

# The Marshall Fire: Resources for educators and the general public in the aftermath



January's Marshall Fire has and will continue to have a profound impact on the CIRES Community. This issue of our newsletter focuses on the Marshall Fire and highlights resources for educators and the general public to help cope with the aftermath of this natural disaster in our backyard.

Now is the time to elevate conversations about climate change and natural disasters. *We support action as a means of improving mental health during this time of increased stress and trauma.*

A collection of supportive signs in neighborhoods at the intersection of Pine and Via Appia in Louisville. Photo: Ami Nacu-Schmidt.

## February 2022 Inside This Issue

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- Resources for coping with Trauma
- CIRES Science Highlight: Science from the Marshall Fire
- Welcome to our new team members!

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East Grand Middle School, pictured above, was in the path of smoke from the East Troublesome fire. Photo: Scott Hicks.

## HEART Force Program Implementation Vignette

Rebecca C., a chemistry teacher at East Grand Middle School, started off the 2020 school year engaging her students in role-play games and local wildfire data from the HEART Force curriculum. Then in October, the East Troublesome wildfire rapidly overtook the Grand Lake community, and students were evacuated from the very hazard they had been learning about in school. Suddenly it all became too real for Rebecca and her students. With a need to step away from the curriculum due to the raw emotions it brought up, she did not revisit it with her students until the spring. At first hesitant to re-engage in the topic, she charged forward and discovered that people from the local fire department were ecstatic to work with her students to create public service announcements about wildfire preparation. "It was so wonderful to see the students get so passionate about something. The students who interviewed people who had lost their homes in the fire, their lives were completely changed as a result. "She used to have nightmares about the fire, but as a result of taking action with her students, no longer does. She found a way to heal through the experience and thinks that the students and adults involved probably did too.

## HEART Force Program

Environmental hazards—such as wildfire, flood, and drought—are increasingly affecting communities in Colorado. With this rise in hazardous events, there is a pressing need for communities to become more resilient through education, preparation, and planning.



The Hazard Education, Awareness, and Resilience Task Force (HEART Force) is a collaborative project implemented by the NOAA Cooperative Institute for Research in Environmental Sciences (CIRES) and NOAA's Regional Integrated Sciences and Assessments (RISA) partner Western Water Assessment.



## Design a Resilient Future

In this lesson, students will work in small groups to develop an idea to increase community resilience, utilizing Design Thinking. Students will create a human-centered design solution for their community to increase community resilience. This lesson is part of the Community Resilience Expo, a culminating event for the HEART Force curriculum unit, where students will share what they've learned during the hazard lesson and the role-playing game.



Photo by Jacob Lund from Noun Project

**View the HEART Force Program  
Here**



### **Assisting Parents/Caregivers in Coping with Collective...**

Offers strategies to help parents/caregivers cope with collective traumas. This fact sheet also provides guidance on what parents/caregivers can do to care for their children as they cope.

[Read more](#)

[www.nctsn.org](http://www.nctsn.org)



