

Introduction

What is new in Outreach?

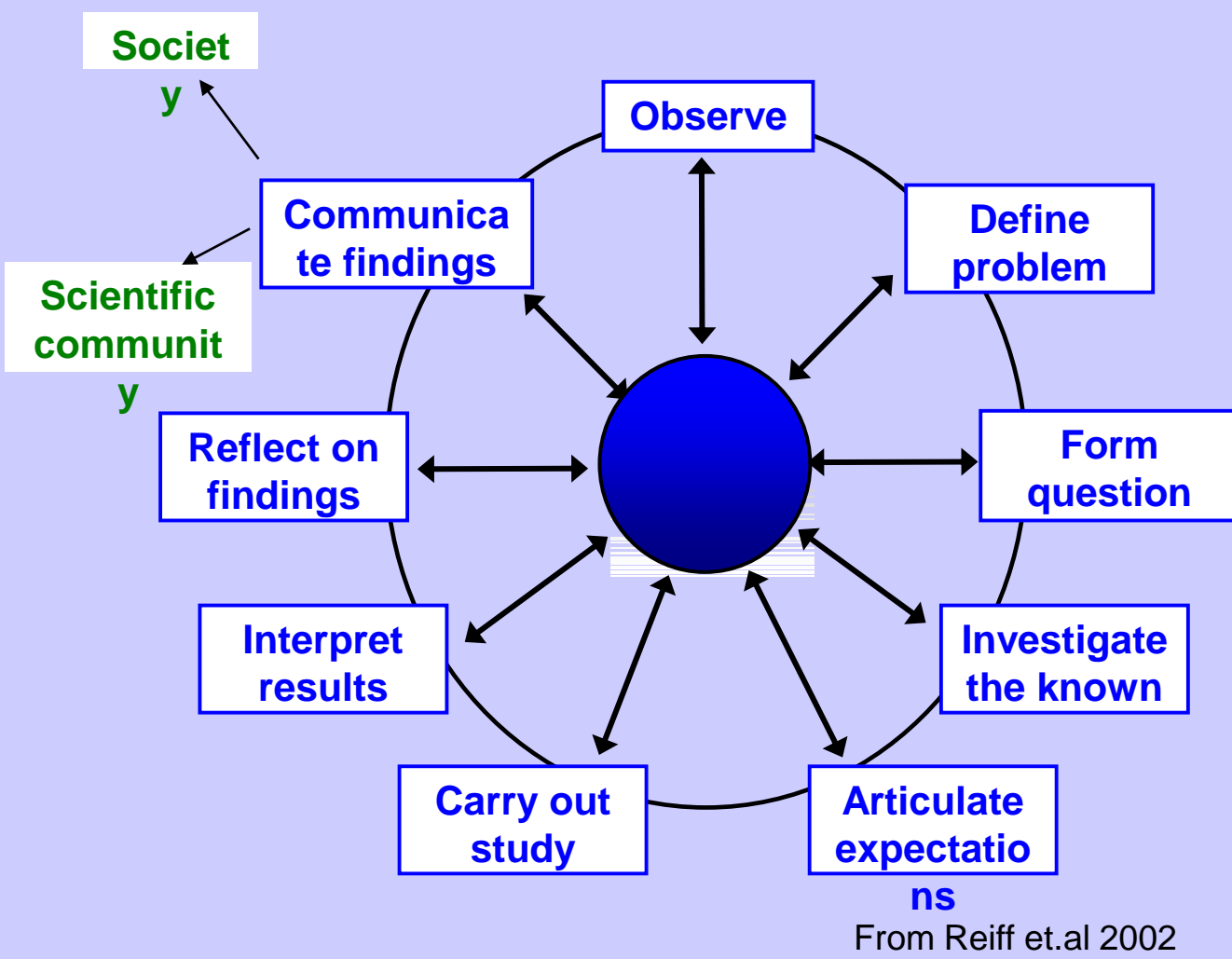
Outreach is defined by CU as “the various ways in which the University extends its expertise for the direct benefit of Colorado communities and other external audiences.”

The CIRES Education and Outreach program has developed new theme areas over the last year, including projects in support of climate change education and videography of current research projects for use in the classroom.



