


@ClimateEdTools

The Climate Teacher Ed Collaborative



Network Initiative Overview • January 2023



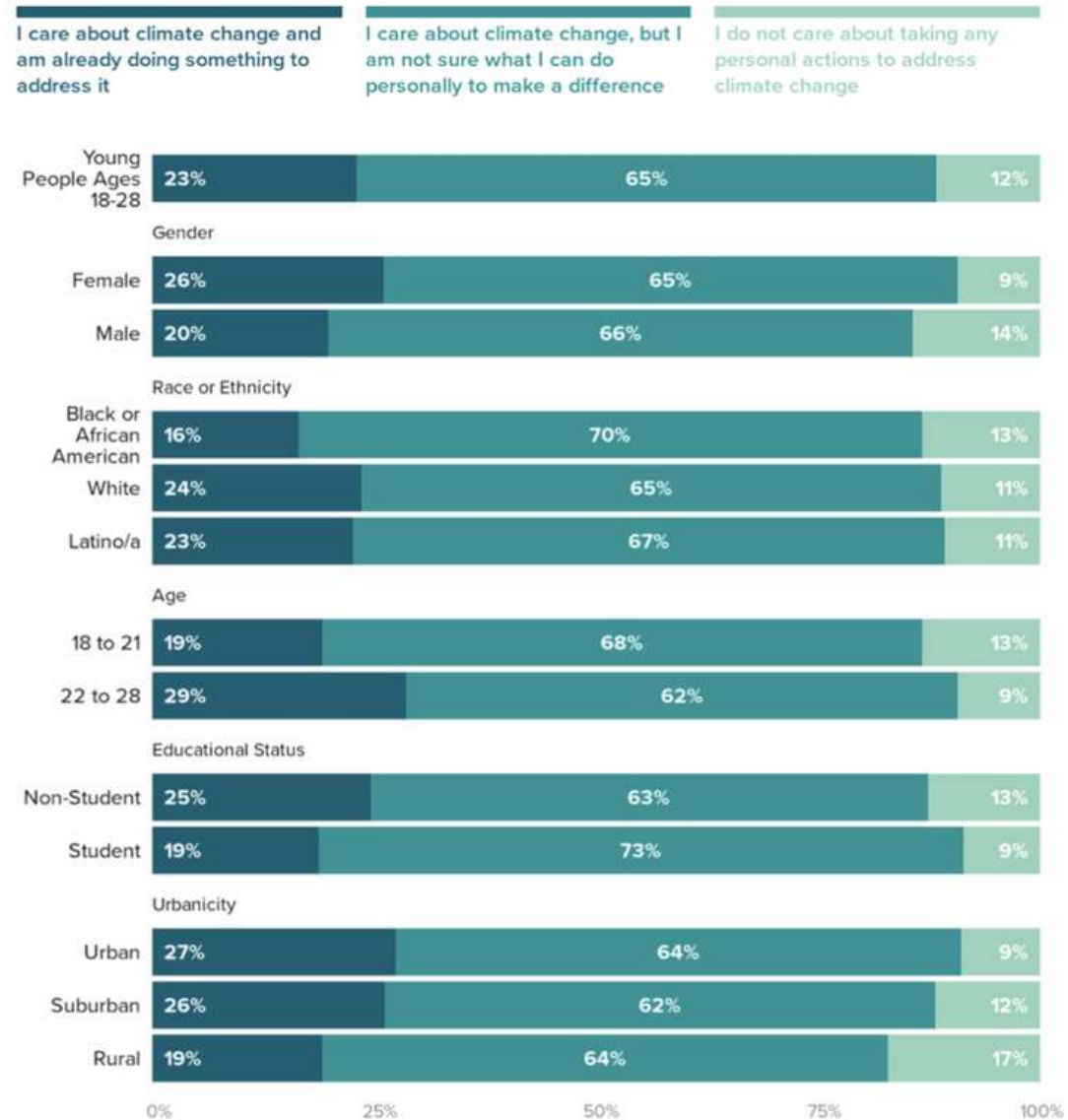
We need a societal shift in how we collectively understand and respond to climate change. Education is a vital institution to support this transformation.