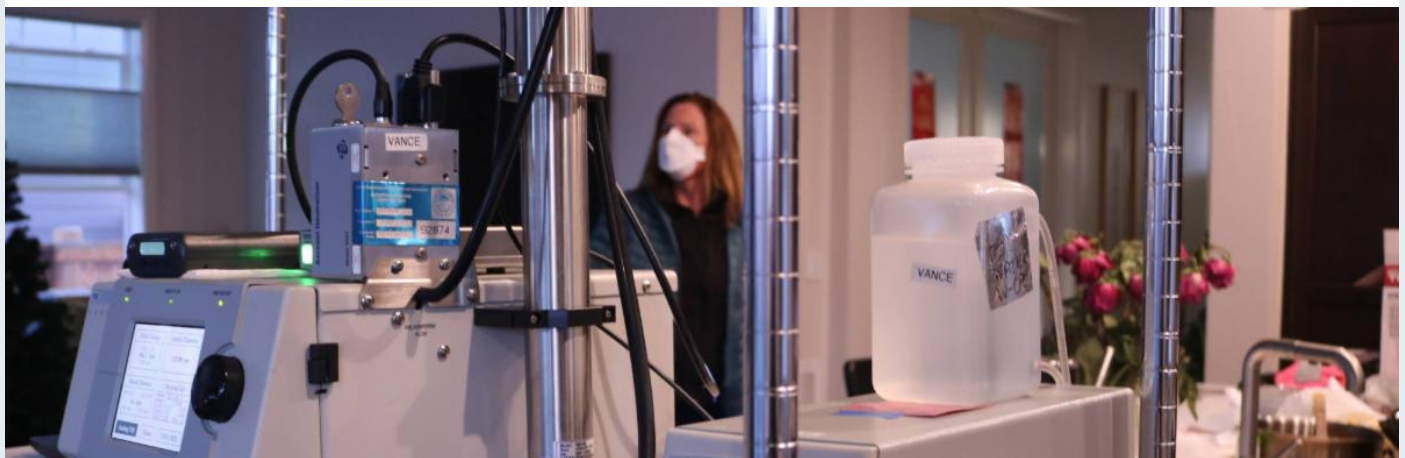
### **Mass Disasters, Trauma, and Loss**

Answer important questions on what to expect after experiencing a disaster, what factors increase the risk of lasting vulnerability, what survivors can do to reduce emotional vulnerability, and how to get help.

[Read more](#)

[www.istss.org](http://www.istss.org)

## **CIRES Science Focused on the Impacts of the Marshall Fire**



CIRES lab at CU Boulder

**[How Does Marshall Fire Smoke Affect Indoor, Outdoor Air Quality?](#)**

CIRES, CU Boulder and NOAA scientists move fast to understand the impacts of post-fire smoke on indoor and outdoor air quality.

## [How to Mitigate Post-Fire Smoke Impacts in Your Home](#)

CU Boulder scientists provide facts on wildfire-related indoor air quality and tips on how to mitigate.

## [What the Marshall Fire can teach us as we prepare for future climate catastrophes](#)

Kelsey Simpkins discusses what CIRES Scientists have learned in the month following the Marshall Fire including why this fire was unique, impacts on air and water, and how we can prevent this from happening again.

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## CIRES Education & Outreach News

CIRES Education & Outreach is excited to welcome Emily Ward to our team! Emily is an Education & Outreach Associate, Curriculum Developer, and an Evaluator and Educational Researcher. [Read Emily's bio here.](#)

We are also thrilled to welcome three babies to our group! Rowan, Skylar, and Perley are healthy and beautiful.



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## Engagement Opportunities for Educators



### [Data Puzzles - Call for Feedback](#)

Calling all MS/HS science teachers! Join developer Jon Griffith this spring to engage with new Data Puzzle resources which combine classroom-friendly datasets with the research-backed instructional practices of Ambitious Science Teaching. Teachers interested in piloting and providing feedback on these resources will receive a \$50 Amazon gift card! Hope to see you soon!!!

[View the Data Puzzles Collection Here](#)

## Water Education Status and Opportunities Survey

Colorado Teachers, Administrators, and Curriculum Leads: Water Education Colorado needs your help today! Please take this short, 5-minute [Water Education Status and Opportunities Survey](#) and enter your classroom/school in a raffle for a chance to win a \$100 Visa Gift Card. Your response to this survey will support the implementation of the [Statewide Water Education Action Plan \(SWEAP\)](#) for Colorado by providing a baseline for current water education efforts and identifying barriers and opportunities for greater education around one of Colorado's most critical resources. With your help, we hope to get a better understanding of the state of water education in Colorado's PK-12 Schools and Districts. If you are a Colorado resident, please complete the [Water Education Status and Opportunities Survey](#) by **February 22, 2022** to enter your classroom/school in a drawing for a chance to win a \$100 Visa Gift Card. Thank you in advance for your responses. Learn more about the Statewide Water Education Action Plan (SWEAP) with this [full-length introductory video](#) (4:36).

