

2023 Legislative Session Recap
May 16 STEM Education
Innovation Alliance

Heather Hudson, WSAC
Jayne Shoun, Washington STEM

2023 LEGISLATIVE SESSION: OVERVIEW

Session Timeline

- January-April legislative session (105 days)
- **Session began – January 9**
- House of Origin
 - Feb. 17 – Policy Committee
 - Feb. 24 – Fiscal Committee
 - March 8 – House of Origin Floor
- Opposite House
 - March 29 – Policy Committee
 - April 4 – Fiscal Committee
 - April 12 – Opposite House Floor
- **Sine Die – April 23**

Governor Inslee called a special session May 16

Session Highlights

- Biennial Budget
 - Operating
 - Transportation
 - Capital
- Democrats hold majority in both the House and Senate
 - Number of freshman lawmakers from the 2022 General Election
- Over **2,156** bills introduced, only **485** passed
 - Governor Inslee is hosting bill signings

WASHINGTON STEM LEGISLATIVE PRIORITIES FRAMEWORK

Washington STEM can support a proposal if all the following questions are answered affirmatively:

1. Is the proposal primarily focused on students of color, rural students, students living in poverty, and girls?
2. Does the proposal:
 - a. Enable access to high-quality early learning, with a focus on early math and STEM education? OR
 - b. Enable access experience in culturally relevant, high-quality K-12 STEM learning? OR
 - c. Enable more students to be employed in high-demand, family sustaining careers?
3. Does the proposal enable transparent, timely, and clear data sharing about the Washington education system and workforce?
4. Does the proposal support increased educational outcomes and credential attainment among priority populations?
5. Is there evidence and research that suggests that this proposal is the right thing to pursue? (please include references).
6. Will the proposal advance racial equity by contributing to closing the opportunity gap?
7. Does the proposal include input provided by a diverse set of stakeholders and members of communities impacted by the proposed policy? Can we advocate for an ongoing feedback loop?
8. Is Washington STEM in a position to successfully act on or influence this issue?
9. Is the proposal viable in the upcoming session? Does it have policy maker support – bipartisan and bicameral?
10. Are we clear about what needs to happen legislatively to move this issue forward?
11. Is there a risk to not including the proposal in our support agenda?

EARLY LEARNING LEGISLATION

- ▶ **SB 5225: Increasing access to the working connections child care program. (Sen. Claire Wilson, 30th LD)**
 - ▶ Increases access by modifying the income threshold and requirements expanding WCCC for more families, undocumented families, and families in the therapeutic court system
- ▶ **HB 1525: Concerning eligibility for working connections child care benefits for persons participating in state registered apprenticeships. (Rep. Mary Fosse, 38th LD)**
 - ▶ Expands eligibility for WCCC program benefits to apply to persons in the first 12 months of a state registered apprenticeship.
- ▶ **HB 1199: Addressing licensed child care in common interest communities. (Rep. Tana Senn (41st LD)**
 - ▶ Prohibits a common interest community association (HOA) from prohibiting, unreasonably restricting, or limiting the use of a unit as a licensed family home child care or as a licensed child day care center.
- ▶ **SB 5316: Concerning background check and licensing fees for programs administered by the department of children, youth, and families. (Sen. Claire Wilson, 30th LD)**

EARLY LEARNING BUDGET INVESTMENTS

Working Connections Reimbursement Rate Increase SB 5225: Working Connections Child Care Expansion HB 1525: Increased Access to Working Connections Child Care (apprenticeships)	\$218.849 M \$13.329M \$2.7M
ECEAP Expansion Early ECEAP ECEAP Slot Rate Increase ECEAP Complex Needs Fund Child Care Complex Needs Fund	\$19.3M \$4.785M \$50.059M \$5.787M \$15.396M
Tribal Early Learning Grants Equity Grants	\$7.5M \$5.248M
Early Learning Facilities Grants	\$47.05M
Early Learning Data Visualization Proviso Child Care Access and Living Wage Proviso	\$300K \$533K

More early learning budget investments from Start Early Washington:
<https://www.startearly.org/app/uploads/2023/04/Final-Adopted-State-Budget-2023.pdf>



K-12 LEGISLATION

- ▶ **SB 5048: Eliminating College in the High School Fees (Sen. Mark Mullet, 5th LD)**
 - ▶ The bill eliminates all fees, funding \$300 per student up to per course maximums.
 - ▶ College in the High School is one form of dual credit that is taught within the high school setting. Students do not travel to a campus for instruction but take college level courses in their high school-this form of dual credit is open to students in grades 9-12
- ▶ **HB 1316: Expanding access to dual credit programs (Rep. Dave Paul, 10th LD)**
 - ▶ The bill expands a successful Summer Running Start Pilot program to be statewide.
- ▶ **SB 5243: Concerning High School and Beyond Planning (Sen. Lisa Wellman, 41st LD)**
 - ▶ The bill provides guidance to have a statewide digital platform for the HSBP
- ▶ **SB 5702: Advancing equity in programs for highly capable students. (Sen. T'wina Nobles, 28th LD)**
- ▶ **HB 1238: Providing Free School Meals for All (Rep. Marcus Riccelli, 3rd LD)**
- ▶ **HB 1658: Authorizing public high school students to earn elective credit for paid work experience. (Rep. Clyde Shavers, 10th LD)**
- ▶ **HB 1308: Concerning high school graduation pathway options. (Rep. Monica Stonier, 49th LD)**

K-12 BUDGET INVESTMENTS

<p>SB 5048: Elimination of College in the High School Fees</p>	<p>SBCTC: \$7.74M UW: \$3.285M EWU: \$5M CWU: \$8.06M</p>
<p>HB 1316: Access to Dual Credit (Summer Running Start)</p>	<p>OSPI: \$1K</p>
<p>SB 5243: Concerning High School and Beyond Planning</p>	<p>OSPI:\$168K</p>
<p>Computer Science Grants Climate Science Grants Dual Language Grants (including Tribal Language Grants) LASER (Leadership in Science Education Reform)</p> <p>Grant program for CBOs collaborate with school districts to support learning recovery and acceleration Grants to school districts to expand CTE graduation pathway options, including career-connected learning opportunities.</p>	<p>OSPI: \$2M OSPI: \$6M OPSI:\$6.51M OSPI: \$1M</p> <p>OSPI: \$7.91M</p> <p>OSPI: \$2.3M</p>
<p>HB 1238: Providing Free School Meals</p>	<p>OSPI: \$23.449M</p>
<p>HB 1436: Funding special education.</p>	<p>~\$400M</p>

COLLEGE AND CAREER PATHWAYS LEGISLATION

- ▶ **SB 5079: Concerning the date by which tuition operating fees are established (Sen. John Braun, 20th LD)**
 - ▶ Sets tuition operating fees for resident undergraduate students by October 1st of each year for the following academic year.
- ▶ **HB 1176: Developing opportunities for service and workforce programs to support climate-ready communities. (Rep. Vandana Slatter, 48th LD)**
 - ▶ Enacts the Washington Climate Corps Network to support and grow climate-related service opportunities for young adults and veterans. Establishes Clean Energy Technology Workforce Advisory
 - ▶ Committee and directs WTB to evaluate clean energy technology workforce needs.
- ▶ **HB 1013: Establishes the Regional Apprenticeship Program (Rep. Jacquelin Maycumber, 7th LD)**
 - ▶ Regional Apprenticeship Preparation Pilot Program (Program) with five program sites located statewide- three sites west of Cascades, two east of the Cascades.
 - ▶ Extends the Work Integrated Learning Advisory Committee (WILAC)

COLLEGE AND CAREER PATHWAYS LEGISLATION

- ▶ **HB 1232: Enhancing the College Bound Scholarship Program (Rep. Steve Bergquist, 11th LD)**
 - ▶ The 2.0 GPA is no longer required for College Bound Students enrolling in a two-year college
- ▶ **HB 1559: Establishing the student basic needs at public postsecondary institutions act. (Representative Debra Entenman, 47th LD)**
 - ▶ Creates Hunger-Free and Basic Needs Campus Strategic Plans and student basic needs survey. Enacts a Free and Reduced Price Meals Pilot Program on CTC campuses.
- ▶ **SB 5593: Improving equity in the transfer of student data between K-12 schools and institutions of higher education (Sen. Marko Liias, 21st LD)**
 - ▶ Allows for public, four year institutions and CTCs to access student directory information for college awareness.
- ▶ **SB 5582: Reducing barriers and expanding educational opportunities to increase the supply of nurses in Washington. (Sen. Jeff Holy, 6th LD)**

COLLEGE AND CAREER PATHWAYS BUDGET INVESTMENTS

<p>Regional Challenge Grants Bridge Grants Washington Student Loan Program</p>	<p>WSAC: \$16M \$55m \$91m</p>
<p>Career Connect Washington: Career Connected Learning Grants (Regional Networks/Intermediaries) Career Connected Learning Coordinators CCL Tribal Liaison Career Prep and Launch Equipment Funding</p>	<p>OFM: \$14.51M OSPI: \$2.7M OSPI: \$300K SBCTC: \$5M OSPI: \$4M</p>
<p>HB 1176: Climate Ready Communities HB 1013: Regional Apprenticeship Pilot Program HB 1559: Basic needs at public postsecondary institutions act</p>	<p>OFM: \$7.545M OPSI: \$4M SBCTC: \$5.236M</p>
<p>Investments in Nursing SB 5582 Competitive Grant Program Building the Long term care workforce Behavioral Healthcare loans/conditional scholarships</p>	<p>OPSI: \$4.170M WTB: \$3.4M ~ \$10M</p>