“While a strong majority of young people (88%) care about the climate, roughly two-thirds (65%) are unsure of what they can do to personally impact climate change.”
Data For Progress
(11 May 2022)

Education has a vital role to play in closing the ‘climate action gap.’

While Concerned About Climate Change, Young People Aren't Sure How to Make a Difference

Which of the following best describes the actions you are taking in your own life to address climate change?



**CLIME
TIME™**

CLIMATE SCIENCE LEARNING



@ClimateEdTools

**The Climate
Teacher Ed
Collaborative**



ClimeTime: A State-level Professional Learning Network in Washington



A network engaging educators across Washington state in professional learning about equitable science education with a focus on climate science instruction. Since 2018, the ClimeTime network of state employees, community-based organizations, and Tribal Nations have worked with 26,000 teachers across Washington.



Learning about regenerative agriculture



Learning about Indigenous ways of knowing with members of Muckleshoot Tribal Nation



Learning about fuel load with mega forest fires

The Climate Teacher Ed Collaborative



A network building resources and capacity to teach about community climate justice projects and youth civic action in teacher education programs.

We have been convening the network and engaging in: (a) shared learning experiences & building community, (a) co-design of teacher ed OER, and (c) redesigning teacher ed courses.

The Climate Teacher Ed Collaborative

STEMteachingtools.org
[@ClimateEdTools](https://twitter.com/ClimateEdTools)



PROJECT SUMMARY

Education needs to dramatically build capacity to teach all students how to engage in scientifically and ethically informed civic action to address climate change. This collaborative network is building resources and capacity to teach about climate change in teacher education programs across Washington state and beyond. We are hosting network events, developing rich case studies of climate response, and engaging small collaborative teams in imagining, developing, and using open education resources (OER) that help future science teachers learn how to teach about *community climate justice projects*.

BACKGROUND

The Institute for Science + Math Education at the University of Washington is coordinating this WA state-funded collaborative in partnership with the Washington State Office of Superintendent of Public Instruction (OSPI). It builds on the success of the *ClimeTime Initiative* that has worked with over 22,000 inservice teachers since 2018. The OER resources will be published to the *STEM Teaching Tools* site and will be shared broadly.

COLLABORATIVE DESIGN APPROACH

Resources and capacity are being developed through an iterative design process that intentionally disrupts dominant power structures and centers the histories and interests of frontline communities impacted by climate change. Collaborative design teams will include expertise from a diverse set of participants including: teacher educators, frontline community leaders, climate youth activists, educators, community and Tribal Nation experts, climate scientists, and educational researchers. Network participants are supported to take up a shared commitment to just, thriving, and regenerative conditions for all living things in their contexts—in keeping with how we want all students to learn to respond to climate change. Please follow the work of the collaborative on Twitter and consider getting involved!

Contact us to learn more about this work...

Prof. Philip Bell pbell@uw.edu [@PhilipLBell](https://twitter.com/PhilipLBell)

Dr. Deb L. Morrison eddeb@uw.edu [@educatordeb](https://twitter.com/educatordeb)

University of Washington • College of Education



[Link to One Pager & Twitter Handle](#)

Participants in the Collaborative



Central Washington University: Adrienne Pinsoneault, Allyson Rogan-Klyve, Mark Oursland, Vanessa Hunt

Eastern Washington University: Kathryn Baldwin

Gonzaga University: Jonas Cox, Brian Henning, Karli Honebein, Kathy Nitta

Seattle University: Margit McGuire, Mark Roddy, Ana Rivero

University of Washington Bothell: Veronica McGowan

University of Washington Seattle: Cap Peck, Jessica Thompson, Mark Windschitl, Molly Shea

