

SCIENCE DISCOVERY - STEM RESEARCH METHODS - MICRO-CREDENTIAL

The STEM Research Methods micro-credential validates that high school students have developed foundational skills in the scientific process. Through a mentored research project with a University of Colorado scientist, participants learn to review literature, ask testable questions, design experiments, visualize & analyze data, and communicate findings through a scientific poster presentation.

Eligibility

- High school students who participate in a research experience sponsored by a CU research mentor

Delivery Mode

In-person

Credit Status

Noncredit

Academic Level

- Other (high school students)

Time to Completion

One semester

Fee

No

Requirements

- **Course:** Research Methods Seminar (in-person through the CU Science Discovery STEM Research Experience or online using the asynchronous materials).
- **Projects:** Scientific research project and poster.

Criteria

Complete the CU Science Discovery Research Methods Seminar (in-person or online). The research methods seminar includes the following learning objectives:

- Make scientific observations, ask questions and formulate testable hypotheses to initiate further exploration of natural phenomena.
- Maintain meticulous accurate records in a professional research setting.
- Obtain, read and evaluate primary scientific literature.
- Collect, analyze and visualize data by setting up data tables and choosing appropriate graphs.
- Develop a visual model (graphical abstract) or their research project.
- Create an engaging narrative to communicate their research.
- Develop a professional relationship with a research mentor who can verify research skills development.
- Complete a self-inventory of their scientific research skills.
- Create a scientific poster as evidence of their research project.

Skills

- Active listening
- Asking scientific questions
- Collaboration
- Creativity
- Critical observations
- Critical thinking
- Data analysis
- Data visualization
- Experimental design
- Incorporating feedback
- Problem-solving
- Resilience
- Science communication
- Scientific literature review
- Time-management