RECCS Connects

Research Experiences for Community College Students

August 2022

RECCS is a summer student research program for Colorado community college students funded by the National Science Foundation and coordinated by CIRES Education Outreach, Niwot Ridge LTER and INSTAAR.

Welcome to the new monthly RECCS newsletter where you will find helpful academic and career tips, and a selection of current internships, entry-level job openings, and graduate positions. ***This month's topic offers a look at how 2022 RECCS Summer Program wrapped up! We have been sharing student projects throughout the summer in each issue.***

2022 RECCS Cohort

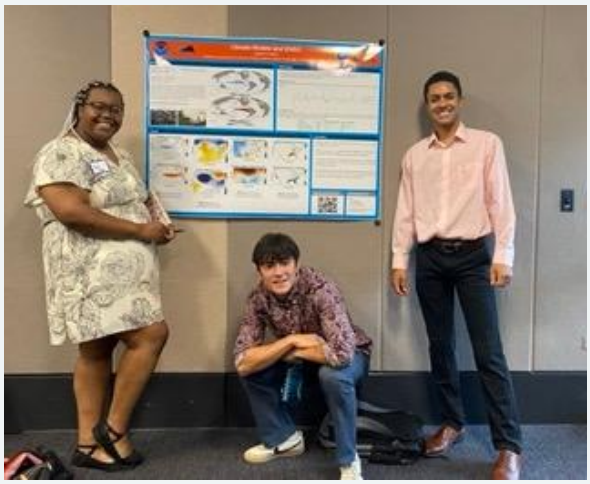
RECCS End of Program Celebration at Scott Carpenter Park.

From left to right: Adeena Chughtai, Alicia Christensen, Jes DeGroot, Lex Emond, Karla Pineda, Liam Milton, Rylee Baca, Adam Thomas, Xavier Cotton. **Photo**: Lex Emond, RECCS 2022.

RECCS Wrap Up

Students finished up their research projects last month and put together their final poster presentations. They presented their final projects in front of an audience at the University of Colorado Boulder.

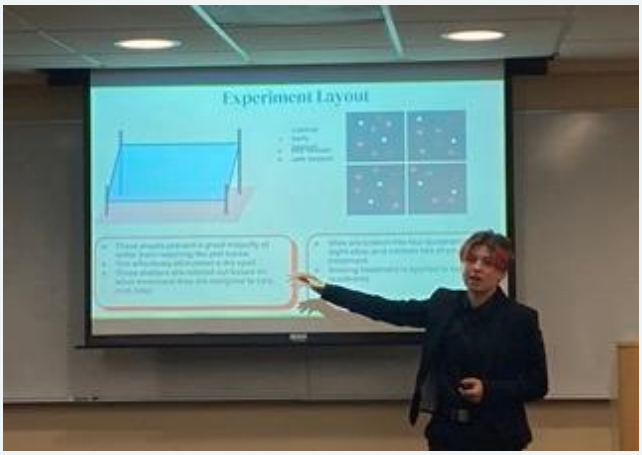
Thank you to our amazing students for their hard work and participation in our program this summer! We also thank our project mentors, peer mentors, all of our guest speakers, and our sponsors.



Xavier Cotton's poster.

Pictured left to right: Brianna Alcorn, Liam Milton, and Xavier Cotton.

Brian Hertvik's poster presentation.



Rylee Baca's oral presentation.

Victoria Macias' oral presentation.

Student Fieldwork

Pictured: Rylee Baca doing fieldwork.

Pictured: Brian Hertvik doing fieldwork.

Pictured: Victoria Macias doing fieldwork.

Student Project Highlights

Student: Jessica DeGroot

Mentors: Matthew Burgess, Ryan Langendorf, Ashley Dancer

Project: Climate & Economics - One of our lab's main research interests is in forecasting how various large-scale development trends might affect both greenhouse-gas-emissions pathways and societies' ability to mitigate and adapt to climate change. One development trend we are interested in is aging populations and the prospect of the global population declining in the second half of the 21st century due to low birth rates. The objective will be to understand how aging populations might affect governments' fiscal capabilities to invest in climate change mitigation and adaptation projects.

Bio: Jes recently completed her associate degree at Front Range Community College with plans to pursue a Bachelor of Science in Ecosystem Science and Sustainability at CSU. She is a non-traditional student, taking the scenic route to her academic goals.

