



Washington Office of Superintendent of **PUBLIC INSTRUCTION**

LASER Program

1. **Purpose:**

Washington State LASER (Leadership Assistance for Science Education Reform) is a state science-education program led by Washington STEM in partnership with the Office of Superintendent of Public Instruction, Educational Service Districts and school districts.

Washington State LASER is divided into ten regional Alliances, geographically aligned with Washington's Educational Service Districts. These Alliances offer leadership and technical assistance, including strategic planning support, within the five components of the LASER model developed by the Smithsonian Science Education Center: professional learning, curriculum, instructional materials support, assessment, and administrative and community support.

LASER plays a key role in ensuring that state science leaders maintain a learning community and develop their skills to provide leadership and assistance in service of removing barriers and structures to improve science/STEM implementation at the school and district levels.

2. **Description of services provided:**

Given the wide range of systems- and district-level needs across Washington, Washington State LASER offers a range of services to participating schools, districts, and educators.

Regional Alliances

- In several regions, the regional LASER Alliance serves as a co-operative hub for instructional materials across 15-30 districts—resulting in efficiencies in cost, labor, and professional learning across the districts.
- All Alliances contribute to developing regional science education leadership capacity by supporting the work of the AESD Science Fellows and additional STEM teachers and teacher leaders.
- Alliances typically spend approximately \$8300 (FY19-20) on materials and supplies to support the professional development activities in their regions. Materials included books for professional learning communities, consumable supplies for PD events and instructional materials training kits.
- Alliances provide leadership assistance to schools and districts to assess existing science/STEM systems and develop equity-focused science/STEM strategic plans.

Collaboration and Professional Learning Support for Alliance Directors

- LASER provides an equity- and justice-focused collaborative learning space for Alliance Directors, who in many cases are also Regional Science Coordinators and/or hold multiple STEM education leadership roles.

- Regular communication via email, monthly Alliance Director virtual workshops, and semi-annual Alliance convenings.
- Semi-annual convenings of Alliance Directors and partners

Statewide Professional Learning Opportunities

- Curriculum adoption/implementation workshops
- Strategic planning workshops
- STEM education webinars

3. **Criteria for receiving services and/or grants:**

Each Alliance sets goals that are responsive to local needs and aligned with LASER’s commitments to OSPI. In order to buffer against a “one size fits all” approach, each Alliance has different criteria for regional participation. All districts and schools are eligible to participate in regional LASER activity.

Beneficiaries in 2019-20 School Year:

Number of School Districts: 76
Number of Schools: 410
Number of Students: 238,708+ (indirect)
Number of Educators: 1251

Other: *Name other...* *Note: LASER engages with science education leaders from the classroom, to school/district leadership, to regional leaders. The *number of educators* here includes educators that benefited from direct LASER engagement. The *number of schools* includes schools that had educators directly involved, as well as schools that were within the purview of district science leaders (e.g., if a district-level high school TOSA engaged with LASER, the number of high schools they work with were counted). The *student impact number* is an indirect measurement, as LASER does not provide direct support to students. The number of students is calculated accordingly based upon the educators engaged with LASER (e.g. if a district-level high school TOSA engaged with LASER, the number of students attending the high schools that TOSA works with were counted, if all of the elementary teachers in school engaged with LASER, their students were counted, etc.)

Number of OSPI staff associated with this funding (FTEs): 0 FTE
Number of contractors/other staff associated with this funding: 0

FY20 Funding: State Appropriation: \$356,000
Federal Appropriation: \$0
Other fund sources: \$0
TOTAL (FY20) \$356,000

4. **Are federal or other funds contingent on state funding?**

No

Yes, please explain.

If state funds are not available, the state will not be eligible...

5. **State funding history:**

Fiscal Year	Amount Funded	Actual Expenditures
FY20	\$356,000	\$354,167
FY19	\$356,000	\$365,000
FY18	\$356,000	\$355,965
FY17	\$356,000	\$356,000
FY16	\$356,000	\$356,000
FY15	\$356,000	\$356,000
FY14	\$356,000	\$356,000
FY13	\$356,000	\$356,000
FY12	\$356,000	\$355,922
FY11	\$197,000	\$197,000
FY10	\$1,473,000	\$1,183,715

6. **Number of beneficiaries (e.g., school districts, schools, students, educators, other) history:**

Fiscal Year	Number of School Districts	Number of Schools	Number of Students	Number of Educators
FY20	76	410	238,708+ (indirect)	1251
FY19	161	330	77,500+	N/A
FY18	204	1800	977,841	N/A
FY17	204	1800	977,841	N/A
FY16	204	1800	977,841	N/A
FY15	204	1800*	977,841	N/A
FY14	204	1861	960,227	N/A
FY13	204	1886	954,287	N/A
FY12	204	1886	944,679	N/A
FY11	203	1,602	940,326	N/A
FY10	203	1,602	940,326	N/A

7. **Programmatic changes since inception (if any):**

Beginning in 2018-2019, LASER employed a more rigorous protocol for examining direct and indirect benefit to districts, schools, educators, and students. The result was a more focused engagement with fewer districts.