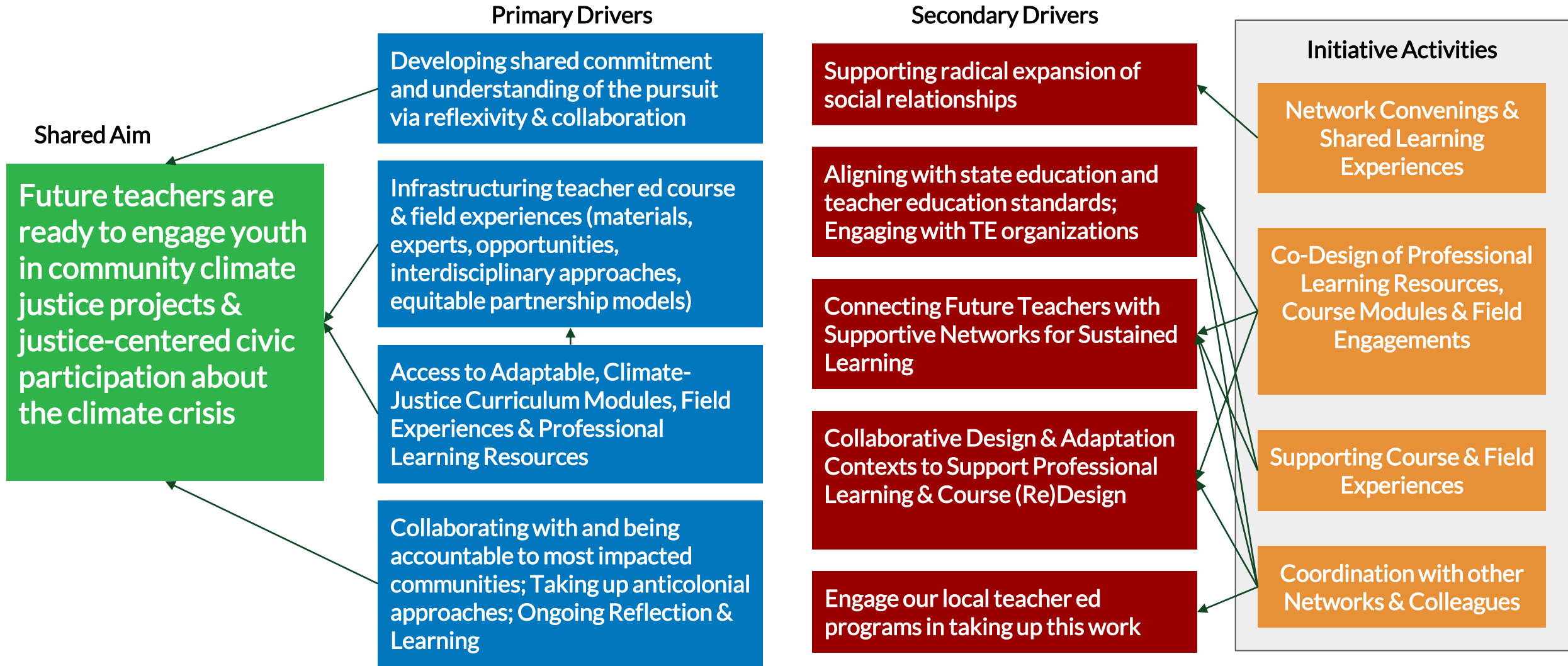
Washington State University, Vancouver: Charlotte Waters, Tamara Holmlund, Jessica Masterson

Washington State University, Pullman: Sarah Fick*

Western Washington University: Don Burgess

Individuals from OSPI, Islandwood, UC Berkeley, and University of Colorado Boulder