COLLEGE AND CAREER PATHWAYS BUDGET INVESTMENTS

<p>Washington State MESA</p>	<p>SBCTC: \$4.41M UW: \$1M EWU: \$500K</p>
<p>FAFSA Completion: Partner with a nonprofit in Tacoma for a comprehensive study on the feasibility and potential impacts on postsecondary enrollment of a policy of universal free application for federal financial aid (FAFSA) completion.</p>	<p>WSAC: \$100K</p>
<p>Regional STEM: Provided solely for the West Sound STEM Network to increase STEM activities for students in school and after school and to develop industry education pathways in high demand sectors.</p>	<p>OSPI: \$250K</p>
<p>CTE Dual Credit Pilot: Administer a pilot program to increase career and technical education dual credit participation and credential attainment in professional technical programs</p>	<p>SBCTC: \$700K</p>



Apprenticeship Building America (ABA) Overview

May 16th, 2023
STEM Alliance Meeting

Career Connect Washington (CCW) is a statewide movement to create a high-quality career connected learning (CCL) system

In May 2017, Governor Inslee charged CCW to find ways for young people to explore, prepare, and participate in “**real world**” **employer-based learning opportunities** as a way to increase life fulfillment and self-sufficiency, advance more students past high school with a degree or credential, and improve the state’s economy

CCW scope:

- Serve young people through age 29
- Introduce students early (elementary and middle school) to opportunity around them
- Build off of existing great CCL opportunities in K-12, postsecondary (2- and 4-year)
- Learn from and grow Registered Apprenticeships as a critical player in the system

In spring 2019, HB 2158 (WEIA) was passed by the Legislature, which codified our state’s 3-step CCL framework, and provided funding to implement CCW statewide through competitive, performance oriented, grants

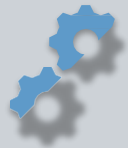
CCW's Vision is to ensure equitable CCL access and outcomes for Washington students



Every young adult in Washington will have multiple pathways toward economic self-sufficiency and fulfillment, strengthened by a comprehensive state-wide system for career connected learning.

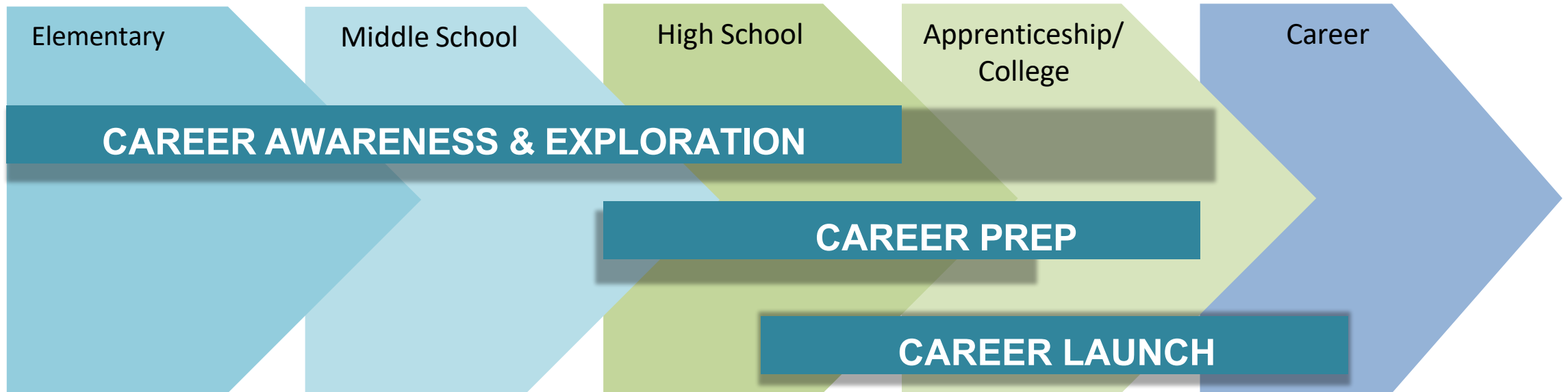


In order for every young adult to succeed, we must intentionally focus on populations furthest from opportunity especially students of color, Indigenous students, low-income students, rural students, and students with disabilities.



We acknowledge that systemic racism has held students back, especially Black and Indigenous students, and we aspire to build an anti-racist system for career connected learning.

Career Connected Learning Continuum



Awareness & Exploration

- Job shadows
- Career fair
- Worksite tours
- Informational interviews

Career Prep

- Job site industry mentorship
- Pre-apprenticeship
- Internship

Career Launch

- Registered apprenticeship/internship
- Work-based course (dual credit)
- College or industry credential

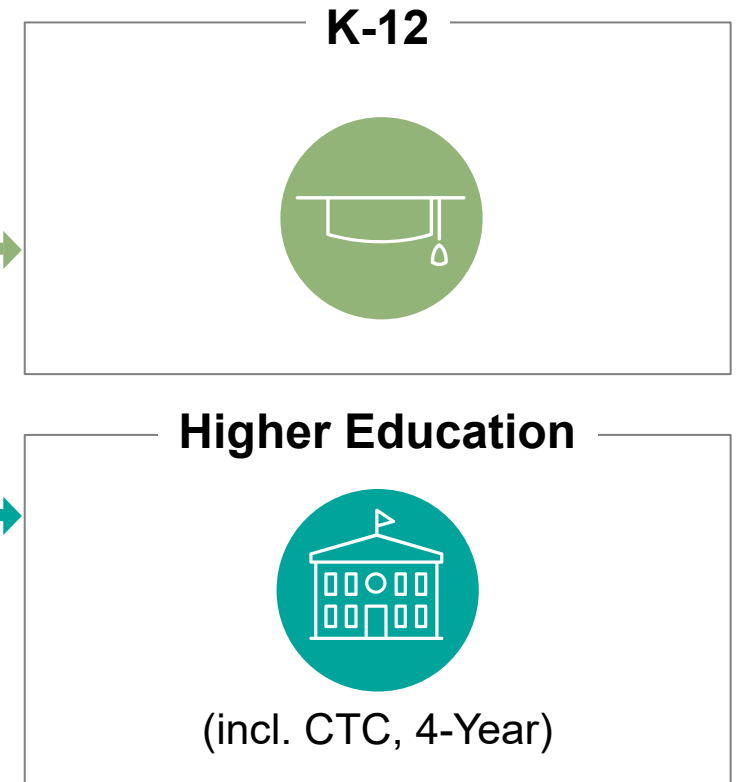
*Represents the general sequence of CCL components in an education pathway. Exit points in Career Prep and Career Launch may be High School, College, or Apprenticeship.

This vision is achieved by connecting employers, labor, education, and government to create and scale career connected learning opportunities

Employment



Education

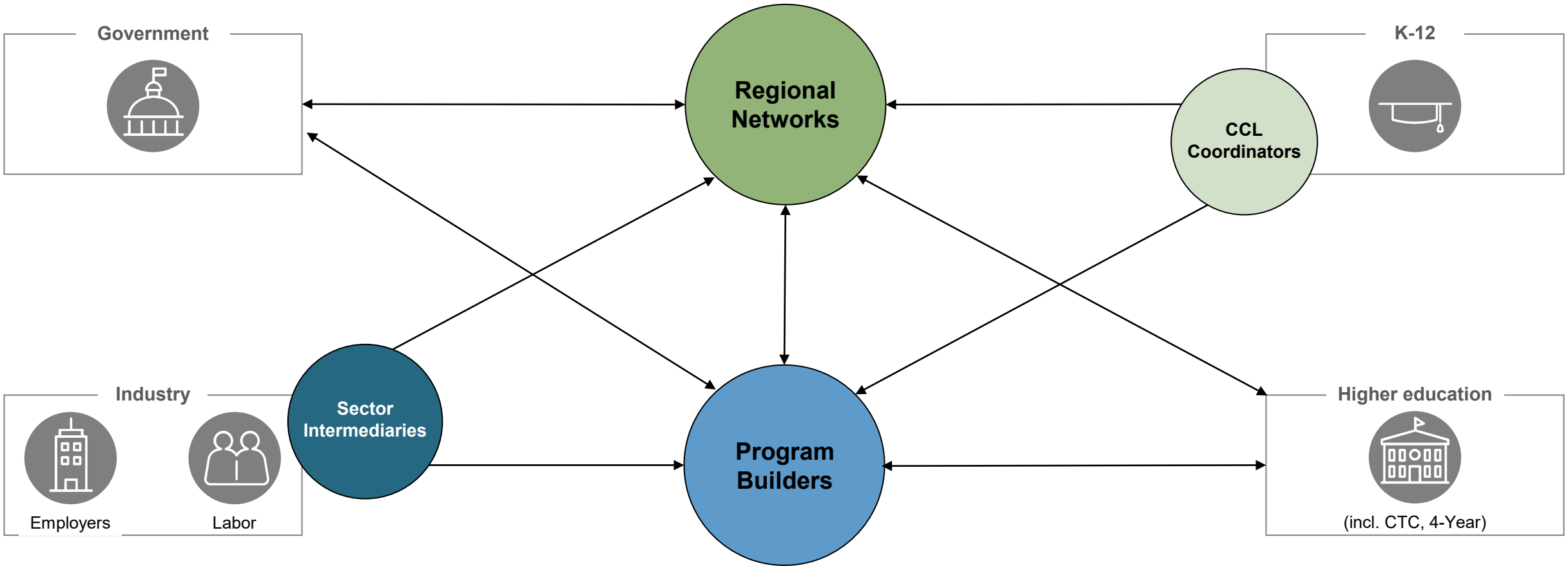


CCW can provide the connective tissue to grow CCL programs state-wide

CCW Network of Partners

Employment

Education



Apprenticeship Building America (ABA) Grant

Investing in Washington's Apprenticeship Community

Through CCW in Washington, we've invested successfully in expanding apprenticeship over the past four years and have grown more than **30 programs** across Washington, creating more pathways to middle class jobs through apprenticeship.

