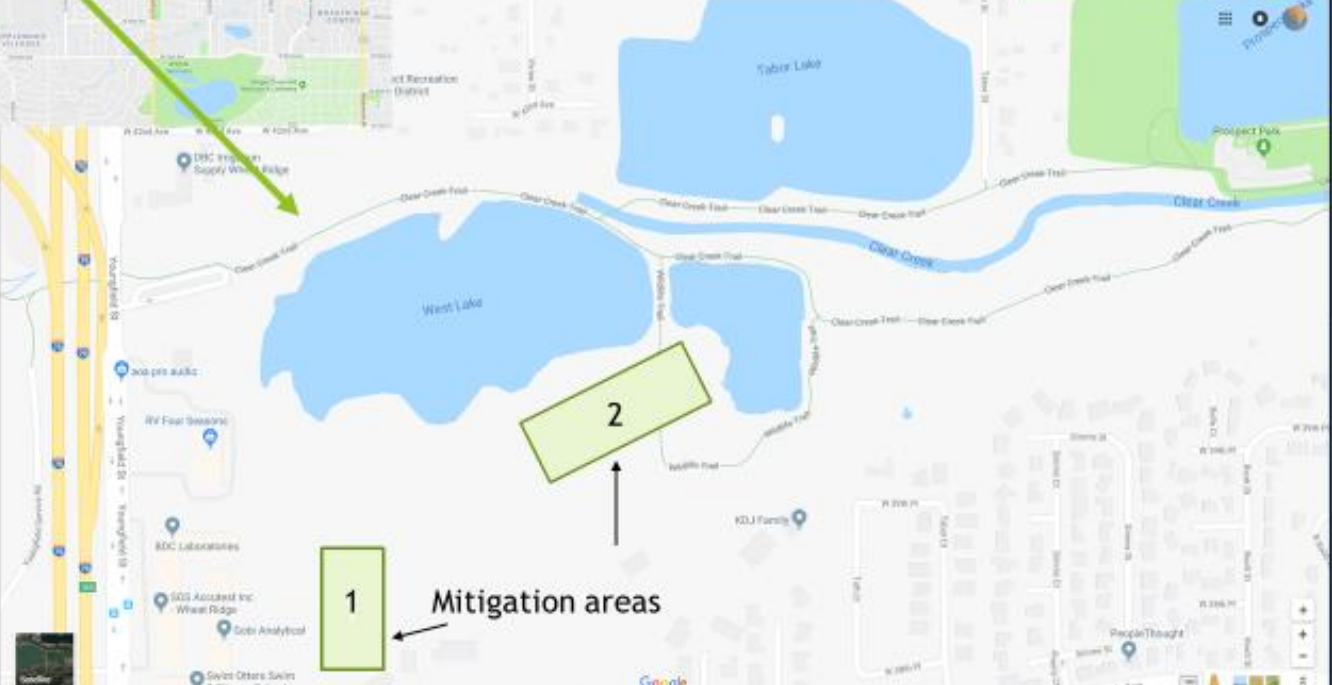


Unit 1

*Identifying Misconceptions &
Logical Fallacies*

Build honors course content using InTeGrate and
GETSI materials

Our teaching field site



Teasel and invasive species mapping and restoration project



ROADS WATER-SMART GARDEN

World of Water-Smart Plants

A beautiful, drought-tolerant garden combines native plants with many others suited to Denver's climate. You are looking at plants from semi-arid regions in Mexico, South America, South Africa, the Mediterranean and deserts of Central Asia—climates very similar to our own.

Gardening in Colorado—Less is More

Mountain gardeners face a unique array of challenges:

- Short growing season
- Annual precipitation of 15" or less
- Dramatic yearly fluctuation of temperature extremes
- Hard clay or sandy soil

Stunning plants thrive in these conditions. By choosing plants adapted to abundant sunshine and little water, you can enjoy a low-maintenance, beautiful garden all year.

Water-Smart Gardening® Techniques

It is a fact of life in the West. Save water and money with these tips:

- Group plants with similar needs and use water-efficient irrigation
- Consider your garden's microclimates and drainage patterns
- Use plants adapted to a semi-arid climate
- Use mulch to suppress weeds and conserve moisture



Many drought-tolerant plants do well when planted in containers. Potted vessels make beautiful and artistic additions to gardens and patios of any size.



Our Water-Smart Garden exhibit is in a Western style, combining drought-tolerant plants and cacti with grasses, perennials and annuals. Its constantly changing colors, textures and shapes are beautiful and structure year-round.