Students work on a CIRES space weather curriculum.

Supporting Climate Change Education

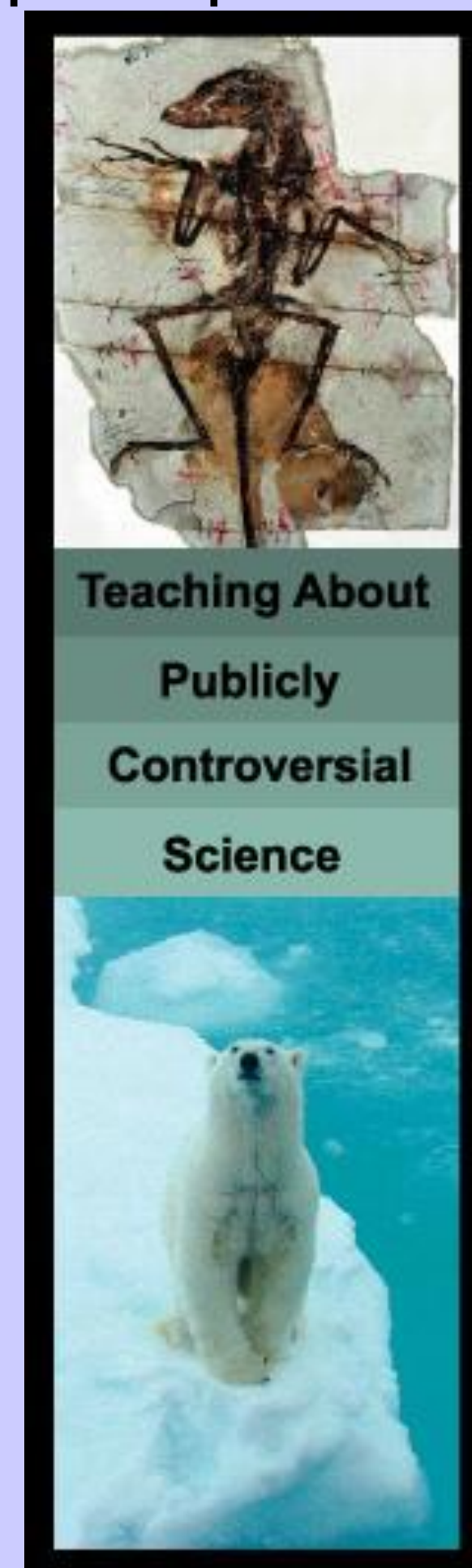


“...CIRES is committed to...fostering public awareness of these processes to ensure a sustainable future environment.” [Excerpted, CIRES Vision and Mission Statement]