CCW, ESD, L&I, and our partners worked together to apply for the **Apprenticeship Building America** grant (ABA) from US Labor to **expand registered apprenticeship** and **recognized pre-apprenticeship programs** in high-growth and high-demand industry sectors.

This grant was awarded in 2022 and ESD is issuing this RFP to award **\$3,751,236.00** to Program Builders ready to build and expand programs statewide.

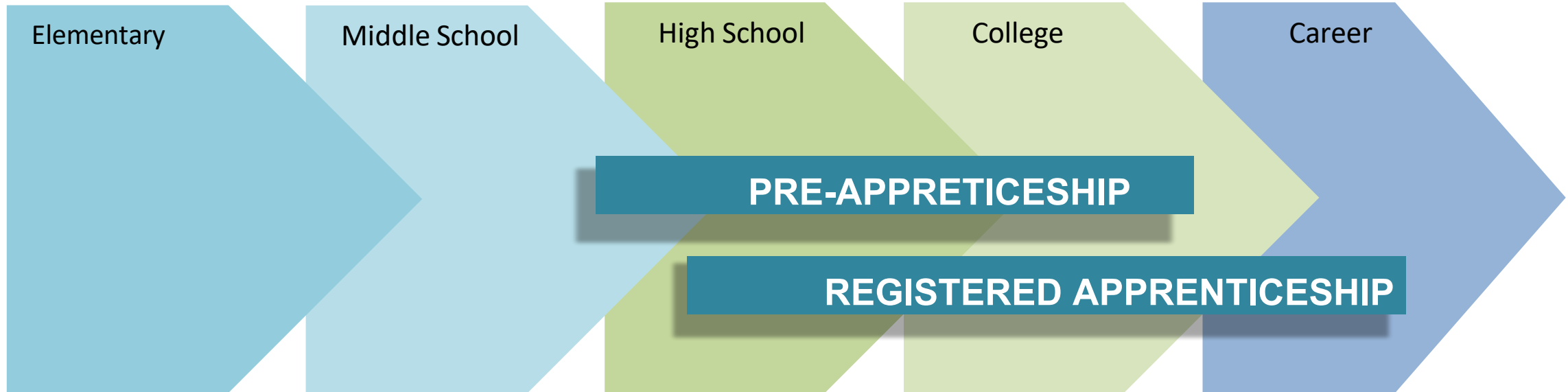
The ABA grant program aims to increase equity and accessibility in program delivery to apprentices, and to bring the Registered Apprenticeship model to more industries.

Goals for expanding registered apprenticeship programs through ABA

In partnership with Career Connect Washington, ESD will work side-by-side with the Department of Labor & Industries, the Workforce Training & Education Coordinating Board, the Washington Student Achievement Council, and other CCW partner agencies to achieve the following goals over the next four years:

- Increase the number of **registered apprenticeship** and recognized **pre-apprenticeship** programs in target industries;
- Create or expand **22 registered apprenticeship programs** to benefit **300 apprentices**;
- Create or expand **11 recognized pre-apprenticeship programs** to benefit **400 pre-apprentices**;
- Increase the **diversity** of apprentices and pre-apprentices;
- Promote **equitable access** to high-quality careers for communities furthest from opportunity; and
- Increase employer awareness of and commitment to programs by enlisting **48 new employer sponsors**.

Apprenticeship Continuum



Pre-Apprenticeship

- Preparation for entry into existing RAP
- May or may not include wages or stipend

Registered Apprenticeship

- Paid on-the job training under supervision of journey-level professional
- Related classroom instruction
- Professional credential awarded

Contacts

Andrew Clemons, *Career Connect Washington Manager*, Washington State Employment Security Department andrew.clemons@esd.wa.gov

Lynda Best, *Career Connect Washington Sector Strategy Manager*, Washington State Employment Security Department lynda.best@esd.wa.gov

Katherine Lechner, *Career Connect Washington Sector Strategy Manager*, Washington State Employment Security Department katherine.lechner@esd.wa.gov



CAREER
CONNECT
WASHINGTON

Washington State

STEM Education Innovation Alliance



2023 STEM Education Report Card

Daryl Monear

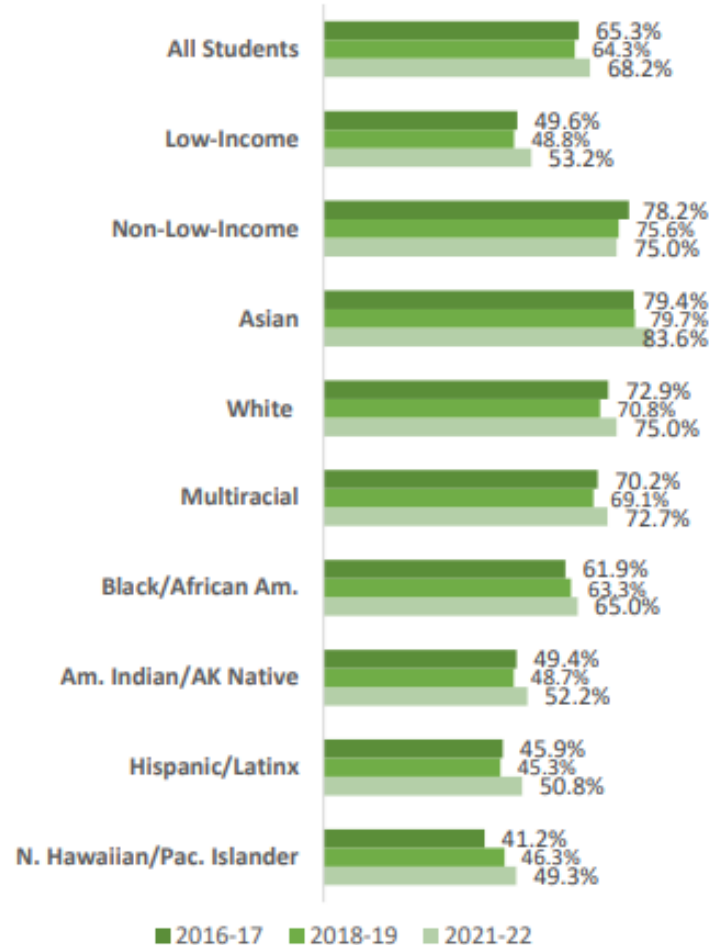
Associate Director of Research

Washington Student Achievement Council

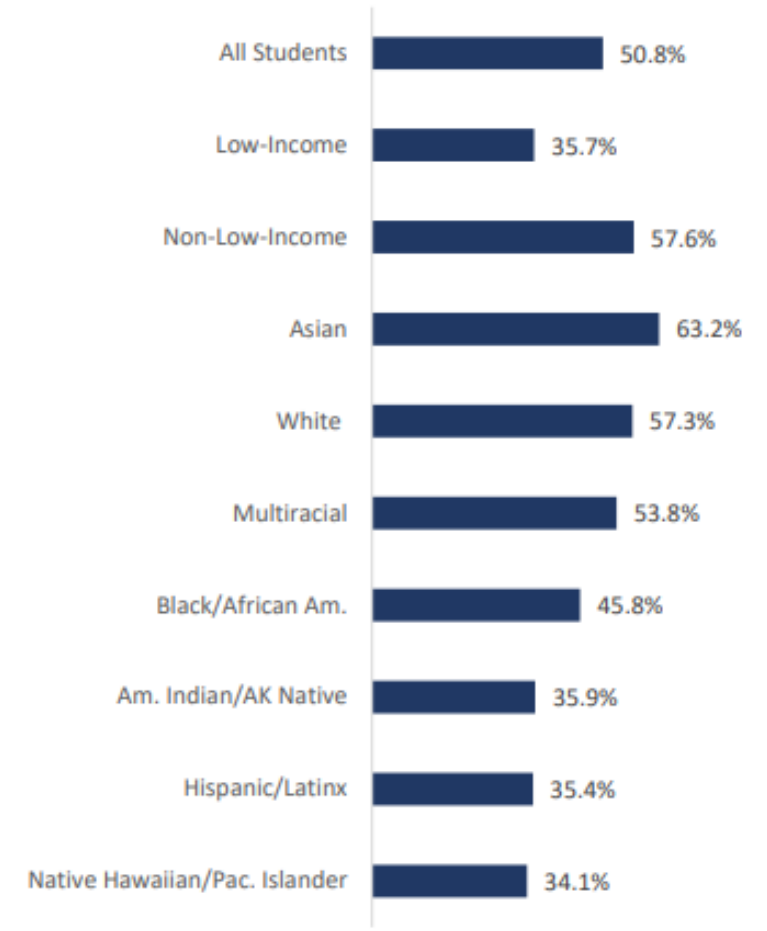
Kindergarten readiness is a persistent area of concern

- A little over 68 percent of incoming kindergarteners demonstrated “kindergarten readiness” in math among students assessed by WaKIDS in 2021-22.
- In 2021–22, a little over 50.8 percent of students were kindergarten ready in all six developmental and learning areas.
- However, readiness is not evenly spread across racial and ethnic groups.