Climate Collaborative Shared Aim

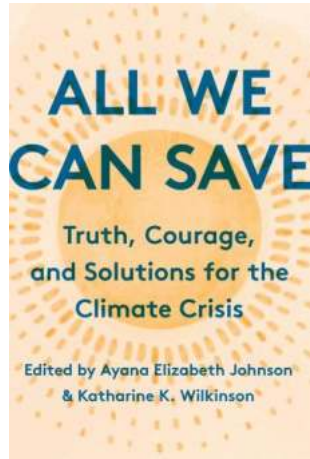


Collaborative Design Workgroups

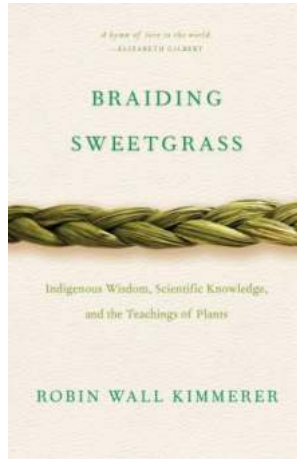


- **Arts, Education & Climate Justice:** creating an asynchronous online undergraduate course and an associated set of course modules
- **Elementary Integration:** convened local network to build capacity and develop integrated lesson approaches
- **Climate Teaching Support Tools:** generating thematic categories of tools and resources for adapting existing curricula for climate action
- **Rural Climate Ed:** identifying rural contexts, groups, and phenomena to integrate into teacher ed courses

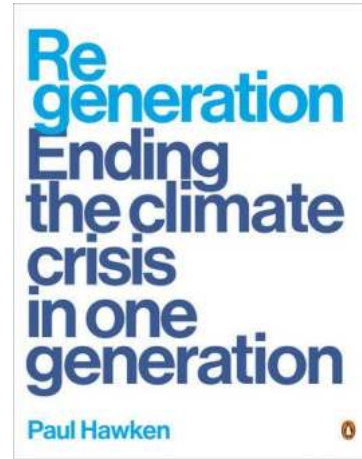
Climate Materials Provided for Use in Courses Across the Network



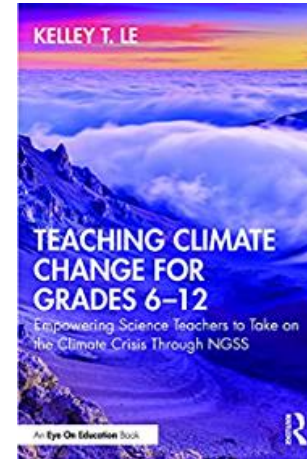
5 classroom sets
117 total copies



3 classroom sets
80 total copies



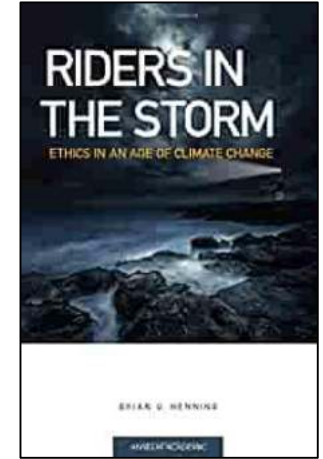
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98 total copies



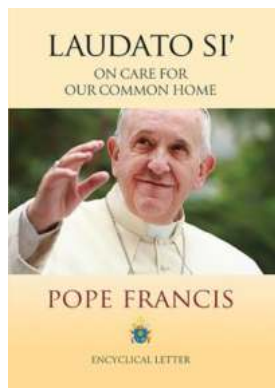
3 classroom sets
79 total copies



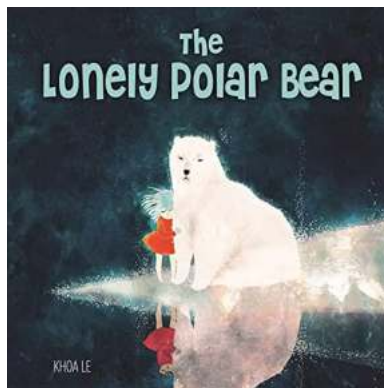
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32 total copies



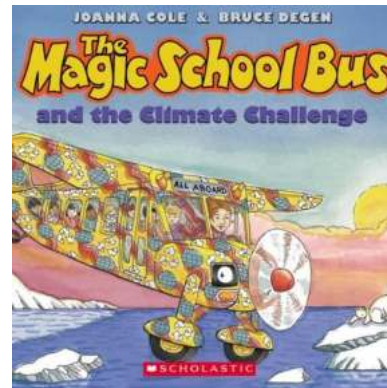
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17 total copies