Pollinator Pathways: Garden, greenhouse and compost project



Camera traps and data processing project

Red Rocks Community College

- Legend**
- Conceptual Trail Alignments 1.93 miles total
 - Existing Existing Gravel Trail Alignment 0.32 miles total
 - Existing Sidewalk-Concrete Trail Alignment 4.24 miles total
 - Park

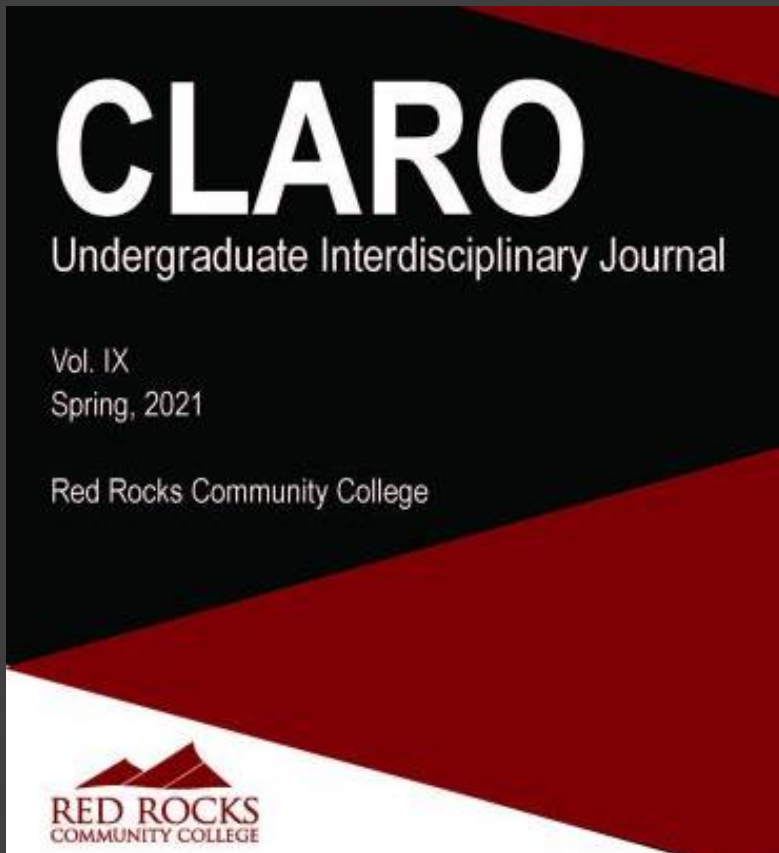


Sixth Avenue West Townhomes Interpretive Trail Project Union Square



Student Opportunities

- Service learning
- Community Engaged learning
- Undergraduate research
- Professional presentations



Trefny Honors Earth Week

[Home](#) [Drop in the Bucket](#) [Climate Action](#) [Move Me](#) [Rewilding](#) [Nurture Nature](#) [About](#)

Student art submissions for 2021. Please visit the About page to learn more about the program

Banner image on each page provided by MGD 121 Spring 2021.