Kindergarten Readiness in Math
by Race/Ethnicity
2017-2022



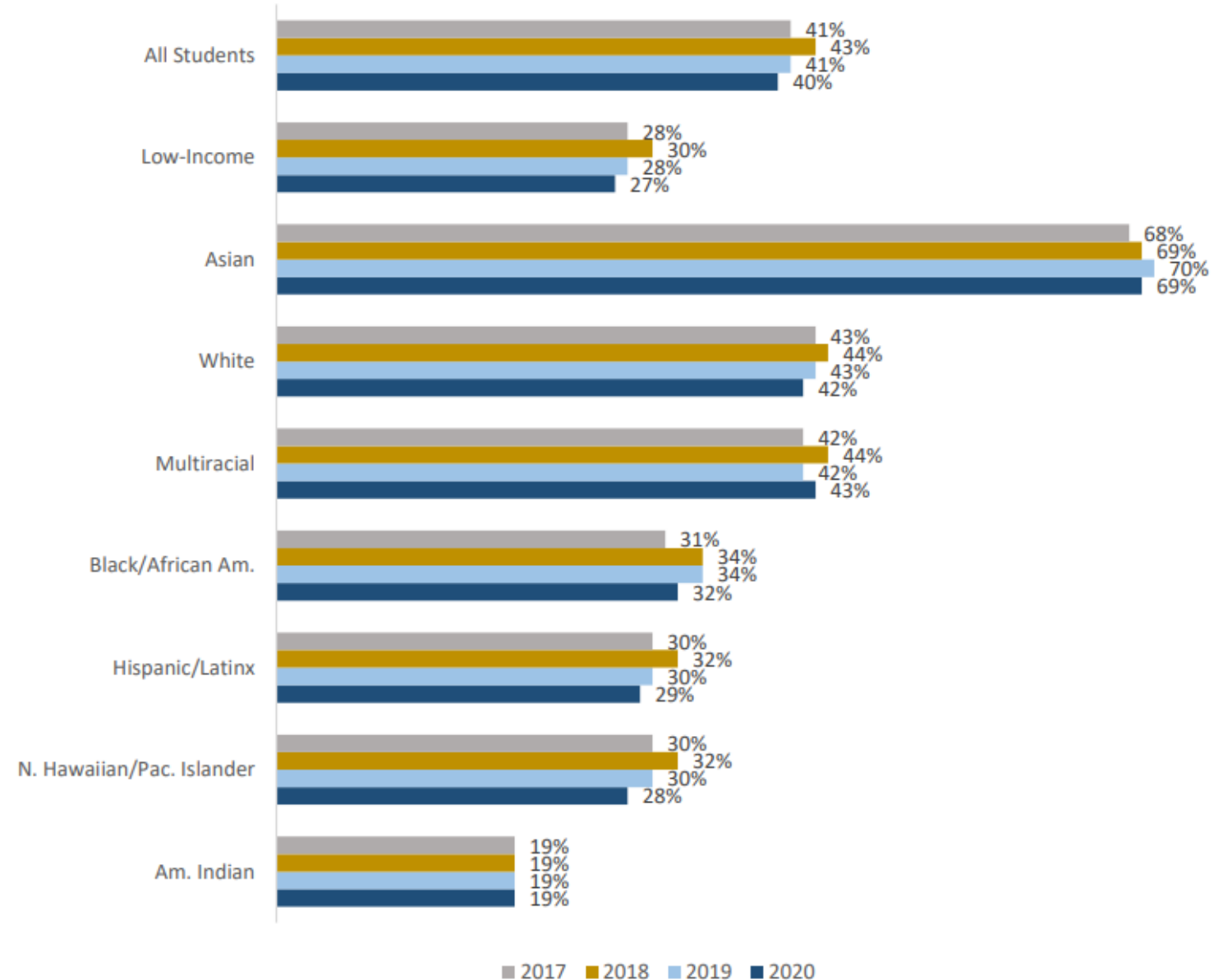
Kindergarten Readiness in All Areas
by Race/Ethnicity & Income
2021-22



Low-income students and students from underserved minorities are less likely to taking advanced math classes in high school

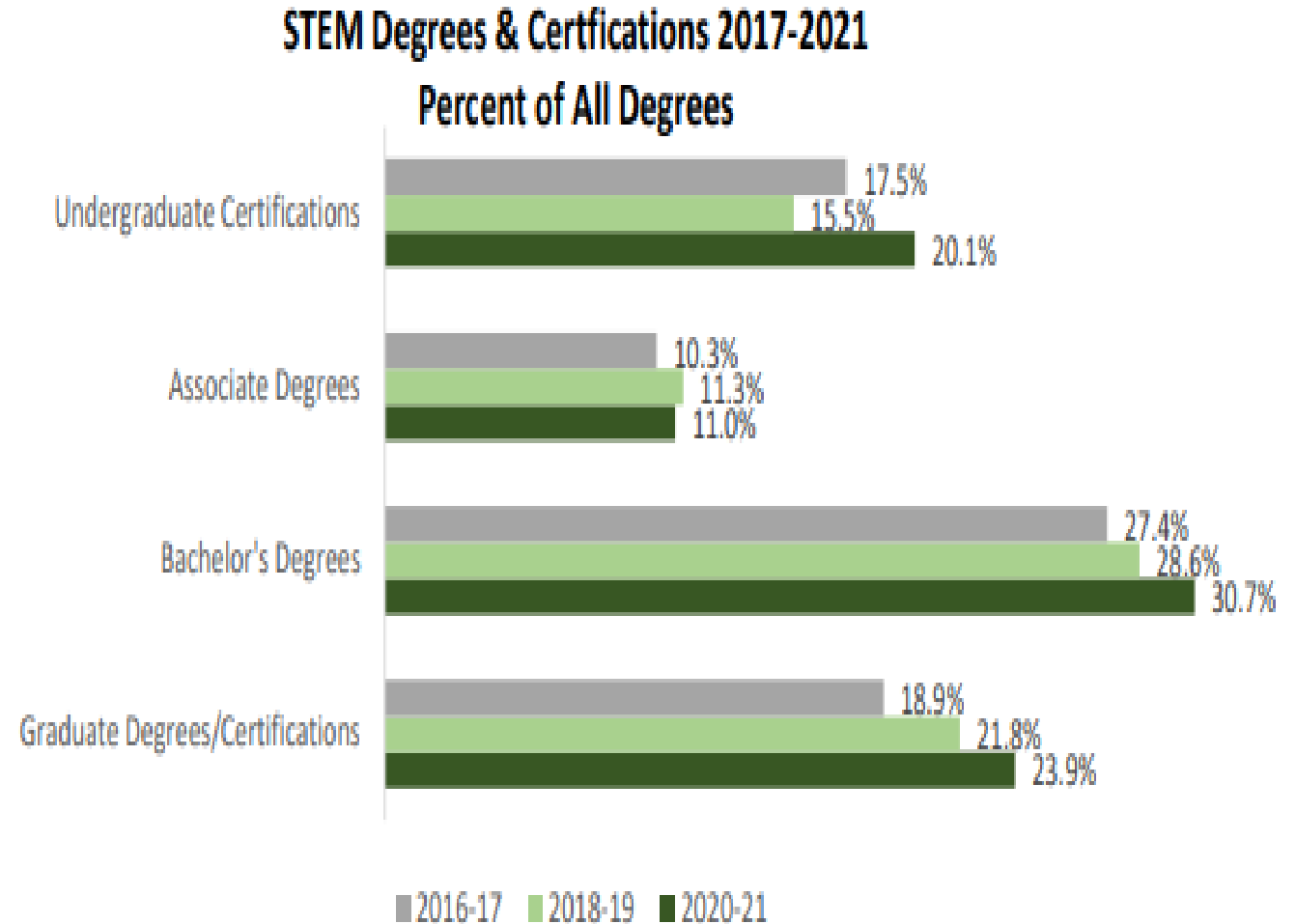
- In 2020, 40 percent of all Washington students graduating high school had taken advanced math classes beyond algebra 2.
- There has been slight variation from year to year since 2017, but the percentage has not changed significantly.
- Low-income students and students from underserved minorities are less likely to take these courses.

Statewide Percentage of K-12 Graduating Students Taking Advanced Math Classes



STEM degrees as a percentage of all degrees are rising

- STEM Degree Completions as a percentage of all degrees have been increasing at the associate, bachelor's, and graduate levels.
- Since 2016-17, STEM degree and certificate percentages have grown by 3 percent at the bachelor's level and by 5 percent at the graduate level.
- A national comparison for the 2020-21 academic year shows that Washington STEM percentages exceed the national average in most categories.



Demand for computer & information technology skills is widespread

- Demand for computer & information technology skills remains strong in a wide range of industries despite the recent wave of layoffs in high profile tech companies.
- Opportunities for high wage jobs in computer & Information technology remain widespread.
- Nationally, nine out of ten jobs in computer & information technology are in companies outside the tech sector.
- Washington data on IT jobs reflects this same trend.