The number of Regional Alliances grew from 4 to 10. The North Sound and South Sound Alliances formed a coalition with PSESD in the Puget Sound region. Services expanded from elementary to include middle school and continued to expand into high school.

As programs and system components initially developed through LASER (since 1999) have been institutionalized in our state (e.g., instructional materials cooperatives and the Regional Science Coordinator positions at each ESD), LASER has evolved to meet contemporary science/STEM education reform needs. Previous activities included developing leadership capacity in teachers and administrators across the state through annual Strategic Planning Institutes and STEM Education Leadership Institutes; partnerships with OSPI, Association of Washington School Principals, Washington State School Directors Association, and Washington Association of School Administrators; instructional materials showcases; and professional learning opportunities around *A Framework for K-12 Science Education*, the *Next Generation of Science Standards*, and centering equity in science/STEM education.

In order to fully tap the capacity of the LASER network's expertise, the LASER Executive Director position was eliminated in 2018. This change resulted in distributed leadership and increased resources to the field. The Co-Directors provide leadership and consultation across Alliances, and liaise with the LASER Advisory group. Regional Alliance Directors share, implement, and refine best practices for improving student learning outcomes by acting at the systems and organizational levels. Washington STEM provides capacity-building support and technical assistance, including communications and advocacy, regionally and statewide.

8. **Evaluations of program/major findings:**

a. **Guide Science/STEM Implementation with Strategic Planning (Landscape).**

- i. **STEM Strategic Planning and Implementation:** 76 school districts across the ten Alliances were engaged in various forms of science/STEM strategic planning and implementation using resources developed or adapted by LASER as a framework. Of the 76 school districts, 49 districts received support for adopting and/or implementing research-based, NGSS-aligned instructional materials/curriculum with aligned professional learning. Twenty-eight school districts received STEM strategic planning and implementation support across the LASER pillars.
- ii. **LASER Toolbox:** In 2019-20, Alliances finalized three tools that support NGSS action planning for elementary principals and teachers, comprehensive district-level STEM strategic planning, and using student voice in STEM classrooms.
- iii. **Convening STEM Leaders** In September 2019 and March 2020, LASER convened 28 LASER Alliance Directors, ESD staff/leaders, and school district leaders to provide professional learning and collaboration toward the LASER goals.

b. **Increase Coherence across Initiatives and Programs.**

- i. **Science and CTE:** The Mountain to Harbor Alliance Director facilitated an opportunity in the Centralia School District to better align science and CTE instruction. The Southwest Alliance Director co-presented at the annual meeting of the Washington Association of Career and Technical Education Administrators in February 2020 with elementary principals and the CTE Director from Battleground School District on best practices for comprehensive STEM strategic planning. The North Central Alliance supported the development of a CTE cross-credit framework with an integrated 9th grade science course.
 - ii. **Curriculum adoption skills workshop:** The North Sound and South Sound Alliances, in partnership with Puget Sound Educational Service District, hosted a curriculum adoption virtual workshop in Spring 2020 for nine districts across 2 ESD regions. District leaders gained skills in adopting and implementing high-quality curricula and gained access to a network of leaders to support district curriculum adoption and implementation.
 - iii. **Student assessment:** Two Alliance Directors developed and conducted two 3D formative assessment workshops for sixty educators, leveraging ClimeTime work and combining best practices for academic assessment and eliciting student voice.
 - iv. **Alliances and STEM/STEAM Networks:** Seven out of ten Alliances have partnerships with the local STEM/STEAM Network in their region.
 - v. **Expanding Alliances:** Several Alliance have expanded their leadership and membership to include additional staff from their local ESD, district science/STEM leaders, CTE Directors, and STEM Network Directors.
- c. **Increase Cultural Competency and Proficiency of Science/STEM Leaders.**
- i. **Cultural Proficiency Framework Study:** Twelve science/STEM leaders have participated in ongoing Cultural Proficiency work since September 2019. In May 2020, all Alliance Directors reported increased understanding of cultural competency/proficiency, with four of ten Alliance Directors strongly agreeing. All but two of the Alliance Directors self-reported that the framework has informed their LASER work.
 - ii. **Professional Learning:** On June 18, 2020, LASER co-hosted a webinar with Washington STEM on [*Re-shaping STEM Education Toward Equitable Futures for Washington Students*](#). Speakers included Angela Jones J. D., Washington STEM CEO; Arthur Mitchell, STEM Equity Alliance; Derek Hoshiko, E3 Washington and For The People; Tammie Schrader, Educational Service District 101; and Sean Gibbons, Institute for Systems Biology.