Originally from Austin, Texas, where her love of nature began, Jes has grown to love the mountainous beauty of Colorado. She enjoys reading, Irish dancing, swimming, and soaking up the sunshine.

Jes has always been passionate about environmental protection, and in recent years, has focused her attention on climate change and environmental justice. She is eager to learn and aspires to become an asset to her community, in addressing the challenges of a changing climate.

Student: Liam Milton

Mentors: Ben Livneh, Nels Bjarke, Joseph Barsugli

Project: Climate – Climate change has impacted water supply across the western US in recent decades and will continue to do so in the coming century. Recent drought motivates further investigation into the future of water availability, particularly for the Upper Colorado River Basin as a key source of surface water for the western US. We hypothesize that increasing greenhouse gas emissions will directly impact basin-wide aridity and limit runoff, an effect that we believe will increase with increasing emissions.

Bio: Liam was born in Japan and moved to the United States when he was 6 years old. Liam has lived in New Mexico, Idaho, Arizona, and finally, Colorado. He is currently attending Northeastern Junior College, studying and playing soccer.

Student: Xavier Cotton

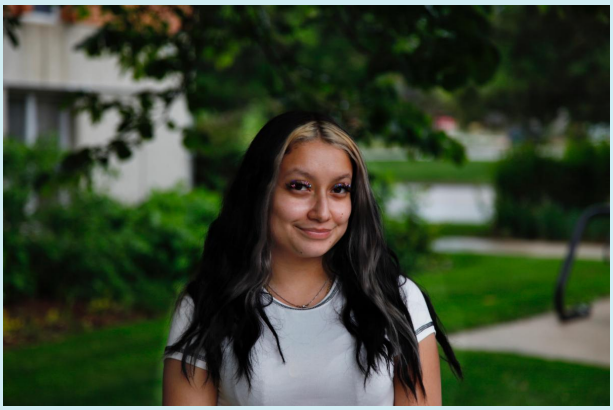
Mentors: John Albers, Melissa Breeden, Brandon Wolding

Project: Atmospheric - Using Big Data to Predict Extreme Precipitation and Drought over Southern Asia and the United States Summary: The goal of this project is to utilize observational data sets and climate model output from the European Center for Medium Range Forecasting to investigate the causes and predictability of extreme weather over North America and southern Asia.

Bio: Xavier Cotton is transferring from Front Range Community College to the Colorado School of Mines as a junior in the Fall of 2022 where he will pursue a BS in Computer science. He kept busy during his community college years; two of his proudest accomplishments are leading a DemoSat team for the Space Grant Consortium and presenting an innovative way to clean oil spills in Washington DC for the Community College Innovation Challenge. After graduating, Xavier would like to be a software engineer specializing in AI development and innovation to help world sustainability.

Xavier loves all things computers, long board games, shopping, and peanut butter jelly. On the weekend, you can probably find him working on a coding project or binge-watching a reality tv show.

Student: Karla Lemus



Mentors: Ellie Browne & Bri Dobson

Project: Geochemistry – We are developing a project for the ambient monitoring of amines in the gas-phase and in aerosol samples. The collection protocol and analysis are being developed this semester and should be working by this summer.

Bio: Karla Lemus was born in Morelia, Michoacán and was raised in Salinas, CA and Aurora, CO. After learning English from cartoons, Karla graduated from Hinkley High School and is now attending Community College of Denver recently changed her major from biology to Chemistry after participating in the RECCS program.

Karla has been a volunteer at Children's Hospital, she has volunteered in US Citizenship preparation classes, as well as assisted with completing and filing residency and citizenship applications. Karla has assisted in raising food, clothing, and first-aid materials to ship across the border for those in need. Not to mention, one of the proudest moments in Karla's life includes being able to intubate in a simulation lab on the first attempt.

Karla hopes to be able to provide back to her community. Karla plans to transfer to CU Boulder where she will further expand her knowledge and finalize her plans on helping those with low resources.