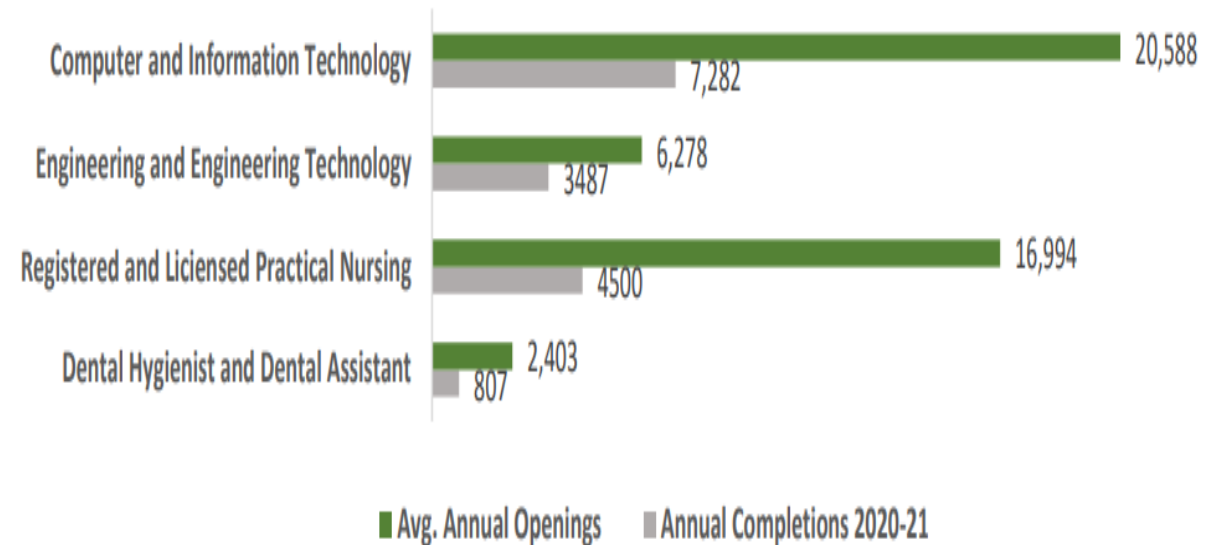
Unique Job Postings in Computer & Information Technology in 2022 A Selection of Top Industries



Keeping pace with rising employer demand for skilled, STEM-educated workers remains a challenge

- In key fields, projected annual job openings outpace the number of students completing STEM degree and certificate programs each year.
- As expected there is a large gap in the computer and information technology field.
- In the health field, we see large gaps in nursing.
- Demand for dental assistants and hygienists is also outpacing program completions.

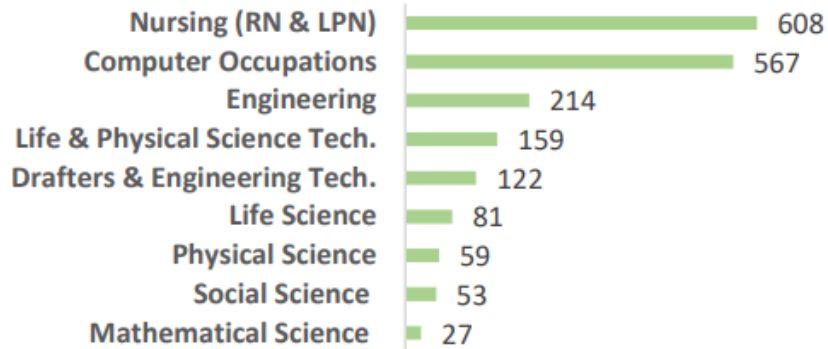
Key Gaps between STEM Degree & Certificate Completions and Projected Annual Job Openings 2022-23



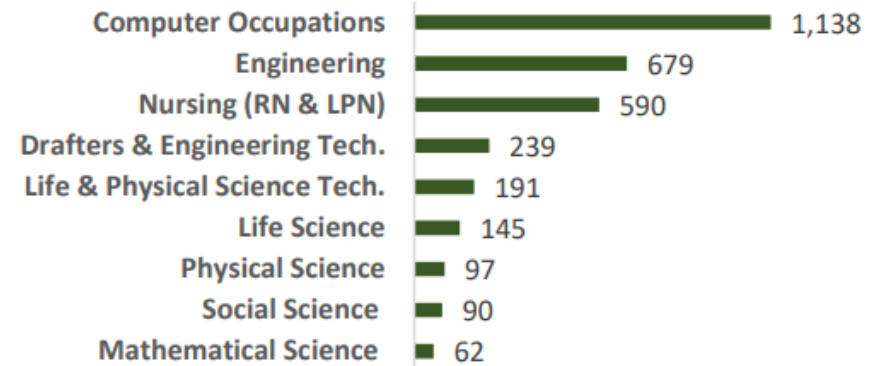
Source: WSAC staff analysis of IPEDS and Lightcast Q4 2022 labor market data

STEM employment opportunities are prevalent in all regions of the state

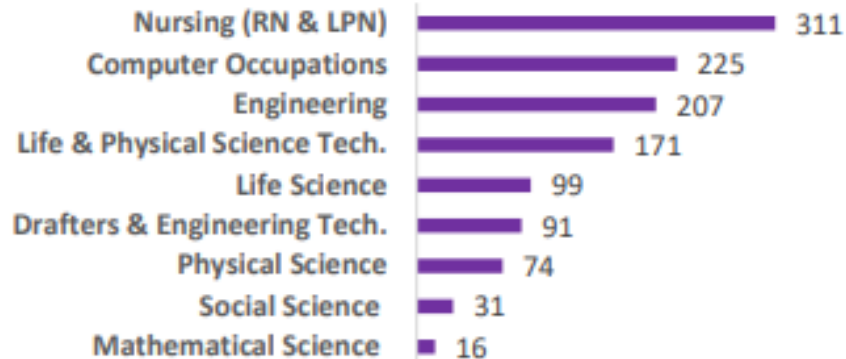
Northeast Region
STEM Occupations
Projected Annual Openings 2022-2032



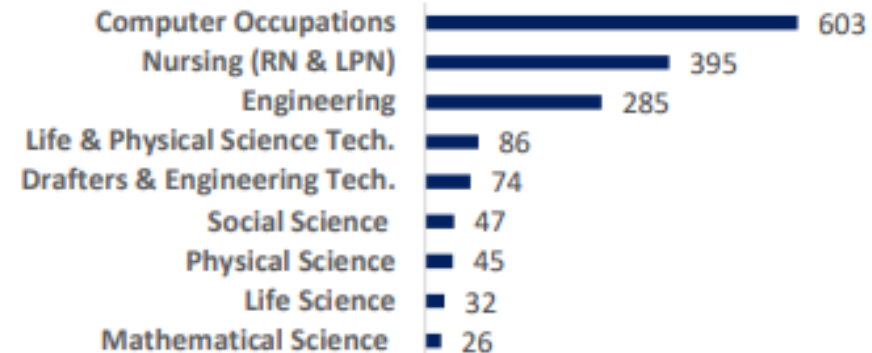
Northwest Region
STEM Occupations
Projected Annual Openings 2022-32



Southeast Region
STEM Occupations
Projected Annual Openings 2022-32



Southwest Region
STEM Occupations
Projected Annual Openings 2022-2032



Timing for Next Year's Report

- The 2024 STEM Education Report Card will be updated in December 2023, with the most recent data available.
- The Report Card is created in collaboration with the Education Research & Data Center.
- It is augmented with labor market data from Lightcast.



Comments and Discussion



Washington State's Board of Nursing

NCQAC

Nursing Care Quality Assurance Commission

STEM PRESENTATION

Paula R. Meyer, MSN, RN, FRE
Retiring Executive Director of NCQAC

Investments in Nursing Education

Investment in Simulation

Labs

Equipment \$ 8,000,000

Mobile Vans \$ 1,600,000

Supporting Nurses

- Faculty Loan Repayment
- Faculty salary increases
- Preceptor Grant roll out
- Washington Health Professional Services Program

