

Summary and additional details on Proposed STEM Alliance Recommendations



1. Provisos for the Educator Conditional Scholarship Program and Teacher Academies (*STEM educator recruitment*)
2. Early STEM Systems Improvements: measurement & equitable investment + professional development + STEM pathways development (*Early STEM*)
3. Fund access to outdoor learning in preschool and the early grades (*Early STEM*)
4. Community based outreach & engagement in STEM programs (*Career Readiness*)
5. Increase access to Computer Science by regional implementation leads (*Career Readiness*)
6. Support expanding Dual Credit articulation systems statewide to increase equitable access (*Career Readiness*)
7. Support Apprenticeships & Related Experiential Learning (*Career Readiness*)

Legislative Recommendations Leadership Team

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2022 Legislative Recommendations Workgroup

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- ▶ Alex Manuel, PESB
- ▶ KO Wilson, Seattle Public Schools
- ▶ Jody Robins, LNI
- ▶ Sezi Fleming, UW MESA
- ▶ Joe Holliday, SBCTC

Questions used to prioritize these recommendations

adapted from the Black Joy Consortium for Reimagining Education Policy Analysis Framework



- ▶ 2. Will the issue bring real improvements to the educational outcomes of Black and brown students? Will it alter the relations of power? *Will the issue result in measurable reductions in racial disparities?*
- ▶ 4. *Is there evidence and research that suggests that addressing this topic/issue will have the intended impact?* Has the issue been addressed before and what was the outcome? Do we need to develop evidence? Does existing evidence conflict with other anecdotal information and/or the lived experiences of those most impacted?
- ▶ 6. Can we recommend an *ongoing feedback loop* (e.g., publicly available data, reports to legislature, reports to communities impacted)?
- ▶ 9. Is this proposal *viable in the upcoming session?* Does it have bipartisan and bicameral support? Are there legislative or other agency actor champions? How do we make it viable? Are there active legislative opponents or competing proposals we should be aware of?
- ▶ 11. *Are we clear about what changes* (policy, investments, technical, human capacity) needed to take place in order to move this issue forward?

STEM Teacher Pipeline

Issues Lack of STEM-endorsed Teachers Statewide

Per PESB Shortage Areas, Math and Science Teachers are needed in every ESD in Washington

These shortages impact STEM learning at all levels

A lack of teachers qualified to teach College in the High School courses impacts dual credit availability

Recommendation:

Provisos for the Educator Conditional Scholarship Program (WSAC) and Recruiting Washington Teachers/Bilingual Educator Initiative (PESB).

“\$500,000 of the general fund-state appropriation for fiscal year 2023 is provided solely to increase the number of STEM endorsed educators through the educator conditional scholarship program. Recipients must be STEM teachers, with a preference for STEM teachers endorsed to teach dual credit programs.”

A separate proviso language would direct additional state dollars to create STEM pathways in the Teacher Academy program Recruiting Washington Teachers (targeting 11th/12th grade HS students) and/or the Bilingual Educator Initiative to bring more diverse students to STEM education.

DRAFT Provisos for the Teacher Pipeline Recommendation:



1: In WSAC's Student Financial Assistance section

“\$500,000 of the general fund-state appropriation for fiscal year 2023 is provided solely to increase the number of STEM endorsed educators through the educator conditional scholarship program. Recipients must be STEM teachers, with a preference for STEM teachers endorsed to teach dual credit programs.”

2: In PESB's Section within OSPI

\$622,000 of the general fund—state appropriation for fiscal year 2022 and ~~\$622,000~~ \$1,122,000 of the general fund—state appropriation for fiscal year 2023 are provided for the recruiting Washington teachers program with priority given to programs that support bilingual teachers, teachers from populations that are underrepresented, and English language learners. Of the amounts provided in this subsection 3 \$500,000 of the general fund—state appropriation for fiscal year 2022 and \$500,000 of the general fund—state appropriation for fiscal year 2023 are provided solely for implementation and expansion of the bilingual educator initiative pilot project established under RCW 3528A.180.120.36(4).

Early STEM/ Early Math

Systems Improvements in Early STEM: Fund creation and usage of State of the Children reports + Professional Development for WaKIDS + STEM pathways development

a) Support the ongoing creation and usage of State of the Children reports. The annual State of the Children reports bring together key data from across sectors that allow regions and local communities to better understand what communities need. [The State of the Children: Early Learning & Care report series](#), provide an in-depth look at the health of our early learning and child care systems. This report is not currently funded by the state, however there is an impending need for regions and local communities to have regular and reliable access to data that can guide increased access to early learning through coordinated recruitment and enrollment efforts.