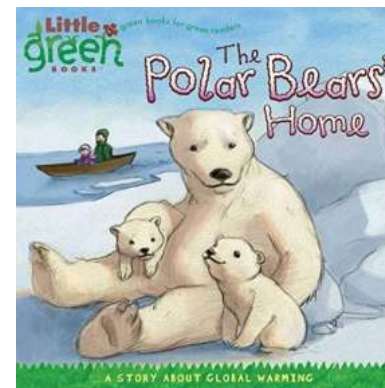
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12 total copies



1 classroom set
32 total copies



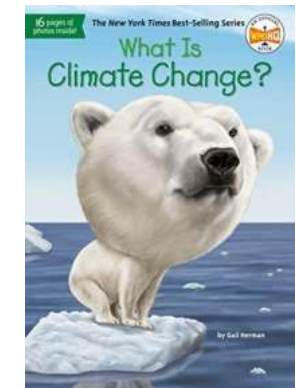
1 classroom set
32 total copies



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32 total copies



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32 total copies



1 classroom set
32 total copies

Climate Teacher Education Collaborative: Webinar Series



Climate Teacher Education
Free Webinar
Dr. Fikile Nxumalo & Pablo Montes
Feb 11th, 2022 • 11am-12pm Pacific
Pedagogical Commitments for Climate Justice Education
Register at: tiny.cc/Climate-Feb2022

Climate Teacher Education
Free Webinar
Drs. Kelley Le & Juan Manuel Rubio
March 11th, 2022 • 11am-12pm Pacific
Leveraging Environmental Justice to Unlock the Potential of Education
Register at: tiny.cc/Climate-March2022

Climate Teacher Education
Free Webinar
Lindsey Kirkland
April 8th, 2022 • 11am-12pm Pacific
It's Not Only About the Content: A Critical Exploration of the People, Culture, and Processes that Support Justice-Centered Climate Change Education
Register at: tiny.cc/Climate-April2022

Climate Teacher Education
Free Webinar
Tim Swinehart
May 13, 2022 • 11am-12pm Pacific
Teaching for Climate Justice and Student Action
Register at: tiny.cc/Climate-May2022

Climate Teacher Education
Free Webinar
Drs. Alexis Patterson Williams and Salina Gray
June 10, 2022 • 11am-12pm Pacific
(W)holistic Science Pedagogy and Climate Justice
Register at: tiny.cc/Climate-June2022

Climate Teacher Education
Free Webinar
David Segura, Daniel Morales-Doyle, Susan Nelson, Amy Levingston, and Karen Canales Salas
July 8, 2022 • 11am-12pm Pacific
Sustaining Community-School Relationships Around Shared Visions of Climate Justice and Science Teaching
Register at: tiny.cc/Climate-July2022

Climate Teacher Education
Free Webinar
Jason Foster and Ayesha T. Qazi-Lampert
August 12, 2022 • 11am-12pm Pacific
Investigating Environmental Racism in the High School Classroom
Register at: tiny.cc/Climate-August2022

Climate Teacher Education
Free Webinar
Nick Slie
September 9, 2022
11am-12pm Pacific
Using Theatrical Performance to Promote Climate Justice
Register at: tiny.cc/Climate-Sept2022

Webinars invite experts to share their work and supporting resources.

Each webinar becomes the kernel of an OER teacher ed lesson plan.

Webinars for 2023 are currently being finalized.

[Webinar Playlist](#)

Co-Design of Climate Ed Tools



We have been developing a set of OER lessons for climate teacher education. Lessons are developed to pair with each monthly webinar recording. Please let us know if you would like to co-design them with us.

