



## CSI: Climate Status Investigations

A Program of The Keystone Center for Education

### Overview

In 2004, The Keystone Center launched a partnership with the Department of Energy (DOE) and National Energy Technology Laboratory (NETL) to develop an interdisciplinary middle-level curriculum designed to explore the issue of global climate change. In 2006, our team designed a high school-level curriculum as well. Both curricula lead students through an exploration of the factors contributing to greenhouse gas levels and the resulting economic and social impacts associated with climate change.

Developed to train educators in these curricula, CSI: Climate Status Investigations is a national teacher development program hosted by The Keystone Center that provides middle and high school-level educators with the skills and confidence to investigate the issue of global climate change with their students.

Through sponsorships provided by corporations, foundations, school districts, and community organizations, teachers attend trainings on lessons that use hands-on inquiry to explore the science of global climate change, the primary sources of greenhouse gases, and potential solutions. By providing a non-biased scientific framework within which to examine issues around global climate change, the curriculum is intended to improve the decision-making abilities of students.



### What Makes Our Program Unique?

The distinctiveness inherent in CSI: Climate Status Investigations stems in part from the program's interface with the nationally-respected Keystone Center for Science and Public Policy, a division of The Keystone Center. Science and Public Policy facilitators mediate national and international public policy debates, working to develop consensus among stakeholder groups on contentious issues. This association provides our program's participants with a real connection to current issues, while observing how public policy issues are actually addressed and resolved. The Science and Public Policy facilitators have also assisted in leveraging expert speakers to provide substantive knowledge for the participants and to inform the curriculum development and enhancement.

Additionally, we emphasize progressive educational components:

- **Non-biased Approach:** Teachers and students are introduced to a new way of thinking about their approach to contentious issues. They learn strategies to identify and remove their own bias in order to facilitate inquiry and critical thinking.
- **Systems Thinking and Sustainability Framework:** Our programs incorporate the 3Es of sustainability—Environment, Economics and social Equity—within a systems approach as a basis for examining issues and making informed decisions.
- **Scientific Process:** Our curricula are based on a scientific process that includes historical information, hard science data collection, and social perspectives.



- **Open-ended:** Our format allows participants to solve problems in a variety of creative ways based on the evidence and data they have collected - very different from the standard "cookbook" approach.

- **Service Learning Opportunities:** We encourage participants and their students to use the knowledge they have gained to become active citizens of their communities;

- **Standards-based:** Our curricula is aligned to national and regional education standards in a variety of disciplines, including language arts, math, science, and social studies.

- **Infusion of 21st Century Global Competition Skills:** We incorporate the skills and concepts of: Global Awareness; Financial, Economic, Business and Entrepreneurial Literacy; Civic Literacy; Learning and Innovation; Technology, Communication and Media; and Life and Career Skills.

- **Teaching Materials:** We work with partners to develop cutting-edge science kits and labs that relate specifically to each program and curriculum unit.

- **Technology:** An online support system for participants enables educators and program staff to share information regarding curricula implementation, new ideas and resources, as well as



CSI: Climate Status Investigations aims to broaden the scope and quality of national education by presenting a balanced, non-biased, comprehensive and interdisciplinary approach to the study of global climate change.

## Goals, Objectives and Outcomes

### The teacher training program strives to:

- Cultivate the decision-making skills necessary to resolve today's complex issues.
- Enhance critical thinking skills.
- Connect teachers, students, schools, corporations, and leaders in local communities.
- Help teachers prepare students to become future leaders.

### These goals are addressed through our program objectives:

- Improve the understanding of global climate change.
- Use non-biased processes and activities to advance decision-making abilities.
- Utilize interdisciplinary teams to augment and solidify the long-term implementation of the CSI: Climate Status Investigations curriculum in schools nationwide.
- Increase the use of state-of-the-art technology.

### Through participation in CSI: Climate Status Investigations, teachers will:

- Understand concepts and terms associated with global climate change.
- Use a scientific framework for issues investigation.
- Gather, analyze, and evaluate data.
- Conduct mediation role-playing sessions to arrive at conclusions.
- Make personal, local, and national action-taking recommendations.

provide feedback and access the most recent updates to the lessons.

- **Tangible Rewards:** In addition to learning a new approach to help stimulate student interest and better thinking, educators who successfully complete the CSI: Climate Status Investigations training also have the option of receiving graduate-level relicensure credits from Colorado School of Mines at minimal cost.

### Instructional Staff

The instructional staff are practicing teachers who have participated in the program and use the curriculum in their classrooms. They mentor participants to provide them with easy-to-use activities and methods that are proven and effective. Their expertise and first-hand knowledge of the current education system represents an invaluable asset to the program's effectiveness.

### Program Implementation and Impact

The topic of global climate change is an issue with universal applicability, meaning students from diverse backgrounds and geographical locations will benefit from the curriculum. Participants commit to implementing the module in their classrooms and because of its appeal, the curriculum can be applied as an entire unit or individual activities. On average, a public school teacher will teach 6 classes per day with 30 students in each class. As a result, each teacher that implements these lessons over a school year has the potential to impact 180 students per school year. Nearly all (90%) of teachers who participate in this training report that the program provides them with the necessary background knowledge and skills needed to teach this timely topic. Moreover, 100% of teachers who participate believe that the curriculum help them make connections between science and the real world, and 80% feel that CSI helps them make connections to other subject areas (based on results from an independent evaluator).

### Conclusion

Today's youth are tomorrow's leaders. Our future depends on having well-educated, skilled and motivated young people as active members of our society. Understanding the issue of global climate change requires a balanced knowledge of the scientific, technical, political and social complexities of the issue. The unparalleled components of our program provides educators with

the tools and techniques to help students better assess all sides of current and future factors impacting global climate change and make decisions based on scientific data and social considerations. Through CSI: Climate Status Investigations, we equip young scholars with skills to succeed in the complex and ever-changing world in which we live and to confront an issue that will be pivotal to their generation.

Assisted by expert science, careful convening, and skilled process design and management, we promote cooperative solutions with an eye toward creating enduring agreements and improved relationships through dialogue and consensus-based decision-making.

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Or, visit the CSI website, [keystonecurriculum.org](http://keystonecurriculum.org).