Copyright ©MGD 141 Spring 2021

URE STEP Program (MDSA) Summer 2021



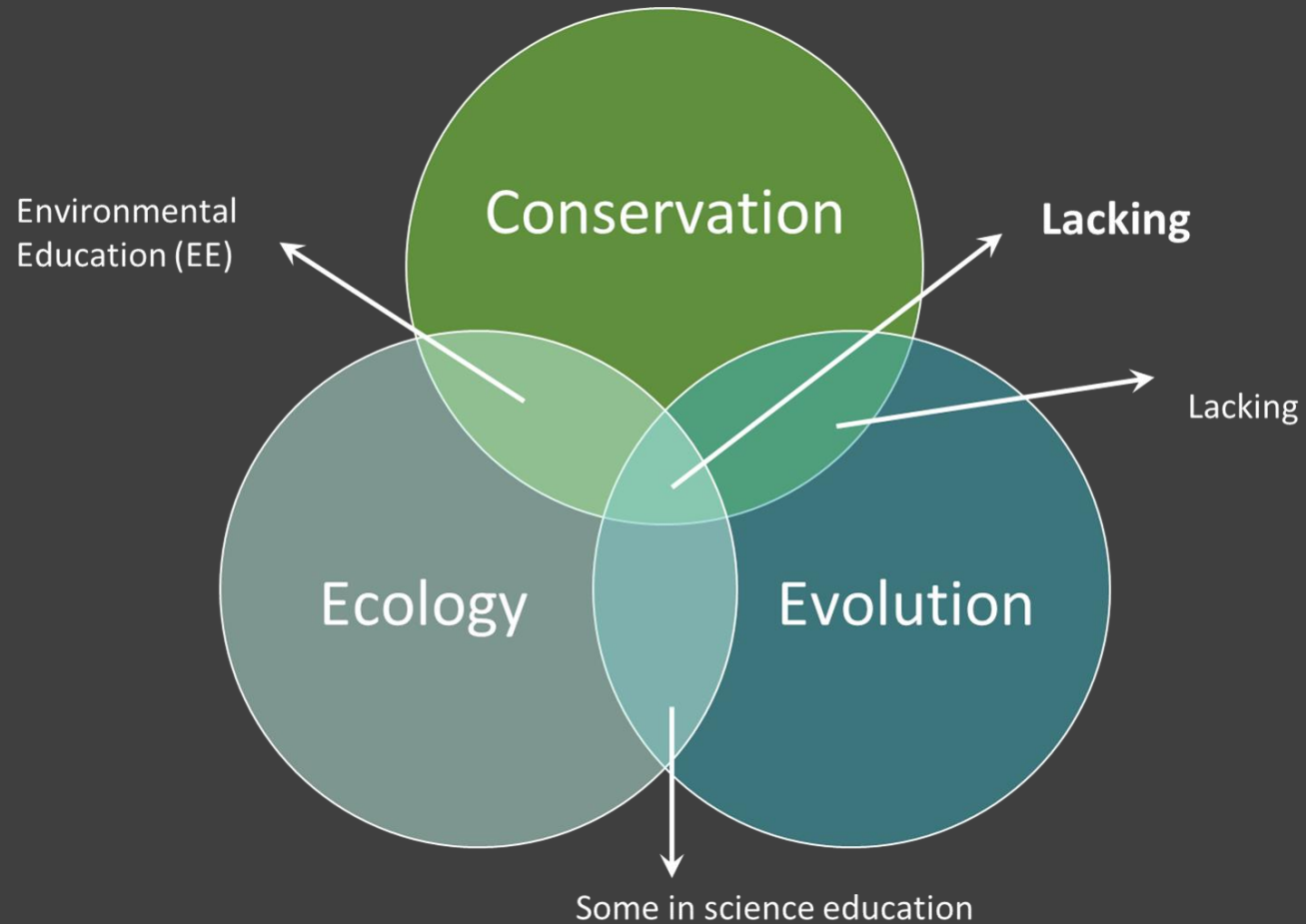
- Students engage in new Non-experimental track of URE program
- Round Tables, Seminar Chats, Workshops
- Build confidence, STEM field exploration, community focus
- Lightning Talks at end (6weeks), survey



LSAMP URE
at Red Rocks
Community College
*Interdisciplinary
Study*



Urad Lake- Empire, CO



Habitat Suitability
great lens to
explore
intersection of
concepts in theory
and in practice.

LSAMP URE

at Red Rocks Community College

Interdisciplinary Study

Observational
data
collection-
groups

Workshops,
Lit. Research

Compilation /
Data
collection

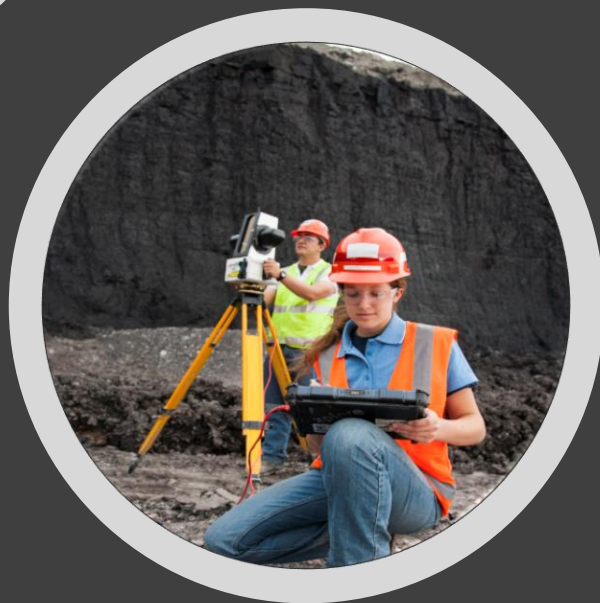




LSAMP RRCC- URE

Interdisciplinary Study

- Students from various majors engage together, each collecting subsets of data – gain exposure to multiple fields while focusing on their own topics/data
- Field time and lab time on campus
- 2 semesters – Fall 2021, Spring 2022 – *flexible*





Thank you!