STEM teaching tools Climate Education Tool #1

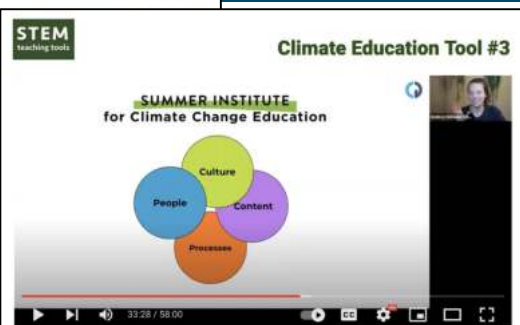


Centering Environmental Justice in Education (70 minutes of instruction)
Deb L. Morrison & Philip Bell (February 2022)

STEM teaching tools Climate Education Tool #2



Leveraging Environmental Justice to Unlock the Potential of Education (~3 hours of instruction)
Jeanne Norris, Kelley Lê, Juan Manuel Rubio (June 2022)



It's Not Only About the Content: People, Culture, and Processes within Climate Justice Education (~3 hours)
Jeanne Norris, Lindsey Kirkland, Kristen Poppleton, & Deb L. Morrison (December 2022)

STEM teaching tools Climate Education Tool #4



Teaching for Climate Justice and Student Activism (~4.5 hours)
Jeanne Norris, Tim Swinehart, Deb L. Morrison, and Philip Bell (December 2022)

STEM teaching tools Climate Education Tool #5



(W)holistic Science Pedagogy & Climate Justice
~4 hours of instruction
Dr. Alexis Patterson Williams, Dr. Salina Gray & Taiji Nelson (December 2022)

Climate Learning Resource Portal (on STEM Teaching Tools) [Slide Deck](#)



Teaching Tools for Science, Technology, Engineering and Math (STEM) Education

[HOME](#)

[TOOLS](#)

[PD MODULES](#)

[CLIMATE LEARNING](#)

[NEWS](#)

[NEWSLETTER](#)

[ABOUT](#)

Climate Learning Resources



Portal Includes:

- Practice Briefs
- Climate Assessments
- Webinar Recordings
- OER Teacher Ed Lesson Plans
- Practitioner Accounts
- Research Summaries
- Climate Justice Grad Seminar

<http://stemteachingtools.org/sp/climate-learning>



Back Pocket Slides



University of Washington Seattle Staff Overview



**Corey
Shih**

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(on leave until
April)



**Nancy
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Research
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**Taiji
Nelson**

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**Kelsie
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Scholar
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**Deb
Morrison**

Research
Scientist
eddeb@
uw.edu



**Philip
Bell**

Lead
pbell@uw.edu

Climate Teacher Ed Collaborative: Network Strategy & Timeline




- Three levels of work in the Collaborative:
 - **Small co-design workgroups** collaborate to infrastructure climate teacher ed and transform courses (ongoing / emergent)
 - **WA State Collaborative** will engage in shared learning & collaboration (monthly webinars; quarterly network meetings)
 - **Regional / national / global exchange** to sharing with and learn from other teacher ed networks (upcoming)
- Timeline & Funding
 - Initiative has fixed annual funding (\$300k/year, 0% indirects)
 - Individuals are participating based on interest and capacity. Significant funds pass through to members of the Network.

New STEM Teaching Tools



STEM TEACHING TOOL #90

Designing Climate Change Learning for Action




ACESSE

ACESSE Resource F: Guiding Instruction Based on the Range of Student Thinking Through Cognitive Formative Assessment



STEM TEACHING TOOL #89

Attending to Race and Identity in Science Instruction



STEM TEACHING TOOL #91

Why and how should I use crosscutting concepts to enhance my science instruction?