In its first iteration the State of the Children Reports brought together more than 34 data points provided by 20 organizations, into one single interactive dashboard and regional report series.

For a comprehensive list of the data and sources please visit

https://washingtonstem.org/wp-content/uploads/2020/11/SoTC-Sources_112420.pdf

Please reach out for input from

Bish Paul, WA STEM

Karma Hugo, OSPI

Genevieve Stokes, DCYF



b) WaKIDS Professional Development

Increasing alignment and improving use of Washington Kindergarten Inventory of Developing Skills (WaKIDS) assessment to measure and support Early STEM. The state uses the Smarter Balance assessments in reading and math in the 3rd grade. Research shows that kids who start behind, stay behind in the k-12 system. K-5 students often experience learning prioritizing math and ELA only. This narrow focus limits students and fails to leverage the anchoring arena science provides where all subjects come together in authentic learning experiences grounded in meaningful purpose. Science engages curiosity and drive to learn, provides for social and emotional learning needs, and requires students to deeply read, write, speak, and listen; apply mathematical thinking and skills to authentic contexts, and consider human relationships with the natural world. More professional development is needed for teachers to understand how to provide developmentally appropriate opportunities for children to demonstrate and grow their early STEM skills in ways that are culturally responsive and achieve equitable outcomes across populations.

Please reach out for input from
Karma Hugo, OSPI
Genevieve Stokes, DCYF

c) Early STEM pathways development

Expand the “Pathways” series to articulate the developmental progression of skill development for STEM, building off the [Washington Early Learning and Development Guidelines](#) and existing Pathways documents - fund the creation, implementation and usage of a new pathway on STEM, as well as professional development on how to use it. Content knowledge, scientific practices, and analytical thinking skills develop in a clear, coherent progression, beginning in prekindergarten and building grade by grade. Students without access to this early learning must enter middle and high school lacking the foundational skills, knowledge, and learner confidence. This strongly disadvantages these students in their ability to be successful in science courses in middle school, which consequently impacts their readiness for the rigor of high school science. Furthermore, Furthermore, students who do not have access to science learning in K-5 are denied the opportunity to develop personal STEM identities and mindset. Students of color face obstacles of personal mindset and social messaging about their place in science and STEM. Failure to address these issues during the formative years when students are developing their ideas about who has the right to access science and engineering learning and establish rightful identities as STEM-literate people serves to perpetuate this problem.

Examples of pathways include:



[Learning Pathways In Numeracy](#)

[Pathways in Literacy](#)

[Social-Emotional Learning](#)

Please reach out for input from
Karma Hugo, OSPI
Genevieve Stokes, DCYF

COVID response: Support the expansion of outdoor learning in preschool and the early grades. Schools and DCYF programs are expanding and piloting outdoor early learning models with the passage of recent legislation (SB5151). Outdoor learning can provide high-quality learning opportunities, while providing for increased safety during the pandemic, as well as implementing curriculum rooted in STEM concepts and pedagogy.

Outdoor, nature-based education programs (ONBP) and child care is often described as “learning with, in and about nature.” Teachers use nature-based experiences to support children’s holistic learning and development, and support children’s connection to nature and sense of ecological identity. Outdoor, nature-based experiences also promote children’s healthy physical, cognitive and social development and learning in ways that are unique from a traditional indoor environment. All children can benefit from and deserve these opportunities, yet many children lack access to outdoor and nature-based experiences and these inequities often fall across socioeconomic and racial lines.

‘Outside play’ is still recognized by the Washington State Department of Health (DOH) as an effective method to reduce transmission of COVID-19, and outdoor preschools are well-positioned to provide such opportunities, along with the many benefits such programs provide to children’s development and learning.

While nature-based programs can be operated without the additional cost of facilities, some additional and unique program supplies are needed for nature-based programs, such as:

Rainy Day Gear – waterproof boots, pants and jacket for children, waterproof backpacks for staff, bins for supplies and canopies.

Staff Training – nature-based education and wilderness first aid, if needed.

Hygiene Supplies – handwashing stations, garbage bins/bags, portable or composting toilets or backcountry toileting supplies, if needed.