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# Outreach Opportunities for Scientists

Speak about your work to students participating in the [CoorsTek Denver Metro Regional Science and Engineering Fair](#) on February 25 during the day. Contact [daniela.pennycook@colorado.edu](mailto:daniela.pennycook@colorado.edu) or [denversciencefair@ucdenver.edu](mailto:denversciencefair@ucdenver.edu) if you are interested.



## Be a RECCS Mentor

Do you have a project idea for undergrads? Mentors are the heart and soul of this program, inspiring the next generation of scientists. The program runs from May 30-July 29. We provide a \$600 stipend and strong program support. Recruitment for mentors closes on Feb. 15.

For more information visit the [RECCS website](#) under the "Interested in Mentoring" tab and/or contact [reccs@colorado.edu](mailto:reccs@colorado.edu).

Learn more about  
RECCS

## Recent Publications

### [Transformative Experience in an Informal Science Learning Program about Climate Change](#)

This work, published in the Journal of Research in Science Teaching (JRST), presents a new approach to studying transformative educational experiences for informal learning experiences. The paper describes how the Transformative Experience Questionnaire was adapted for use in informal learning settings and demonstrates the transformative impacts of our informal science program for middle and high school students, the Lens On Climate Change.



### [Undergraduates' Graph Interpretation and Scientific Paper Reading Shift from Novice- to Expert-like as a Result of Participation in a Summer Research Experience: A Case Study](#)

After 9 weeks immersed in a research experience at CU Boulder, undergraduate students could analyze scientific papers and graphs more like experts, according to a new study led by the CIRES E&O. Published in SPUR.

The 2015 RECCS cohort learns about fieldwork from a research mentor in Boulder, CO.  
Photo: Amanda Morton/CIRES

# Upcoming E&O Events



**NNA Arctic Educator Fair**  
Teachers, join us on February 16th for the first annual Arctic Educators Fair!  
February 16, 2022  
[Link to register or learn more](#)



**The UC Berkeley Understanding Global Change Project and CLEAN**  
February 23, 4:00-5:00 PM (MT)  
Speaker: Jessica Bean, University of California Berkely  
[Link to register or learn more](#)



**Strategies for Integrating Climate Science into the Elementary Classroom**  
February 28, 4:00-4:30 PM (MT)  
Explore how to break down controversial topics and inspire curiosity  
[Link to register or learn more](#)



**Data Puzzles: The Tipping Point**  
March 3, 4:00-5:00 PM (MT)  
Engage with the latest Data Puzzle focused on the impact of rising temperatures on tundra ecosystems  
[Link to register or learn more](#)



**Teaching About Climate & Energy with CLEAN**  
March 3, 4:00-4:30 PM (MT)  
Speaker: Karin Kirk, Geology and Science Writer  
[Link to register or learn more](#)



**It's Us: Humans as agents of change within Earth's Climate System**  
March 9, 4:30-5:00 PM (MT)  
Speakers: Karin Kirk, Geologist and Science Writer  
[Link to register or learn more](#)



**Data Puzzles: Megadrought in the Colorado River Basin**  
March 10, 4:00-5:00 PM (MT)  
Featured Scientist: Seth Arens from the Western Water Assessment  
[Link to register or learn more](#)



**Teaching Climate Consequences with CLEAN: Motivate and Inspire, Don't Despair**  
March 14, 4:00-4:30 PM (MT)  
Speakers: Karin Kirk, Geologist and Science Writer  
[Link to register or learn more](#)



**Climate Solutions Workshop using the En-ROADS Decision Support Model**  
Speaker: Dr. Tamara Shapiro Ledley, Bentley Univesity  
March 22, 3:00-4:30 PM (MT)  
[Link to register or learn more](#)



**Climate and Mental Health: Acknowledging Grief and Inspiring Hope**  
Speaker: Dr. Courtney Welton-Mitchell, Colorado School of Public Health  
April 19, 4:00-5:00 PM (MT)  
[Link to register or learn more](#)



Keep up to date on opportunities & news from CIRES  
E&O