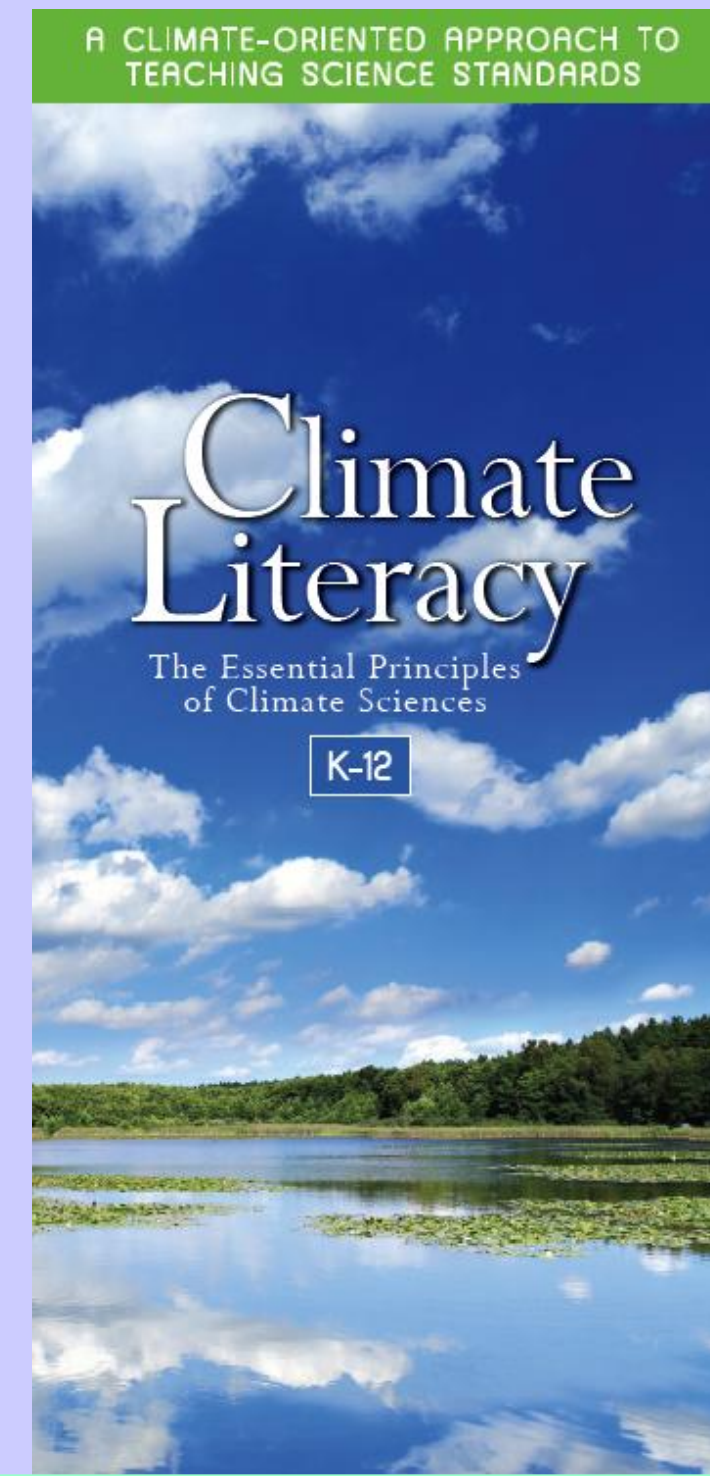
A correct understanding of the nature of science and the professional culture of science helps learners accept the scientific view of climate change science. This is especially useful to address any perception of controversy.

Scientists can help the public understand the nature of science.

Research on Colorado Classroom Practices
Sarah Wise is researching the influence of public controversy on the attitudes and classroom practices of Colorado teachers on topics such as climate change and evolution. Preliminary data indicates teachers may experience pressures both for and against teaching these topics from students, parents or colleagues. This survey is the first survey of U.S. teachers to examine patterns of climate change instruction, and the first study to compare the teaching of climate change with instruction on evolution. Preliminary results indicate that teachers, including secondary science teachers, have a surprising mix of non-scientific and scientific attitudes and concepts of climate science.



Supporting Climate Change Education



A tool for climate education and communication

Communicating Climate Change Workshops

Geoscientists are increasingly asked to speak about climate change, with students, family members, media and the public. Sarah Wise and Susan Buhr have developed a travelling workshop to instruct participants on best practices science communication, common public climate misconceptions, and strategies for addressing controversy. See the CIRES website for spring and summer offerings.