9. **Major challenges faced by the program:**

The COVID-19 pandemic and long-term school closure proved to be a challenge for LASER beginning in March 2020. Several in-person professional learning opportunities were quickly converted to a remote format. Several districts and schools that planned to work with LASER had to cancel or modify plans. However, each Alliance adapted their work plans to meet the emergent needs of their partner districts and educators, resulting in some new

opportunities. Instead of developing ten tools for the LASER toolbox, cross-Alliance work groups coalesced around three open-access resources for the LASER toolbox. This was a benefit, as Alliances increased collaboration and created strong deliverables for the toolbox.

The main challenges faced by LASER are time, capacity, and funding to engage in sustained and impactful work. All of the Alliance Directors hold multiple roles, e.g. Regional Science Coordinators, STEM Directors, Science Materials Center Managers, and Science Specialists. As such, these leaders are responsible for myriad programs, initiatives, and administrative tasks, sometimes making it hard to articulate LASER's unique contribution to the increasingly complex landscape of science/STEM education in Washington. Another significant challenge has been understanding the impact of LASER activity, given the variation in structure, function, and reputation of the Alliances and different needs of districts and schools. Transition work to date has already helped address this challenge by identifying common goals and indicators for success moving forward. Multi-level evaluation that would establish impact on student learning has not been a focus, as spending has gone toward programs.

10. **Future opportunities:**

The future holds great promise for Washington State LASER. The collectively-established working goals for FY20-21, assuming continued legislative funding, include:

- Supporting a minimum of 20 schools/districts (two per Alliance region) in equity-driven, data-based science/STEM strategic planning and implementation within and across the six pillars of school/district operations, pathways, community and administrator support, assessment, curriculum, and instructional materials support.
- Doubling the number of districts impacted, with the additional funding that the state legislature approved beginning FY 21-22,
- Assisting at least 20 districts to identify and increase coherence across initiatives and pillars in order to best serve students systematically underrepresented in STEM, aligned to the Washington School Improvement Framework and complementary strategic planning efforts.
- Developing cultural proficiency within its leadership network
- Collaborating to create a STEM literate population, across demographics.

11. **Statutory and/or budget language:**

ESSB 6168, Sec. 520 (12)(a) \$356,000 of the general fund—state appropriation for fiscal year 2020 and ~~\$356,000~~ \$500,000 of the general fund—state appropriation for fiscal year 2021 are provided solely for the Washington state leadership and assistance for science education reform (LASER) regional partnership activities, including instructional material purchases, teacher and principal professional development, and school and community engagement events. The Office may require the recipient of these funds to report the impacts of the recipient's efforts in alignment with the measures of the Washington school improvement framework.

12. **Other relevant information:**

Alignment with Washington School Improvement Framework (WSIF):

To meet the new legislative guidance to report the impacts of LASER in alignment with WSIF measures, LASER has compiled baseline data on 2018-2019 regular attendance, 9th grade on-track, and dual credit measures for all of Washington's public school districts from available OSPI data. ELA/Math proficiency and growth, graduation and English language progress data provided by OSPI for WSIF is organized by school and not district. Given the use of deciles to compare growth, combining schools into districts may not be appropriate for supporting evaluation of LASER impact at the school district level in relation to WSIF indicators. LASER will continue to develop a plan to better understand the impacts of LASER in relation to the WSIF indicators, with additional indicators (e.g. student voice, assessment of strategic plans, time spent on elementary science) that guide LASER work more proximally. LASER welcomes additional guidance from OSPI on how proviso-funded programs should be aligning with WSIF indicators.

13. **Schools/districts receiving assistance:**

See [OSPI's Grantee List](#)

14. **Program Contact Information:**

Name: Ellen K. Ebert, Ph.D.

Title: Director, Learning and Teaching Science and Environmental and Sustainability Education

Phone: 360-725-4962

Email: ellen.ebert@k12.wa.us