Student: Adeena Chughtai

Mentors: Sebastian Kopf, Lynne Albert, Adam Younkin

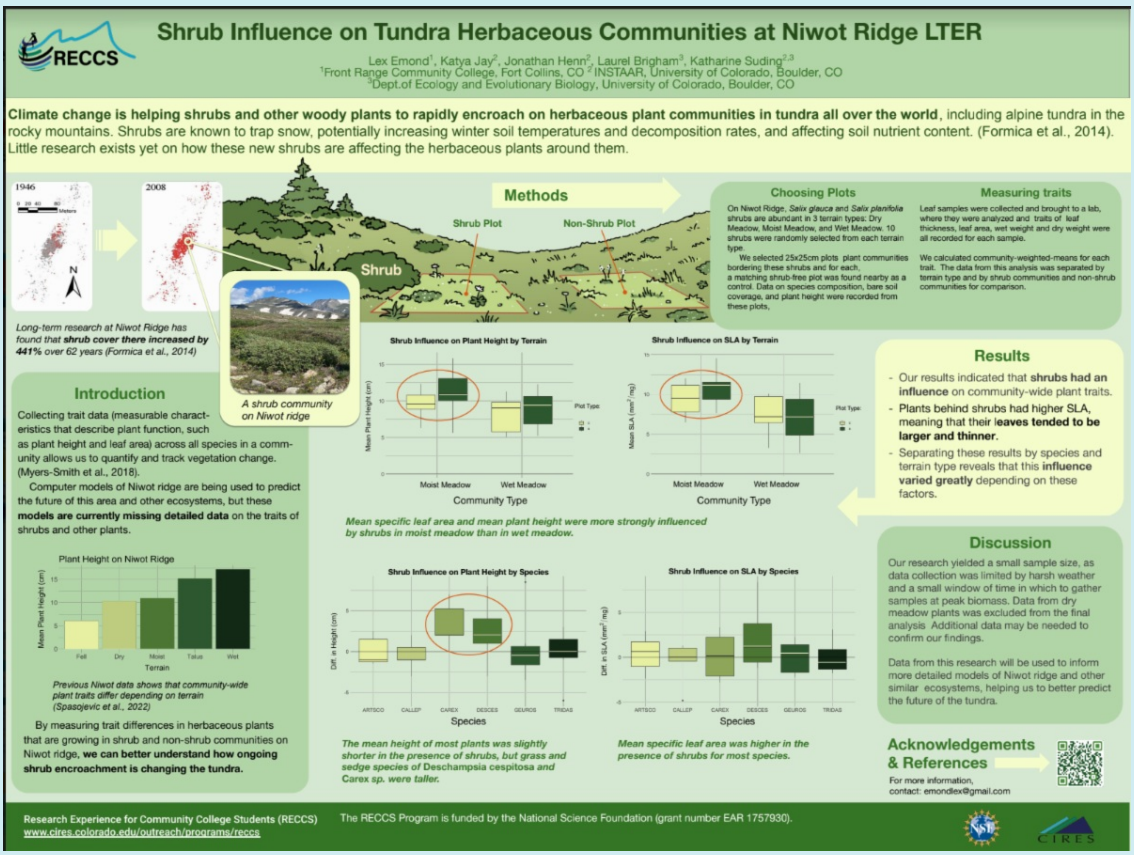
Project: Microbiology – New antibiotics are rarely developed and bacteria can quickly develop resistance due to misuse and overuse. However, an enormous potential source of new antibiotics exists within the microbes in ordinary soil who use them for defense against predators and competitors. This summer research project focuses on using newly isolated soil bacteria to develop questions and protocols to study their behaviors (such as antibiotic production) in a classroom environment.

Bio: Adeena received her AS in Biology from Front Range Community College this May. In her time at FRCC, she unexpectedly fell in love with math and engineering and consequently changed her studies from pre-med to biomedical engineering.