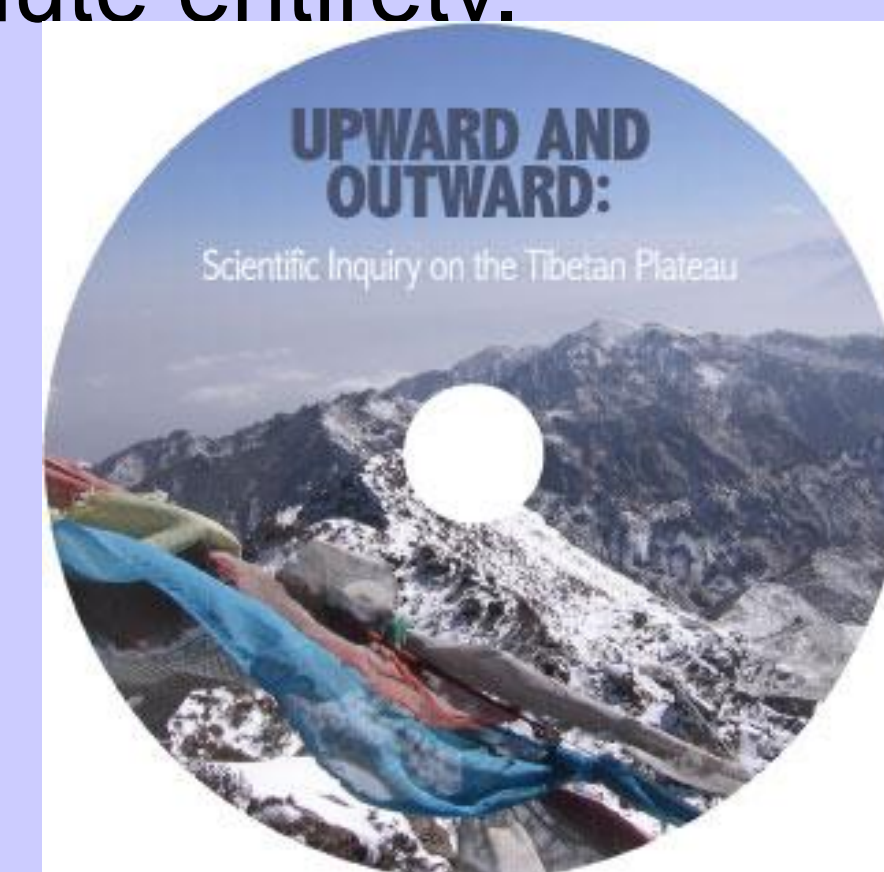
The Climate Literacy Framework

Over the past year, CIRES Outreach has led or participated in other climate related events, such as Ice Fest (March 2008) and CU Focus the Nation (January 2008). CIRES also assisted with the development of the NOAA –led Climate Literacy Framework, a peer-reviewed framework outlining the essential principles required for a robust understanding of climate sciences.

New Videography Capabilities

Recently we have learned to use videography to communicate about current research and fundamental science.

Ryan Vachon filmed and produced “Polar Visions”, a documentary of Arctic climate change shot in Alaska and Greenland. The film is targeted to high school and college classrooms, viewable in segments or in it’s 18 minute entirety.