Future Needs

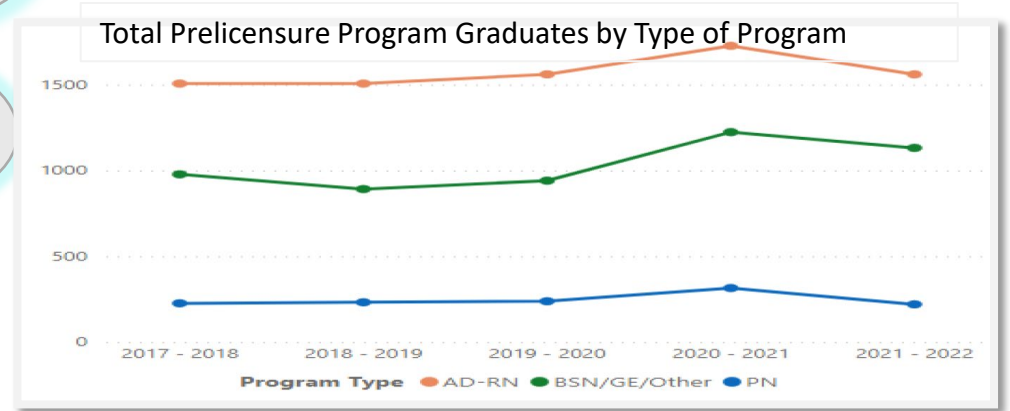
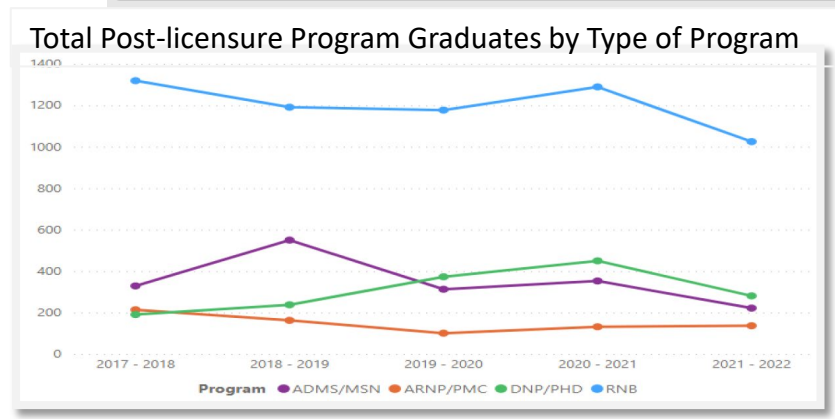
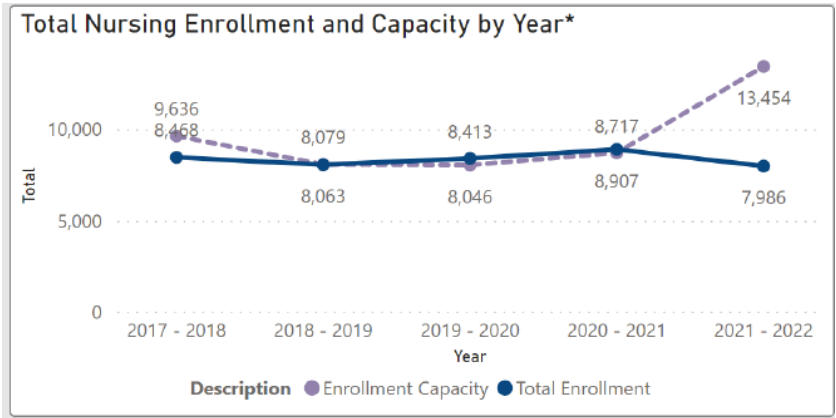
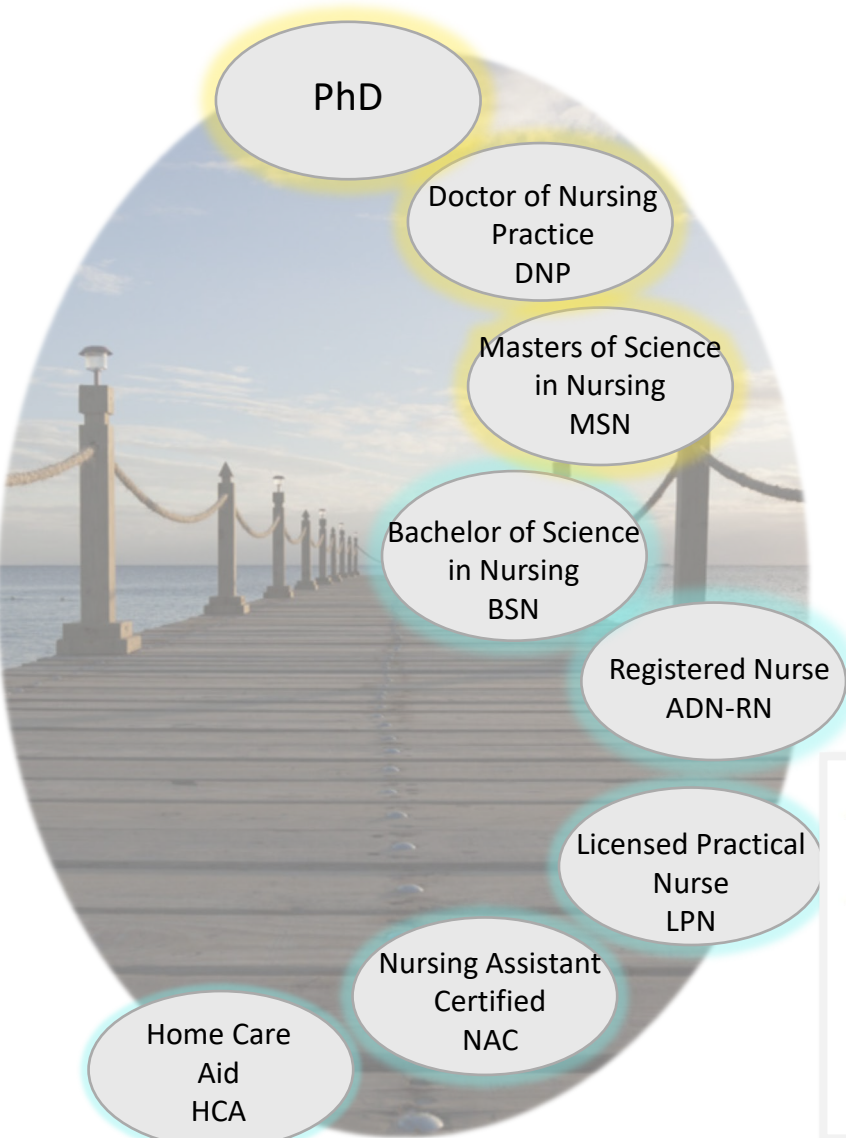
Faculty with advanced degrees to produce more nurses.

15 colleges received funding to expand nursing enrollments by at least 200 FTEs by Spring of 2025

- Hiring full-time faculty
- Hiring adjunct faculty
- Hiring clinical placement coordinators
- Hiring new or increasing hours for simulation coordinator positions
- Increase outreach and recruitment activities to promote new and existing pathways, including targeted recruitment efforts for incumbent healthcare workers
- Implement NAC to LPN Apprenticeship program
- Purchase equipment and supplies to accommodate additional students
- Expand lab/classroom space to accommodate additional students
- Invest in curriculum development/redesign to accommodate part-time students

Nursing Education

Career Pathway



Legislative Highlights

1. Dual Credit –Eliminating financial barriers to receiving college credit for College in the High School classes and expanding access to Running Start.
2. Regional Challenge Grants - \$16M for the biennium
3. WA College Grant - MFI changed 65% for a maximum award
4. WA Student Loan Program
5. High Demand Degrees – additional funding to expand enrollment
6. Compensation – additional state funding, for most institutions, was provided for employee compensation costs

WSU
\$3.0M for Nursing Education Salaries
\$2.5M Public Health Degrees

EWU
\$4.6M for Bachelor of Science in Nursing

Preceptor Grant
\$6.0M

\$4M (OSPI) and \$5M (SBCTC) for Career Prep and Career Launch Equipment.

Legislative Highlights

Senate Bill 5582: Reducing barriers and expanding educational opportunities to increase the supply of nurses in Washington.

Annual Education Report 2021-2022



STEM Alliance Meeting, May 16, 2023

Climate Learning Coalition



Dr. Deb L. Morrison & Dr. Philip Bell, ISME, University of Washington
Dr. Ellen Ebert, OSPI

The sweeping, multifaceted, and disproportionate impacts of global climate change require a systemic societal response.

Education is a vital institution to support responses across society that are multi-scalar and locally tailored.

All teachers need to be ready to teach about climate.

How do we accomplish this?

CLIME TIME™

CLIMATE SCIENCE LEARNING



Since its establishment in 2018, ClimeTime has engaged teachers in professional learning to deepen their understanding of climate science and how to bring those lessons into their classrooms in impactful ways.

In its first 5 years, ClimeTime has reached approximately **26,000 educators**.

In the last year alone, we have:

- Reached **1,847 schools** in 200+ school districts
- Impacting more than **177,200 students**



“National science educators have lauded ClimeTime as one of the best efforts. The program receives several million dollars a year in state funding. Since 2018, it has trained 14,000 teachers, or more than a fifth of the teachers in Washington State.”

– The New York Times*



climetime.org

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.



Learning about regenerative agriculture



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



Learning about fuel load with mega forest fires

CLIME TIME PROJECT PORTRAIT



NETWORK DESIGN AND SUPPORT

IMPLEMENTING NGSS-ALIGNED AND CLIMATE SCIENCE LEARNING IN WASHINGTON

Overview

The ClimeTime network leadership team consists of state educational leaders from the Washington Office of Superintendent of Public Instruction (OSPI), the Association of Educational Service Districts (AESD), and learning scientists from the University of Washington's Institute of Science + Math Education (ISME). Leadership team members directly support network partners who are designing NGSS-aligned and climate science professional learning resources for PK-12 educators in Washington State. Key insights from the leadership team efforts include: leveraging distributed expertise and responsibility, liaising across systems, cultivating a collaborative stance within a community of practice, and advocating for expanded and equitable access to professional learning for educators and science learning for students.

What We Do

Network leaders work with network partners in organizations and Tribal nations, educational service districts, (ESDs) and community-based organizations (CBOs) statewide who create and implement NGSS-aligned and climate-related learning opportunities for teachers. They provide support to partners in multiple ways, including: evaluation of project outcomes, communication within and beyond the network, and direct assistance with project work. Importantly, the leadership team collaborates through intentional, iterative cycles of planning, design, facilitation, and redesign of network activities, including identifying emergent needs, concerns, and opportunities within the network. For example, they facilitate cross-pollination of ideas and capacity building across projects.