Outdoor Adventure Supplies – travel cart, walky-talkies, emergency whistle, plant ID books, magnifying glasses, laminated story-books, etc.

Comfort – insulated pads and sleeping bags or blankets, if napping outdoors.



These additional costs can be a burden for some families to access ONBP. A “Goods & Gear” grant would be instrumental in removing barriers to access for low income families.

- Eligible uses of funds:
 - For outdoor preschools: up to \$800 per child who is participating in WCCC, ECEAP, or the Seattle Preschool Program for all-season, outdoor appropriate clothing
 - For outdoor school-age care: up to \$900 per child who is participating in WCCC
- For all programs: up to \$3,000 per outdoor nature-based care program for goods, including items such as age-appropriate science kits for outdoor use, curriculum, laminated books, measuring devices, and other educational materials
- Organizations eligible to receive funding from the outdoor nature-based care Gear and Goods Grant Program include:
 - Outdoor preschools licensed by DCYF and who are eligible to accept children utilizing the Working Connections Child Care subsidy program and/or who are participating in the Early Childhood Education and Assistance programs including those operated by:
 - Non-profit organizations
 - School districts
 - Parks departments or other municipal entities
 - Religiously affiliated entities
 - Educational service districts
 - Community and technical colleges
 - Outdoor school-age programs licensed by DCYF and who are eligible to accept children utilizing the Working Connections Child Care subsidy program
 - Outdoor preschool and school-age programs operated by federally recognized tribes in the state
- Upon receiving a grant or loan, the recipient must continue remain eligible to accept children utilizing the Working Connections Child Care subsidy program or who are participating in the Early Childhood Education and Assistance programs for two years.

More info:

<https://dcyf.wa.gov/sites/default/files/pdf/reports/OutdoorPreschoolPilotFinal2020.pdf>

Please reach out for input from
Genevieve Stokes, DCYF
Karma Hugo, OSPI

STEM Career Readiness

Community based outreach & engagement in STEM programs

Support for Career Connected Learning (CCW priorities 2021)

Support for Career and College Pathways Grants (WSAC decision package 2021)



Issues: Inequity in access (rural vs urban); need for more trusted messengers in communities

Proposal: Create grants for regional *Career Connected Learning Rural Navigator* positions housed in community-based organizations (CBO) to help families and students find, enroll in, and complete, various career connected learning opportunities in their region. The Navigators are trusted messengers who will direct educators, business and community-based orgs to all the career connected learning programs available in the region and how to access them.

- ▶ Partner with rural districts & work with the ESD coordinator and CCW Networks
- ▶ Develop a core group of CCL contacts at assigned rural middle and high schools
- ▶ Assist districts with developing and executing FAFSA/WAFSA nights, HSBP planning sessions, career days/fairs, etc.
- ▶ Communicate with parents, students, and families

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Core Job Functions:

- Partner with rural districts to build capacity for direct student support in engaging in the Career Connected Learning continuum and aligning the student's HSBP to local and virtual career explore, prep and launch activities.
- Develop a core group of CCL contacts at assigned rural middle and high schools and work together to realize the sub-regional approach to career connected learning.
- Assist districts with developing and executing career readiness events such as FAFSA/WAFSA nights, HSBP planning sessions, career days/fairs, etc.
- Communicate with parents as needed to assist in implementing the High School and Beyond Plan, becoming career ready by selecting appropriate career explore and prep experiences, and applying to post-secondary education or training programs.
- Work with the Network to organize career explore and prep opportunities for middle and high school students.
- Co-lead, with local high school(s), an academic credit internship program linked to STEM and local career and technical education (CTE) courses.



- Partner with the Network to Identify business partners and sponsors to support the job shadow and internship programs.
- Work with the Network to identify gaps in career readiness and STEM literacy and develop collaborative outreach opportunities to fill those gaps.
- Collaborate with other local collaboratives to support common collective impact efforts to improve community outcomes.
- Maintain consistent and transparent communications among partners to foster trust and cooperation.
- Make informed decisions utilizing research, best practices and data relevant to STEM education.
- Ensure compliance with all state and federal mandates.
- Assist in the creation and implementation of a long-term funding strategy to expand financial and volunteer resources.
- Perform other related duties, as assigned, to support the success of the Network.