ACESSE

ACESSE Resource H: Attending to Student Interests and Community Priorities in Phenomena

[Playlist of PD Video Recordings](#)

Climate Ed Tool #1: Centering Environmental and Climate Justice in Education



STEM
teaching tools

Climate Education Tool #1



Centering Environmental and Climate Justice in Education (70 minutes of instruction)

Deb L. Morrison & Philip Bell (February 2022)

When Might You Use It: ([link](#))

To introduce teachers to the concept of **climate justice** and help them think about how to choose climate justice phenomena that fit into their curricular goals

Climate Ed Tool #2: Leveraging Environmental Justice to Unlock the Potential of Education



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Climate Education Tool #2

Webinar: Leveraging Environmental Justice to Unlock the Potential of Education

Lead in Santa Ana

Community Science Organizing Model

Source: ocej.org

Leveraging Environmental Justice to Unlock the Potential of Education (~3 hours of instruction)

Jeanne Norris, Kelley Lê, Juan Manuel Rubio, Deb L. Morrison & Philip Bell
June 2022

When Might You Use It: ([link](#))

To introduce teachers to the concept of **environmental justice** through a rich historical / scientific case study, to help them consider goals of science as an institution, and to support them in brainstorming how to select and incorporate local environmental justice phenomena into their curriculum

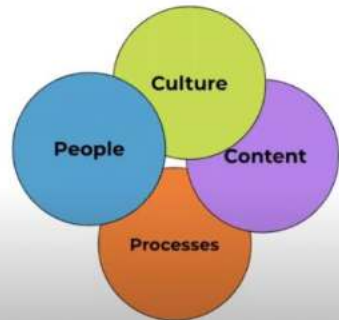
Climate Ed Tool #3: It's Not Only About the Content: People, Culture, and Processes within Climate Justice Education



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Climate Education Tool #3

SUMMER INSTITUTE
for Climate Change Education



It's Not Only About the Content: People, Culture, and Processes within Climate Justice Education (~3 hours)

Jeanne Norris, Lindsey Kirkland, Kristen Poppleton, & Deb L. Morrison
December 2022

When Might You Use It: ([link](#))

To ask teachers to **explore climate justice stories** of themselves and others, to look at an organizational model of community-centered climate justice partnership, and to consider how to build **their own climate justice network**

Climate Ed Tool #4: Teaching for Climate Justice and Student Action



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teaching tools

Climate Education Tool #4



Teaching for Climate Justice and Student Action (~4.5 hours)

Jeanne Norris, Tim Swinehart, Deb L. Morrison, and Philip Bell
December 2022

When Might You Use It: ([link](#))

To help teachers learn about engaging students in different forms of climate action and **activism centered on hope**, to learn how to **navigate educational systems** when doing climate justice work, and to learn about teacher-led curricular efforts about climate

Climate Ed Tool #5: (W)holistic Science Pedagogy & Climate Justice



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teaching tools

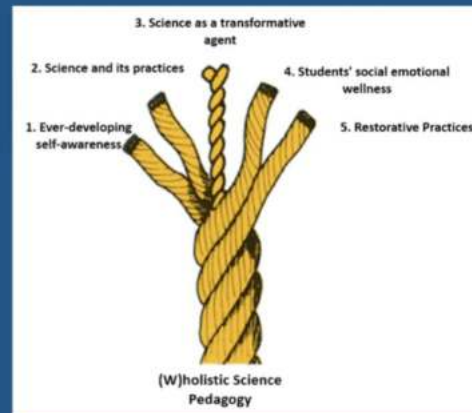
Climate Education Tool #5



What is the (W)holistic Science Pedagogy?

A teacher and student centered approach to teaching science that requires **5 commitments** from the teacher:

1. A commitment to an ever-developing *self awareness*
2. A commitment to *science and its practices*
3. A commitment to *science as a transformative agent*
4. A commitment to their *students' social emotional wellness*
5. A commitment to utilize *restorative practices*



(W)holistic Science Pedagogy & Climate Justice

~4 hours of instruction

Dr. Alexis Patterson Williams, Dr. Salina Gray, Taiji Nelson & Philip Bell
December 2022

When Might You Use It: ([link](#))
To help teachers work to **adopt a coherent pedagogical approach** that supports just and liberatory science education; to learn about climate justice, social-emotional learning, and the UN Sustainable Development Goals

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Climate Ed Tools:
New climate resources
for teaching and
learning about climate
& environmental justice