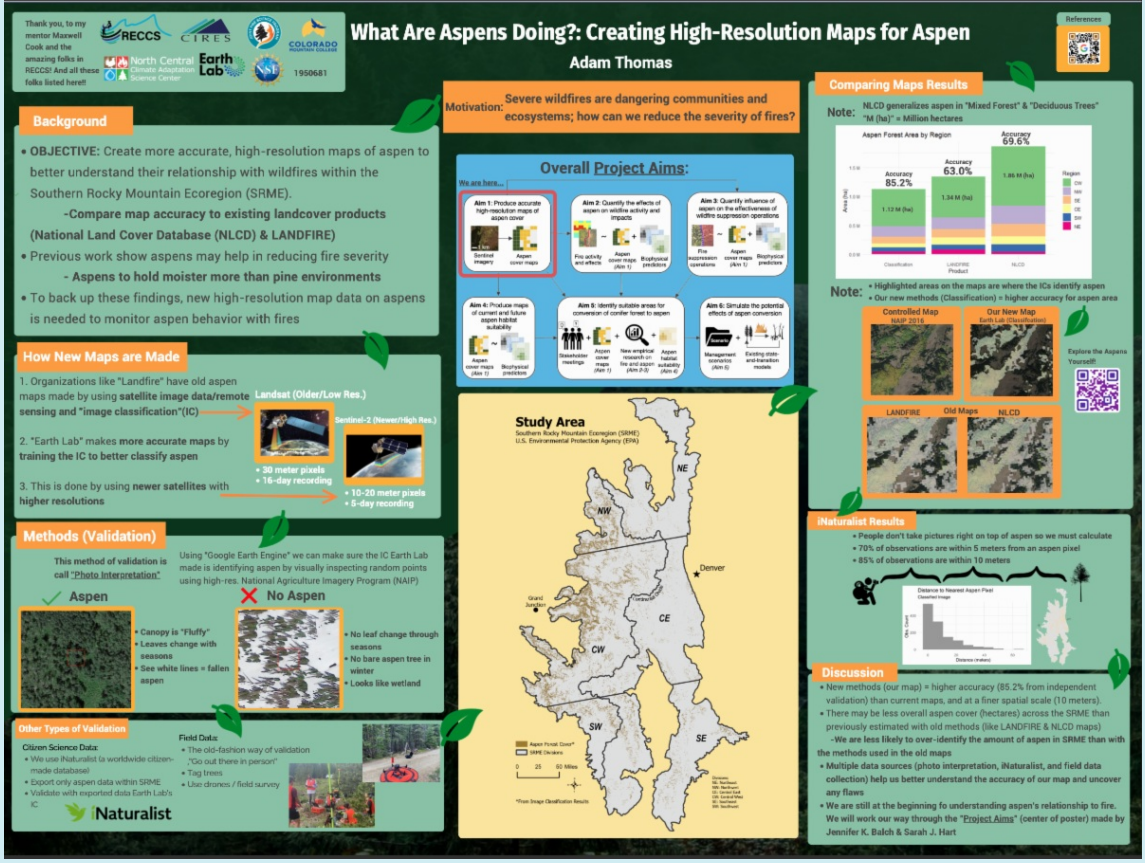
She was part of the Supplemental Instruction program for five semesters, during which she developed skills to support students through College Algebra through active learning. She also had the opportunity to be a member of the Colorado Space Grant Consortium through the DemoSat program — Adeena and her teammates were the recipients of the grand prize at the 2022 Undergraduate Space Research Symposium, for their research on changes in atmospheric gamma radiation levels with respect to altitude.

Adeena will continue her studies at the Colorado School of Mines and complete her BS in Quantitative Biosciences and Engineering. She hopes to step into the field of prosthetics development and dreams of making sustainable, high-quality prosthetic limbs available for each individual in need of them.

