# FOUNDATIONS IN SCIENCE COMMUNICATION FOR COMMUNITY COLLEGE -MICRO-CREDENTIAL

The Foundations of Science Communication for Community College Students - RECCS program micro-credential focuses on the specific science communication skills learners accomplish during the RECCS summer research experience. The Research Experience for Community College Students (RECCS) is a paid summer research experience program open to all Colorado community college students. The goal of RECCS is to give community college students an authentic research experience in the Earth and environmental sciences at CU Boulder. The program allows students to explore environmental or geosciences and gain the confidence to transition to a four-year program in the STEM (Science Technology Engineering Math) disciplines. RECCS participants conduct field- or lab-based independent research over a nine-week period in the summer while working with a team of scientists. Students are matched with mentors and work in labs alongside graduate students and postdocs. Students learn basic research, writing and communication skills, and they present their research at a local student science symposium.

## Eligibility

All Colorado community college students are eligible to apply for the RECCS programs.

## **Delivery Mode**

In-person

## **Credit Status**

Noncredit

## **Academic Level**

Undergraduate

## **Time to Completion**

Thirty days

Criteria

## Requirements

The requirement is that learners successfully complete the RECCS program's science communication deliverables:

- Prepare and present a scientific poster to an audience of scientific professionals and undergraduate peers.
- Prepare and present a 10-minute scientific talk to a general audience.
- Deliver a 5-minute whiteboard talk about their research background and methodology.
- Write a conference proposal abstract about their research.
- Prepare and deliver a 2-3-minute elevator pitch about their research.
- Participate in 9 weekly Wednesday morning science communication workshops (~20 hours).

#### · Title, Author names, Funding recognition,

- Introduction (includes connections to prior research, explains why research is important or why the project is needed and the research question or goal of the project),
- Methods (explains how they did their research or completed their project incl. number of research subjects if applicable, size, location, equipment used, timing/when it was done, where data was obtained from, the process used),
- Results (includes tables/graphs/figures/maps that display the results in a way that can be interpreted easily by the audience, includes captions that explain the figures),
- Discussion explores your results and puts them in context. The discussion may include comparisons with previous work and speculation on what is being observed. It may also address the limitations of your work. The discussion section responds to these questions: Do these results support or contradict existing literature? Do the results answer the questions that you asked in the introduction?
- Conclusion a few sentences that summarize the entire poster. The conclusion particularly highlights the results of the experiment and leaves readers with a positive impression of your lessons learned from the project.
- References that follow APA format.

#### Prepare and present a 10-minute scientific talk to a general audience. Criteria include:

- Introduction includes connections to prior research, explains why research is important or why the project is needed, and the research question or goal of the project,
- Methods explains how they did their research or completed their project including number of research subjects if applicable, size, location, equipment used, timing/when it was done, where data was obtained from, the process used.
- Results and Discussion explores the results and puts them in context. The discussion may include comparisons with previous work and speculation on what is being observed. It may also address the limitations of the experiment. The discussion section responds to these questions: Do these results support or contradict existing literature? Do the results answer the questions that were asked in the introduction?

## Deliver a 5 minute white-board talk about their research background and methodology.

- Introduction includes connections to prior research, explains why research is important or why the project is needed, and the research question or goal of the project,
- Methods explains how they did their research or completed their project including number of research subjects if applicable, size, location, equipment used, timing/when it was done, where data was obtained from, the process used.
- Results and Discussion explores the results and puts them in context. The discussion may include comparisons with previous work and speculation on what is being observed. It may also address the limitations of the experiment. The discussion section responds to these questions: Do these results support or contradict existing literature? Do the results answer the questions that were asked in the introduction?

### Scientific poster criteria include:

#### Write a conference proposal abstract about their research. Criteria:

• Summarizes the research, including introduction, methods, results and conclusions, typically in approximately 250 words.

## Prepare and deliver a 2-3-minute elevator pitch about their research. Criteria are:

- Starts with a quick introduction. Say who you are and what your research question is. Include a statement about why studying the topic is important.
- Explain any necessary background information as simply as possible. Incorporate analogies and imagery.
- Discuss results.
- Finally, talk about what these results mean and the potential benefits of this new knowledge. Emphasize how your research relates to people's everyday lives, even if the practical implications are far in the future.

### Skills

- · Collaboration and teamwork
- Creativity
- Critical thinking
- Critiquing
- · Defend an argument
- Feedback integration
- Independence
- · Literature interpretation
- Oral communication
- Organization
- Presentation skills
- · Scientific poster design
- Time management
- Written communication