Philip Bell @PhilipLBell (on Twitter)
College of Education • University of Washington

[Twitter](#)
[Announcement](#)



Climate Ed Tools: Kinds of Resources

1. Practice Briefs on Climate Teaching & Learning
2. Webinars on Climate & Environmental Justice Teaching
3. OER Teacher Ed Lessons on Climate & Environmental Justice Teaching
4. 3D Assessment Item Clusters about Climate Phenomena
5. Climate & Environmental Justice Teaching Images of Practice
6. Research Briefs on Climate Teaching
7. OER Graduate Course on Climate & Environmental Justice

STEM Teaching Tools: Educator Learning Resource Collection

STEM Teaching Tools are short, two-page briefs on particular topics in education. We have worked with collaborators to develop STEM Teaching Tools on the following themes:

- Why Teach Climate Change?
- Pedagogy with a Foundation of Justice and Ecological Caring
- Selecting Justice-Centered, Local Anchor Phenomena
- Focusing Climate Change Learning on Solutions
- Building Partnerships with Scientists, Families, and Other Community Members

The Climate Teacher Ed Collaborative

A network building resources and capacity to teach about community climate justice projects and youth civic action in teacher education programs.

We have been convening the network and engaging in: (a) shared learning experiences & building community, (a) co-design of teacher ed OER, and (c) redesigning teacher ed courses.

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Climate Teacher Education Collaborative: Webinar Series

Webinars invite experts to share their work and supporting resources.

Each webinar becomes the kernel of an OER teacher ed lesson plan shared on STEM Teaching Tools.

[Webinar Playlist](#)

OER Teacher Ed Lessons (in development for each webinar)

Climate Education Tool #1: Centering Environmental and Climate Justice in Education (20 minutes of instruction)

Climate Education Tool #2: Leveraging Environmental Justice to Unlock the Potential of Education (~3 hours of instruction)

ClimeTime: A State-level Professional Learning Network in Washington

A network engaging educators across Washington state in professional learning about equitable science education with a focus on climate science instruction. Since 2018, the ClimeTime network of state employees and community-based organizations have worked with 26,000 teachers.

3D Assessment Item Clusters about Climate Phenomena

In collaboration with the [ClimeTime Initiative](#), we have created a [shared Google Drive folder](#) with assessments designed to support climate change science teaching and learning. These assessments are intended to support educators in understanding the nature of equitable assessment practices in the context of climate science learning across a range of grade levels and topics. The [ClimeTime Initiative Assessment Project](#) has further details.

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ClimeTime Open Education Resources for Curriculum & Professional Learning

[Professional learning and instructional materials from ClimeTime](#) are published as open education resources (OER)

Climate & Environmental Justice Teaching Images of Practice (teacher articles)

We have worked with educators and researchers to craft a series of articles that highlight images of instructional practice. They span elementary, middle, and high school contexts. Instruction in classrooms, outdoors, and in community settings. They all center climate and environmental justice.

Research Briefs on Climate Teaching

The *Relating Research to Practice Project* developed [14 research briefs to summarize and clarify research on communicating climate change](#). Access briefs on topics like [trusted scientific sources](#), the [relationship between beliefs and action](#), and [using story in science communication](#).

OER Graduate Course on Climate & Environmental Justice in Education

How can we learn to create a more just world where all humans and other creatures can thrive? Philip Bell and Nancy Price taught a course at the University of Washington on climate and environmental justice in education. The course overview, readings, resources, and products can be accessed for free.

Explore how themes of ecological care, multispecies wellbeing, and equity relate to climate and environmental education. Check out the graduate seminar online here, and join the inquiry on Twitter at [@UWClimateEd](#).

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Information Gather & Discussion



Cap and I would love to gather input from you about climate teacher ed work using [this Google document](#)...

- What is your program currently doing around climate and environmental justice issues?
- What would be helpful to your program in preparing pre-service teachers to engage students in climate learning and action?

And then engage in a group discussion of possibilities...

- How might we work together to support programs in engaging these issues?