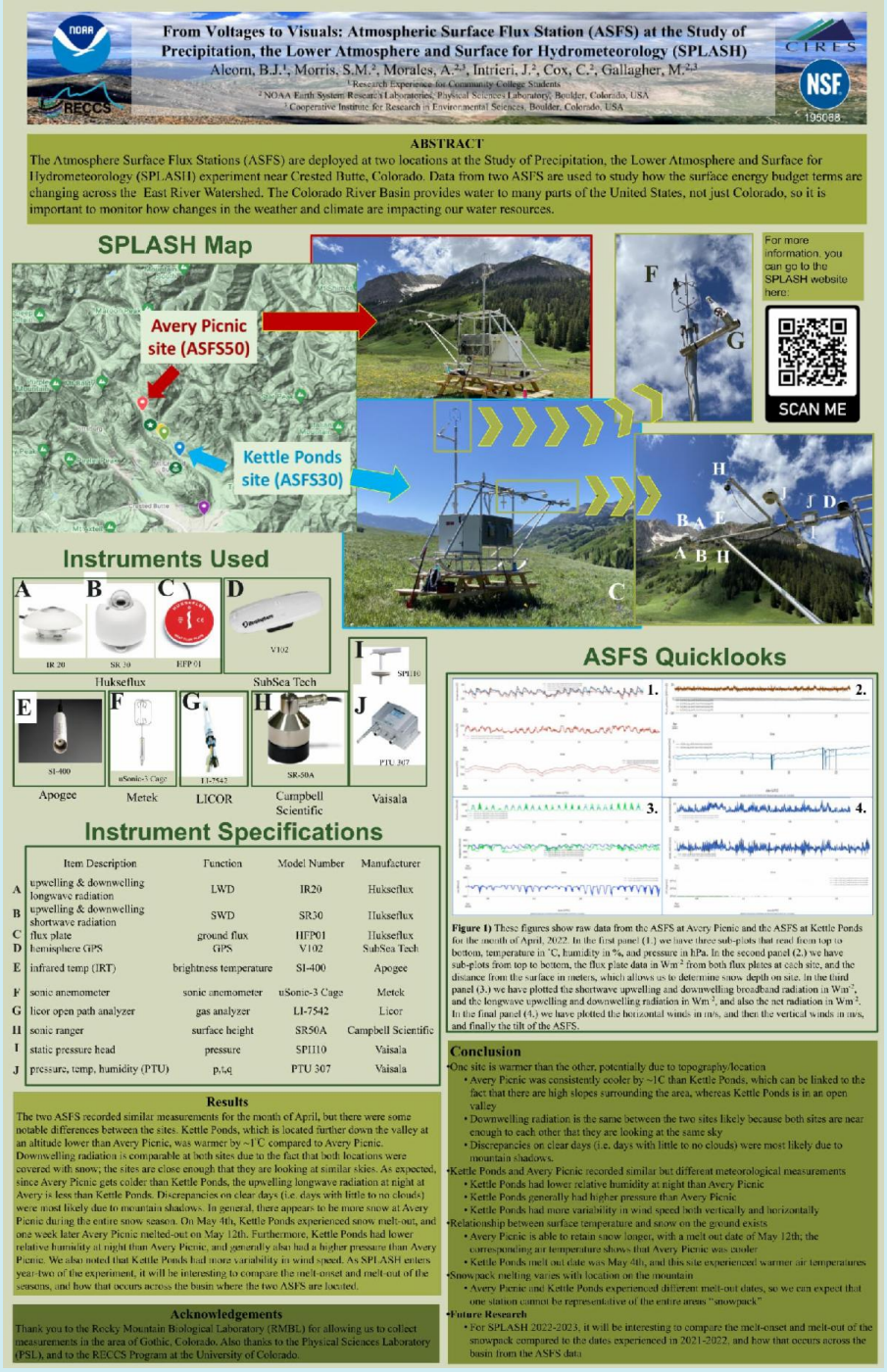
Final Posters Highlight



Lex Emond Research Project Poster.



Adam Thomas Research Project Poster.



Brianna Alcorn's Research Project Poster.

Current Job Openings

- CIRES/ NOAA PSL Research Scientist in Hydroclimatic Predictions, Predictability and Projections Boulder, CO
- Research Associate Boulder, CO
- CIRES/ NOAA Global Monitoring Laboratory, Programmer/ Electronics Associate Scientist Boulder, CO
- Research Ecologist or Research Forester Morgantown, WV (Closes Aug 15, 2022)
- Graduate Environmental Geochemist Denver, CO
- Wetland Biologist Aurora, CO
- Physical Scientist Lakewood, CO (Closes Aug 17, 2022)
- Chemical/Environmental Engineer Denver, CO
- Environmental Co-op/Intern - Fall 2022 Orchard Island, OH (Closes Aug 11, 2022)

- Environmental Professional (Geophysics) **Denver, CO**
- Physical Scientist (Land Surveyor) **Concord, MA (Closes Oct 18, 2022)**
- General Physical Scientist **Anchorage, AK (Closes Dec 30, 2022)**
- Research Ecologist / Research Rangeland Management Specialist **Fort Collins, CO (Closes March 21, 2023)**
- Research Soil Scientist/Agricultural Engineer/Physical Scientist (Research Associate) **Saint Paul, MN (Closes March 21, 2023)**

Join RECCS on Linkedin!

1. Create or update your Linkedin profile (**view the how-to video**)
2. Connect with us on **Linkedin**!

We post job listings or other opportunities on our page weekly.

What is going on with RECCS?

The 2022 RECCS program has come to an end and students are pursuing their various future academic plans.

RECCS Team

Alicia Christensen, Bec Batchelor, Christine Okochi, Anne Gold (RECCS PI), Karla Pineda Velez, Dana Stamo






Contact us at reccs@colorado.edu or visit our program page at cires.colorado.edu/outreach/reccs

RECCS is funded by the National Science Foundation Grant Award Numbers:
EAR 1757930, EAR 1461281, DEB 637686, EAR 1331828, AGS 1839741

www.cires.colorado.edu/outreach/programs/reccs

Received this as a forward? Sign up to get future emails sent to your inbox.