What We Do

One key strength of the network is its focus on collaboration and co-adaptation and contribution. This distributed, flexible array of systems with constraints, complex relationships with various stakeholders, and

¹ Original as an assessment question, Educational Research Center
² Interview by Benq, M. F. Educational Research Center

Washington's ClimeTime

www.climetime.org

CLIME TIME™



CLIMATE SCIENCE LEARNING



COVID-19 ADAPTATIONS

TO SUPPORT THE CLIMETIME NETWORK

Overview

In response to the COVID-19 pandemic, the ClimeTime leadership team and partner organizations adapted the network and project activities in several ways. First, the network convening held in March 2020 was modified into two-day virtual gatherings. Network leaders also provided ongoing support to partner organizations to complete their grant activities using remote learning techniques for the year to continue building educators' capacity for NGSS-aligned and climate learning.

Network Convening

The network convening scheduled for March 2019-20 was adapted into a virtual format involving eight hours of engagement each day. Network leaders intentionally designed the gathering to include many interactive activities and opportunities for movement, including walk and talks, use of breakout rooms for group discussions and project work, and collaborations in color-coded side decks. This rapid adaptation required close coordination and substantial planning by the leadership team in order to model strategies or online facilitation that continue to be essential for remote forms of professional learning during COVID-19.

What We Learned

One key insight that emerged from this re-design process was to focus on the most important aspects of a learning experience. In order to maintain participant energy and engagement in a virtual context, network leaders eliminated some of the originally scheduled activities to concentrate on essential components. In reflecting on the convening, the leadership team recognized the need to arrange online gatherings in shorter segments, over the course of more days, and with more built-in breaks. This learning directly informed the design of the ClimeTime virtual conferences designed for



CLIMATE JUSTICE LEAGUE

CONNECTING SOCIAL AND ENVIRONMENTAL JUSTICE TEACHING

Overview

The Climate Justice League is a cohort-based professional learning experience that supports secondary teachers in designing and implementing science learning activities that highlight social justice and environmental justice connections. Teachers develop learning experiences focused on local changes and challenges and taking action to respond to these issues. These locally relevant focal phenomena also connect with regional, national, and global climate impacts and enable students to practice systems thinking in their science investigations.

What We Did

The Climate Justice League project was developed in response to several interconnected needs and opportunities. Teachers expressed interest in more in-depth and sustained professional development related to climate teaching and learning, particularly opportunities to collaborate, strategize, and reflect with other educators. This professional learning community also responded to a need in the ClimeTime network for innovative projects and practices focused on justice. Centering social, environmental, and climate justice topics in science education became a priority as youth activists called for classroom learning that addresses climate change and climate justice. At the same time, teachers recognized that learning experiences centering local issues impacting communities are more engaging and meaningful for students.

Collaborative approaches were critical throughout the design and facilitation of the Climate Justice League. Multiple perspectives were woven throughout the sessions through co-facilitation with Meredith Lehr and Sahar Arbab (EarthGen, formerly Washington Green Schools) as well as partnerships with Deb Morrison (UW Institute for Science and Mathematics Education), Liza Finkel (Lewis & Clark Graduate School of Education and Counseling), Tim Soukhart (local studies teacher involved with Portland Public Schools Climate Justice Education), Tiffany Mendoza (Earth and Coexistence), and Bill Bigelow (Teach Climate Justice campaign, Zinn Education Project). Through inviting a variety of collaborators to co-lead the sessions, this project amplified the voices of experts who are already deeply involved with climate change and



PROJECT REACH
13 Teachers, 1,300 Students



BRINGING CLIMATE SCIENCE HOME

WITH STEM SEMINARS FROM WASHINGTON GREEN SCHOOLS

Overview

Washington Green Schools' (WGS) STEM Seminars provide hands-on, place-based professional development that equips teachers to engage their students in climate science learning. By sharing current data, information on local impacts, and connections to local issues in their communities, the seminars make sense of complex climate change impacts utilizing the Science and Engineering Practices (SEPs) from the Next Generation Science Standards (NGSS). With help from University of Washington climate scientists, teachers explore local climate-change related phenomena through a variety of NGSS-driven activities and strengthen their understanding of climate change, its local impacts, and science-based solutions. By investigating how climate change intersects with issues of equity and justice, teachers also learn how to involve their students in action to address these critical issues.



PROJECT REACH
447 Teachers, 8,940 Students



Climate Change & Human Health

Explore data relevant to the claim using the Department of Health's [Washington Tracking Network \(WTN\)](#)

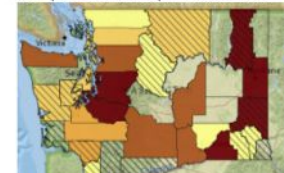
To view asthma hospitalizations:

- In the Selection Criteria on the left side of the screen, set:
- Section as "Health"
 - Topics as "Hospitalizations"
 - Sub Topic as "Asthma Hospitalizations"
 - Measure as "Asthma Hospitalizations"

- Filters can be set to show data by:
- Geographic regions, such as state, county, accountable communities of health (ACH), or zip code
 - Time periods
 - o Single year, three year, or five year intervals
 - o Year or year range
 - Age group

Data can be viewed as a table, chart, or color-coded map.

Example: Asthma Hospitalization - 2016



Measure 1	
Keyword Search	Search measures
Section	Health
Topics	Hospitalizations
Sub Topic	Asthma Hospitalizations
Measure	Asthma Hospitalizations
Filters	
Geography	County
Age Group	All (Combined)
Time Period	Single Year Intervals
	2016
<input type="button" value="Submit"/>	

@ClimateEdTools

The Climate Teacher Ed Collaborative



What is the collaborative?

The Institute for Science + Math Education at the University of Washington and the Office of the Superintendent of Public Instruction have received funds from the WA state legislature to create and lead a network of teacher educators in co-developing resources and learning trajectories to prepare pre-service teachers to teach for climate justice.



Since its establishment in 2021, the collaborative has...


- Teacher educators from 13 different WA Teacher Education Programs and 3 different states have joined
- Hosted 10 free climate teacher webinars & created OER tools to accompany these for future use with pre-service teachers
- Initiated 5 collaborative design teams across the network to design teacher educator materials
- Distributed > 700 climate related books to pre-service teachers

Co-Design of OER Climate Teacher Ed Lesson Plans (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. They include instructional sequences, embedded resources, and guidance for teacher educators.

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 M. Torres (June 2022)

STEM teaching tools Climate Education Tool #3



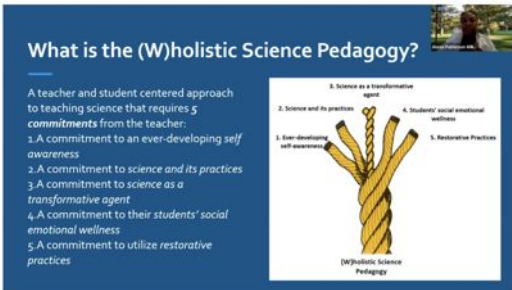
It's Not Only About the Content: People, Culture, and Processes within Climate Justice Education (~3 hours)

STEM 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)

STEM teaching tools Climate Education Tool #5



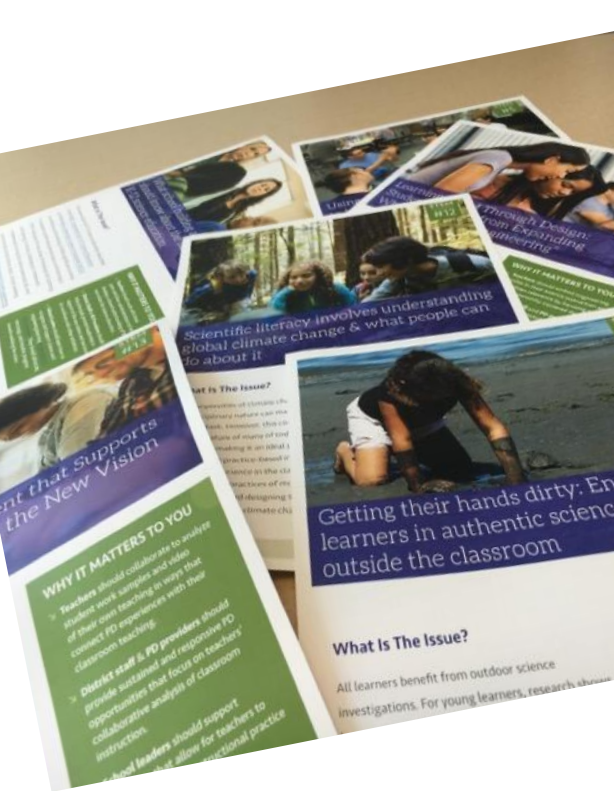
What is the (W)holistic Science Pedagogy?

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 (December 2022)

Climate Learning Resource Portal



STEM
teaching tools

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

HOME TOOLS PD MODULES CLIMATE LEARNING NEWS NEWSLETTER ABOUT

Climate Learning Resources

Global climate change is rapidly impacting all life on earth. But impacts of climate change are complex, uneven, and worsening, with people from poverty-impacted and BIPOC communities often experiencing impacts most sharply. We must be prepared to understand and respond to climate science. Education is a vital context for building capacity for just, community-driven adaptation and resilience efforts as well as for promoting the enactment of equitable mitigation efforts around the world.