Please reach out for input from
Karina Vega-Villa, Wenatchee Valley College
Washington MESA
PNNL

Increase access to Computer Science by supporting regional implementation, community partnerships & planning

Issues:

Inequity in access to CS;
coordination & information around current CS implementation;
need systems improvements regionally & statewide to serve all students

Proposal: Working through the Education Service District regional structure, CS Implementation lead positions could provide technical assistance to the K12 system for implementation of Computer Science standards and support for meeting the legislation for offering CS courses, and developing CS career pathways in partnership with local Career Connected Learning Networks.

Deliverables:

- ▶ Materials and Curriculum
- ▶ Leadership
- ▶ Teacher Capacity
- ▶ Partners and Community



Working through the ESD regional structure, these positions will provide technical assistance to the K12 system for implementation of Computer Science standards and support for meeting the legislation for offering CS courses, and developing CS career pathways in partnership with local Career Connected Learning Networks.

Draft Deliverables:

- ▶ Materials and Curriculum
- ▶ Leadership
- ▶ Teacher Capacity
- ▶ Partners and Community

A. Materials and Curriculum - Provide awareness and opportunities to expand knowledge of the student outcomes in the CS standards for teachers, administrators, and district CS leaders. Help districts identify current course pathways and availability of K-12 curricula & resources.

B. Leadership - Engage district and building leaders in activities to increase their awareness of the value of CS education and the need for coordination of activities to build a K-12 pathway for CS learning through: 1. Expanding participation and provide regional leadership opportunities through #WINforCS in coordination of the Network of 10. 2. Increasing SCRIPT and other strategic planning opportunities to support districts. 3. Supporting the district to implement their strategic plan and engage their teams back at the district.

C. Teacher Capacity - Support teachers with integrating CS standards into current practices. Build awareness of PL opportunities including: 1. Bring awareness through effective communication of PL opportunities, workgroups, leadership networks, administration support, and districts shared learning. 2. Support districts with grant opportunities and awareness. 3. Support districts who have received CS grants. 4. Support districts with CS implementation.

D. Partners and Community - Identify and build relationships with potential community members and partners for the Network of 10; and serve as Liaison between community members, partners, and districts.

Please reach out for input from
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Katherine Livick from ESD 112 katherine.livick@esd112.org

Recommend Supporting Dual Credit and Apprenticeships proposals

Equitable access to Dual Credit

Issue: Inequity in access to and affordability of dual credit programs. Minorities are



underrepresented in STEM disciplines at every level. Participation in dual credit programs linked to higher college-going and persistence rates, as well as achieving a higher GPA.

Proposal: Expand Dual Credit articulation systems statewide in order to give all students equitable access to dual credit and the opportunity to enroll, complete, and earn college credit for various program offerings.

The proposal would continue to expand access and affordability to the six existing dual credit programs in Washington to meet equity goals as well as increase postsecondary attainment goals. Expanding Dual Credit articulation systems supports the state's attainment goal as well as opens doors of opportunity for low-income and students of color.

Preliminary recommendations from Dual Credit Task Force from April 2021 can be found here <https://wsac.wa.gov/sites/default/files/2021-04-14-01-Dual-Credit-Combined.pdf>

Workforce readiness: Apprenticeships & Related Experiential Learning

Issues: Apprenticeships and other experiential learning, including preparatory programs, have grown significantly in WA state. The growth is limited, however, by a scarcity of industry opportunities for apprentices and funding issues, including with the Washington College Grant (WCG).

Proposals to Consider Supporting:

- ▶ The **LNI decision package provision** of digital enhancement to the apprenticeship registration and tracking system. (Note: could explore LNI being responsible for data collection and reporting, leading to more providers enrolling in the system.)
- ▶ **Senators Keiser and Randall** jointly have been building a roadmap to tackle apprenticeship funding issues. Two bills are expected this legislative session, one in Higher Education & Workforce Development Committee and the other in Labor, Commerce and Tribal Affairs. Input welcome ([see text below](#)).
- ▶ **Governor Inslee's Green Energy legislative proposal**, with support for apprenticeships built in.
- ▶ Continue to support **Career Connect WA** and its support for apprenticeships.

DRAFT Apprenticeships in Washington State
Exploring 2022 (and beyond) Legislative Options

Section 1 - Purpose/intent (Draft):

Washington state is recognized as a leader in developing and maintaining a registered apprenticeship system that has created tens of thousands of high-skill, high-wage careers in



traditional apprenticeship programs that are financially sustainable and jointly managed to ensure future generations of apprentices for high demand occupations. The “earn while you learn” apprenticeship model opens opportunities to diverse groups that have been systemically excluded from access to traditional higher education and traditional apprenticeship programs. Creating a permeable pathway between state registered apprenticeship programs and state higher education institutions will increase attractiveness of apprenticeship programs to broader groups of students.