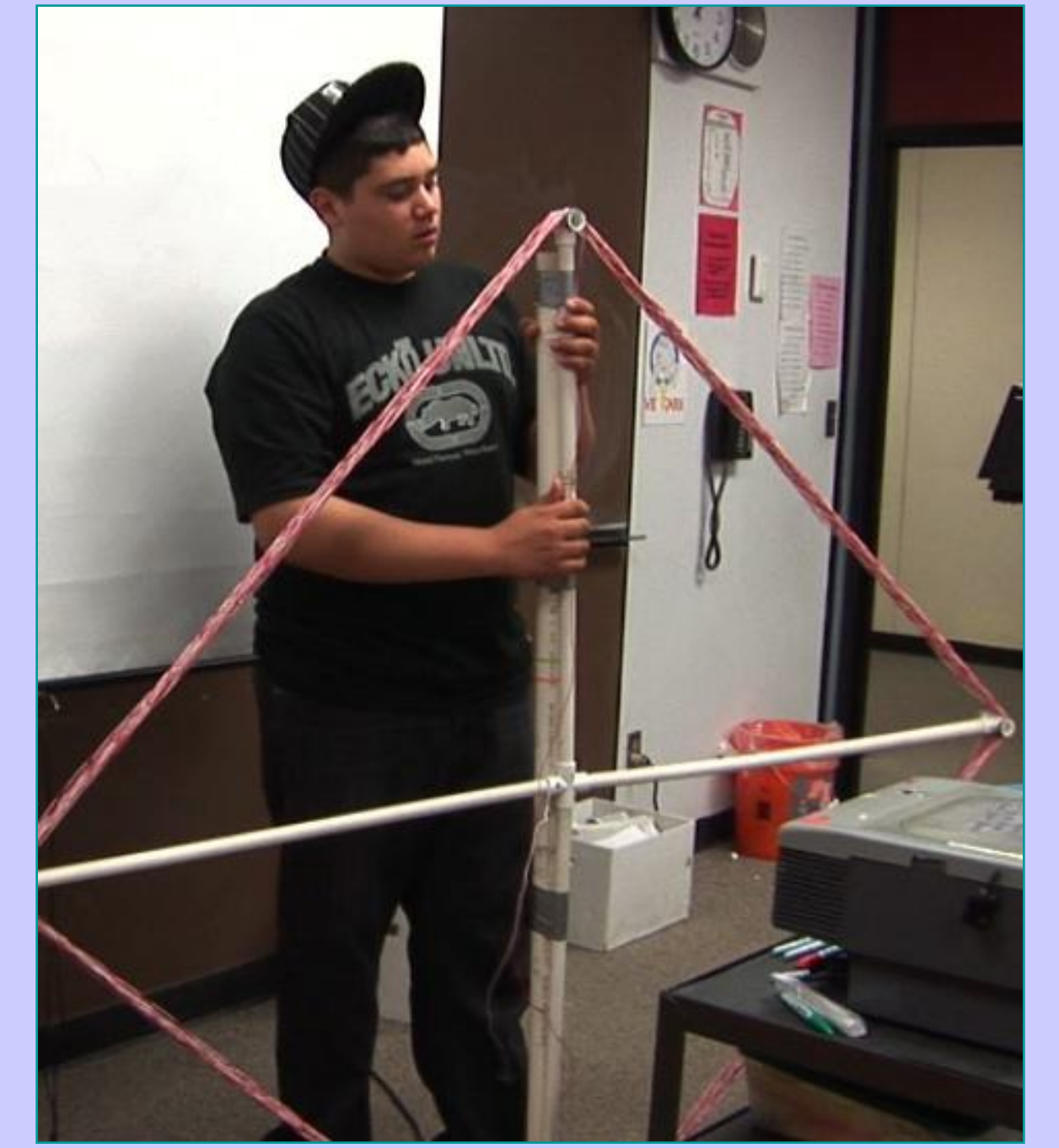


Helping teachers teach the process of science.

Upward and Outward is a 20-minute documentary film that chronicles an international team led by CIRES Fellow Peter Molnar as they conduct research on the Tibetan Plateau. Through this film, teachers and students gain a realistic glimpse into the world of science, following the scientific team as they pose questions, plan investigations, and gather and interpret evidence. This film was produced by Sandra Laursen as a NSF Broader Impacts activity of Molnar’s grant. Copies may be borrowed by CIRES personnel or ordered. See the CIRES Outreach website for more on films.

New Videography Capabilities

Ryan is developing video outreach products related to the NASA Extreme Ultraviolet Variability Experiment (EVE), which is part of the Solar Dynamics Observatory (SDO) satellite mission. The products “All About EVE”, “The Making of a Satellite Instrument”, and a careers segment will be a central part of the materials provided to SDO-EVE scientists all over the country, and in the materials which go to teachers. Mark McCaffrey is point person for EVE outreach, which includes curriculum for students under-represented in science, teacher professional development, and a workshop for journalist. Ryan is available to provide similar videography support for science.



High school student working on EVE space weather curriculum.

Newly Funded Projects



Graduate student helps teacher understand landforms.

Recently funded projects include a \$2.8M NSF GK-12 grant led by Science Discovery. CIRES’ Lesley Smith collaborates on this project to support CU graduate students in partnership with Boulder Valley SD teachers.

CIRES Outreach was also awarded recent funding to work with after-school groups on geomagnetism topics. This project is in collaboration with NOAA ESRL researchers Stephan Maus and Susan McLean.

How to Work With CIRES Outreach on Proposals

- Call us as soon as you know you will propose.
- We provide proposal support for free.
- We may be able to provide outreach for low or no-cost (depending upon overlap).
- We write budget and text for our outreach; we call the program officer for a reality check.
- We develop relationships, do administration and logistics work.

Contact and References:
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cires.colorado.edu/education/k12/

“A Scientific Method Based on Research Scientists’ Conceptions of Scientific Inquiry,” R. Reiff, W. S. Harwood, T. Phillipson. 2002 Proceedings of Conference of the Association for the Education of Teachers in Science.