Justice-centered climate change learning is complex, but urgent. To support educators to build capacity for this work, we are creating a suite of resources focused on different aspects of this work. Climate science learning has to happen across PK-12 classroom, in informal education and outdoor contexts, and in community-based learning settings.

Portal Includes:

- Practice Briefs
- 3D Climate Assessments
- Webinar Recordings
- OER Teacher Ed Lesson Plans
- Practitioner Articles
- Research Summaries
- Climate Justice Grad Seminar

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



Professional Learning Resources to Support NGSS Framework Implementation

- Co-designed by practitioners & researchers
- Tested & refined over time
- Easily shareable—over social media, email, paper



STEM Teaching Tools #15

Overview: How can we promote equity in science education?


What Is The Issue?

Equity should be prioritized as a central component in all educational improvement efforts. All students can and should learn complex science. However, achieving equity and social justice in science education is an ongoing challenge. Students from non-dominant communities often face "opportunity gaps" in their educational experience. [Inclusive approaches to science instruction](#) can reposition youth as meaningful participants in science learning and recognize their science-related assets and those of their communities.

WHY IT MATTERS TO YOU

- Teachers should work with colleagues to implement instructional strategies to make science learning experiences more inclusive for all students.
- District staff and PD providers should integrate a focus on equity and social justice into every teacher learning experience in relevant ways—and not treat diversity as a segregated topic.
- School leaders should promote a sustained focus on inclusive science instruction. Efforts should be made to resource and monitor equitable opportunities to learn science.

BY PHILIP BELL AND MEGAN BANG | JANUARY 2015 [STEMteachingtools.org/brief/15](https://stemteachingtools.org/brief/15)



STEM Teaching Tools #67

Focusing Science and Engineering Learning on Justice-Centered Phenomena across PK-12

What Is The Issue?

In the *Framework* vision for science education, students engage in active investigations to make sense of natural phenomena and analyze and build solutions to problems. Basing these investigations on *justice-centered* phenomena can be a powerful and rightful way to support science and engineering learning. *Justice-centered* investigations can open up important opportunities for students to engage in projects that support equity for communities and to see how the application of science and engineering are fundamentally entwined with political and ethical questions, dimensions, and decisions.

WHY IT MATTERS TO YOU

- Teachers should help students engage in projects that address intersecting systems of oppression (e.g., racism, heterosexism, poverty, sexism, colonialism, ableism, Islamophobia, etc.)
- District Staff & PD Providers should help educators develop phenomena-based justice units and learn to facilitate complex interdisciplinary conversations.
- School Leaders can help teachers connect with justice-centered organizations (e.g., to organize class visits, fieldwork, student presentations)—in addition to supporting justice within the school walls.

BY DEB MORRISON, PHILIP BELL & ABBY BINENHART | MAY 2019 [STEMteachingtools.org/brief/67](https://stemteachingtools.org/brief/67)



STEM Teaching Tools #61

Using science investigations to develop caring practices for social-ecological systems

What Is The Issue?

How can we be more present for other species at a time of ecological devastation? Developing deep commitments to the human and *more-than-human* inhabitants of ecosystems is crucial for cultivating students' caring *knowledge and practices* within the escalating challenges of the climate crisis. More-than-humans are typically represented in STEM curricula as objects of observation or utility rather than dynamic beings with rights to act and be recognized. All learners should build interdependent, caring relationships with more-than-humans focused on shared thriving to promote ecological identities, *deep* STEM learning about local places, and responsibilities.

WHY IT MATTERS TO YOU

- Educators should create opportunities for learners to build relationships with various more-than-humans in local ecosystems and support inquiry processes that derive from learners' concern and care for their relations.
- District Staff & PD Providers should help educators learn about local flora and fauna and engage through place-based education to support learners' building of multispecies relationships.
- School Leaders should ensure that educators have sufficient time, space, and resources to engage learners in STEM field investigations.

BY KACHIL HAN AND PHILIP BELL | JUNE 2019 [STEMteachingtools.org/brief/61](https://stemteachingtools.org/brief/61)



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facebook.com/STEMTeachingTools

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.

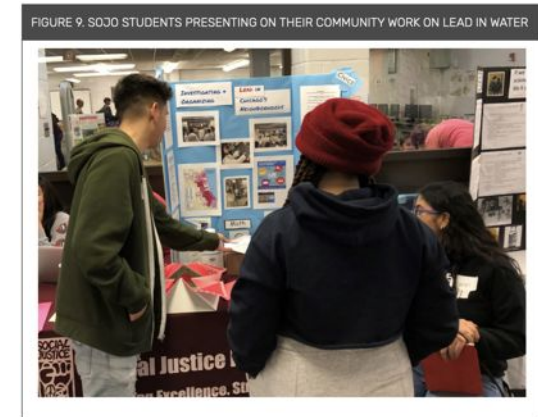
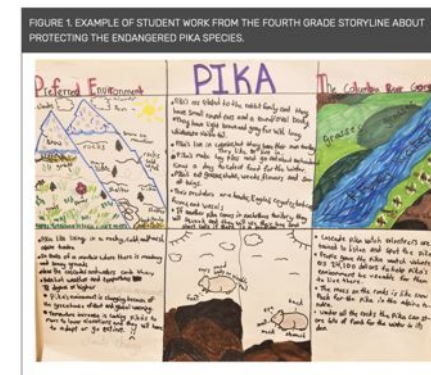
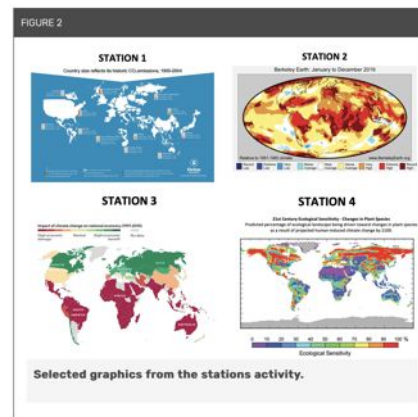
Experts define how they think about the work, share examples, and discuss how educators can take up the work.

[Webinar Playlist](#)

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.



Assessing students' understanding of the greenhouse effect by looking at language use over time



Beliefs about action for climate change: Key influences and implications



Children's use of repertoires to engage with socioscientific issues



Environmental activism as a context for learning science



Environmental beliefs and willingness to take action

STEM Alliance February 2023 Climate Science Education Sharing



WA has many climate learning initiatives!

- Outdoor nature-based child care
- Outdoor education programs
- ClimeTime - K-12 climate science education
- Climate science integration program
- The Climate Teacher Education Collaborative - pre-service teacher climate science learning
- Community and technical college climate science education and curriculum
- Climate action and climate careers after high school expanding opportunities

How can we maximize sharing and learning across these efforts during implementation to improve coherence and foster innovation?

Washington State Climate Learning Coalition	
<p>Learning for action is needed all across the United States and the world as all of humanity seeks to mobilize the needed changes of our shifting climate. Virtually every sector is engaging in this work; however, not all are knowledgeable about how to most effectively achieve the organizational and societal shifts needed in a coherent and efficient manner. Many efforts have been funded and initiated to support these societal shifts through education. However, the current situation of uncoordinated and diverse learning efforts in PK-12 education, higher education, workforce training, public communications, leadership for transitions, justice organizations, and the scientific community is not the most impactful way to maximize the acceleration of just climate action. Bringing coherence to this work is the transdisciplinary challenge of our time and there is no singular agency or organization that is designed to lead this at the moment. Nonetheless such structural coherence is badly needed to better network, to engage in cross-initiative learning and coordination, to collaboratively design needed resources, and to define possible gaps and plan future activities and areas of shared work.</p> <p>In the spring of 2023, the WA STEM Education Innovation Alliance coordinated a sharing session of learning efforts across Washington state. This effort highlighted the leading edge work in the state and illuminated the need for further coordinated work among individual efforts to maximize efficiencies and to share lessons and successes between efforts as they are being implemented.</p> <p>To engage in this work, we seek to bring together approximately 50 organic leaders in this space that are currently implementing learning for climate action efforts across the state. The collaborative network of networks will be led by a strategic coalition of leading community-centered justice organizations working in the climate space brought together with facilitation by the University of Washington's Institute of Science and Math Education. The participants will share in a working session of 2-3 days in June or July to define commonalities, opportunities, and improvements that can be made within and across climate learning efforts in the state. The leadership team will work, design, and facilitate the shared meetings and synthesize the lessons from this initial session to help define next steps for coordinated and coherent efforts in the</p>	
Estimated Budget	Intended Outcomes
,000	<ul style="list-style-type: none"> • Initial framework document • Example vignette case studies • Example concepts for resource hub
,000	<ul style="list-style-type: none"> • Synthesis report with recommendations • Vignette case studies shared on resource hub • Network of networks structural supports • Emerging collaborations
,000	
of participating organizations or	

<https://tinyurl.com/waclc2023>

Climate Learning Coalition



- Phase 0: STEM Alliance Feb. 2023 meeting on climate learning efforts in WA state.
- Phase I: Collaborative working, in-person workshop in July - “unconference” workshop to learn and share implementation work across preK → secondary education and pathways preparation, higher education, environmental education, career and technical education...climate learning work in all contexts.
- Phase II: Review and recommendations - draft report writing and synthesis with virtual gathering for draft report release, collaborative review of report and feedback, and then final report editing.

Estimated \$30,000 → UW would manage, coordinate, and facilitate participant involvement, in collaboration with OSPI and community justice partners.