The COVID pandemic created significant dislocation and disruption in our workforce, which needs to be repaired. Developing innovative apprenticeships while providing support for traditional apprenticeship programs to undertake new initiatives will grow and rebuild a robust post-pandemic economy and ensure Washington’s leadership in career development. To achieve these goals will take time and sustained support. The intent of the legislature is to utilize American Rescue Plan Act of 2021 dollars to fund this transition and expansion of state registered apprenticeships.

Additional Sections/Concepts DRAFT:

▪ FUNDING

- Address disincentives created by 50% tuition waiver within current model for instructional components of state registered apprenticeships. Ensure funding for community & technical colleges fully covers institutional costs of delivering, hosting and/or contracting Related Supplemental Instruction portions of state registered apprenticeship programs.
- Remove barriers for apprentices to access the Washington College Grant for Apprenticeship (WCG-A) program. Ensure apprentices can access through the campus financial aid office like other students (vs. through the individual apprenticeship program) when the RSI is associated with the college.
- Remove eligibility funding cliff within WCG-A for apprentices.
- Allow registered apprentices to access WCG-A for Apprenticeship funds to pay for costs, tools, books, living expenses, and housing for on-site training requirements.

▪ PERMEABLE CAREER PATHWAYS

- Establish credit and/or course equivalencies for all competencies and coursework instruction that has been approved by the Apprenticeship Related Supplemental Instruction Committee that then must be accepted by all state higher education institutions. This credit review process must include higher education institutions and the Professional Educator Standards Board. Successful graduates of state registered apprenticeship programs will have



earned an Associate degree based on the competencies and coursework instruction they are completing. Provide technical assistance to apprenticeship programs to enhance their Related Supplemental Instruction course competencies to achieve credit equivalency for degree completion, where needed.

- Evaluate the Multi-Occupational Trades (MOT) Associate degree offered by several community colleges in Washington State to identify if changes are needed, as well as how to expand this offering to additional state colleges and universities.
- Ensure pathways for all apprenticeship graduates to earn a Bachelor's degree (not only Applied Bachelor, which is what MOT limits) in their field of study.
- Explore whether the state should establish an apprenticeship university that provides onsite supplemental instruction through partnerships with other higher education institutions and apprenticeship programs.

▪ **SUSTAINABILITY & EXPANSION**

- Organize economic and industry sector platforms as part of the state's existing registered Apprenticeship Council to promote collaboration and expansion and to provide peer review of competencies and curriculum every five years.

Platforms will be organized for the following economic sectors:

- Building Trades
- Manufacturing and Engineering
- Health Care
- Education and Early Learning
- Technology and Biotechnology
- Creative Economy, Hospitality, and Personal Services

Additional platforms may be created as apprenticeship programs are developed.

- Add two seats to the Apprenticeship Council for innovative apprenticeship areas.
- Provide additional resources to the Dept. of Labor & Industries and the Apprenticeship Council to develop and help establish new innovative registered apprenticeship programs in non-traditional occupations. Create a centralized technical support system for new apprenticeship programs to help them start up and navigate the process.
- Require a plan for future sustainability for each newly approved state registered apprenticeship program.
- Assist existing state registered apprenticeship programs in adoption of new technologies.
- Require the Apprenticeship Council to consider whether the graduating apprentice will earn a living wage as part of the factors in the approval process for new state registered apprenticeship programs.



- Incentivize private and public sector participation and support of joint apprenticeship programs through tax policy and utilization standards.
 - Public agencies may establish local apprenticeship utilization requirements for its publicly funded services.
 - Add apprenticeship utilization to incentives provided in business opportunity zones.
 - For economic sectors without apprenticeship utilization currently, reduce B&O taxes upon a business successfully meeting apprenticeship utilization standards for their economic sector.
- Support development of state registered pre-apprenticeship programs in high schools and with certified non-profits.
- Organize an apprenticeship orientation day for every high school at the beginning of a student's junior year. Monitor Building Trades pilot of a virtual training center tour of 9 apprenticeship programs for high school students during the 2021-2022 school year for possible expansion statewide.
- Provide driver's education training course vouchers for individuals who qualify for free/reduced lunch and are enrolled in a state registered youth apprenticeship.