The Lawrence Hall of Science

UNIVERSITY OF CALIFORNIA, BERKELEY

Using "Science as a Human Endeavor" to Foster Diversity, Equity, and Inclusion in Secondary Science Classrooms
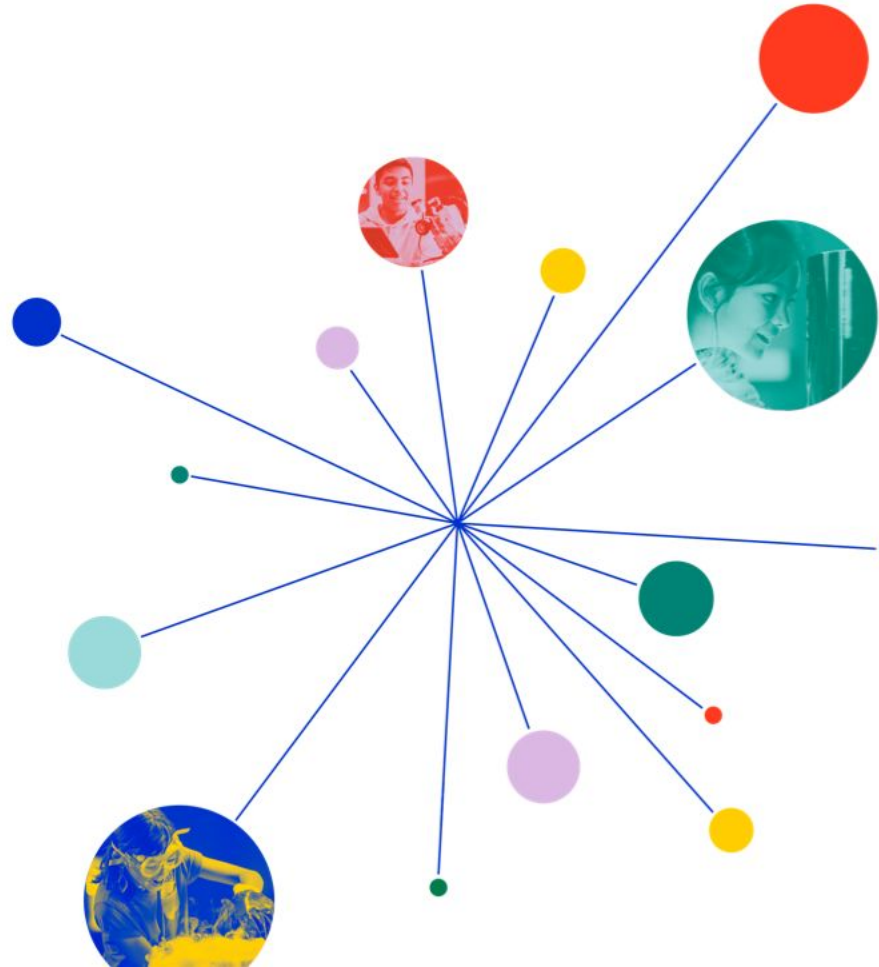
Ben Koo, ben.koo@berkeley.edu
Kelly Grindstaff
Manisha Hariani
Science Education for Public Understanding Program

lawrencehallofscience.org

Science Education for Public Understanding Program

Mission:

To foster student agency and engagement in science by developing and supporting issue-oriented, evidence-driven, and hands-on curriculum that is relevant and accessible, and positions teachers for classroom implementation that is equitable and inclusive.

- Curriculum Development
  - Science and Global Issues: Biology high school program
- Teacher Professional Learning
- Research
  - NGSS-aligned Summative Classroom Assessments of Three-Dimensional Learning

Today, 2:20-3:20pm, International Ballroom A

NGSS Understandings about the Nature of Science

Science is a Human Endeavor

- Science is a result of human endeavors, imagination, and creativity.

- Individuals and teams from many nations and cultures have contributed to science and to advances in engineering.

- Scientists' backgrounds, theoretical commitments, and fields of endeavor influence the nature of their findings.

- Science and engineering are influenced by society and society is influenced by science and engineering.

**Leveraging and building on this crosscutting concept
for inclusion in the high school biology classroom**

Science as a Human Endeavor Resource Page

Goal: Create a resource and framework to convey science as a human activity:

- Done by people from all across the world and varying backgrounds
- To answer questions and address challenges important to them.
- That youth and their communities can participate in

Guiding Principles:

- Acknowledge the value and importance of diverse perspectives and experiences to scientific advancement
- Emphasize scientists as members of society and their communities
- Uphold an inclusive narrative about who can engage in science and engineering

Letter to Students

If someone asked you the question, "What is science?," how would you answer?

"Science is a way of exploring and understanding the natural world."

"Science and engineering are human activities. People from all over the world engage in science and engineering and use scientific information and technological solutions."

"Science and engineering can be done by people of all ages and backgrounds, including people like you."

Science as a Human Endeavor Resource Page

https://tinyurl.com/science-human-endeavor

Introducing… Dr. Nicola Smith and her story

Marine Ecologist

Communities engaging in scientific problem-solving

FISHERIES IN MAINE RALLY TO REDUCE THEIR CARBON FOOTPRINT AND INCREASE SUSTAINABILITY

SUSTAINABLE SEAFOOD BUSINESS, CARBON FOOTPRINT ANALYSIS

Fishing communities and seafood suppliers in Maine who depend on the ocean for their livelihood have seen the effects of climate change firsthand, as warming ocean temperatures significantly affect their catches.

LOCATION

Portland, ME

PROJECT STATUS

Conversion to renewable energy complete;

Invite your students to participate in community science

You may wish to participate in an already existing community (or citizen) science project, like one of the projects linked here.

CoCoRaHS: share your measurements of backyard precipitation

Using *Science as a Human Endeavor* Resources

- Use the Letter to Students as an introduction to your science course/year
- Use a scientist story to start a lesson activity or unit
- Use a community spotlight/profile to highlight ways that communities are engaging in science to address local challenges
- Invite your students to participate in science now (not just in the future!) through community/citizen science as an extension or class activity

Selected web-based resources

Scientist Stories and Profiles

- [I Am A Scientist](#)
- [Scientist Spotlights](#)

Community Spotlights

- [AAAS How We Respond](#)

Community/Citizen Science

- [SciStarter](#)
- [GLOBE.gov](#)

Questions?

Ben Koo, ben.koo@berkeley.edu

Kelly Grindstaff, kelly.grindstaff@berkeley.edu

Manisha Hariani, mhariani@berkeley.edu

Slides can be accessed at:
tinyurl.com/SEPUP-NSTA-2023