



New and Expanded Cybersecurity and Nursing Programs: Final Report 2024



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Washington Student Achievement Council
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Information in this report was prepared in collaboration with Washington's public four-year institutions and the State Board for Community and Technical Colleges.

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SUMMARY

Background and Purpose of the Report

On March 10, 2022, Engrossed Second Substitute Bill (ESSB) 5693 was passed by the state legislature. It provided funding to higher education institutions for cybersecurity and nursing, to either establish new programs or expand enrollments in existing programs. The Washington Student Achievement Council (WSAC) was directed to coordinate with the institutions of higher education and the state board for community and technical colleges to prepare a progress report on the new or expanded programs to be submitted to the appropriate committees of the legislature, pursuant to RCW 43.01.036, by June 30, 2023. This is a final report, intended to complete the review of program progress, to be submitted by December 2024.

Cybersecurity and nursing are currently in high demand, and there is a shortage of skilled workers in both of these fields nationwide. The Washington economy reflects this trend in the form of widening workforce gaps. The programs covered in this progress report are working to help close these critical gaps.

Progress Highlights

The following tables provide high-level snapshots of where progress stands as of October 2024 at each institution and the State Board for Community and Technical Colleges. They include overviews of funding, program purpose, expenditures to date, enrollment expansions and new program developments. Table 1 covers cybersecurity programs and Table 2 covers nursing programs.

Table 1. Cybersecurity Programs – Progress as of October 2024

Institutions	Funding	Purpose	Expenditures	Expanded Enrollments to date	New Program Development
State Board for Community and Technical Colleges	\$4,500,000	Expand enrollments in cybersecurity 500 FTE	N/A	Increase of 50 FTEs was expected by Spring of 2024, with the majority of increases anticipated for 2024-25 academic year (450 new FTE by Spring of 2025). Funding recipients exceeded FY23 and FY24 goals by adding 267.5 FTEs.	New programs are still in development. New programs projected started enrolling in 2024-25. Fall 2024 enrollment data is not yet available.
	\$2,350,000	Cybersecurity Equipment & Supplies	\$2,350,000		COE established and fully operational as of end of FY23.
	\$205,000	Establish a Cybersecurity Center of Excellence (COE) at Whatcom Community College	N/A		COE established and fully operational as of end of FY23.

Central Washington University	\$613,000	Expand enrollments in cybersecurity	\$70,000 – dedicated lab server purchased and installed. \$6,000 – associated server software \$8,000 – faculty searches	Anticipate 5 students in the 25-26 AY in a specialization, minor, or certificate program, and 15 students in 26-27 AY.	
Eastern Washington University	\$2,810,000	Establish a Bachelor of Science in Cybersecurity degree option in the computer science program	\$800,000 (23-24 AY) Anticipated expenses for 24-25 AY – \$2,810,000	FY25 student enrollment in the Cyber Security program is currently at 59. Once full capacity is reached, the number of students will exceed 150.	Established two cybersecurity programs in fall 2022
Washington State University	\$2,056,000	Establish a bachelor’s degree in cybersecurity operations	\$2,056,000 – \$182K clustered multi-node (WSU Central IT); \$686K program dev personnel costs; \$34K faculty searches: \$786K computer lab remodels / faculty startup	Enrollments are anticipated to ramp up to 225 FTE	Start date - Fall 2023
Western Washington University	\$769,000	Expand capacity of Cyber Range Poulsbo	\$769,000	N/A	In AY 2023-24, 804 students accessed the range directly, along with another 378 students accessing the range through the PISCES program.

Table 2. Nursing Programs - Progress as of October 2024

Institutions	Funding	Purpose	Expenditures	Expanded Enrollments to date	New Program Development
State Board for Community and Technical Colleges	\$350,000 FY22 \$350,000 FY23	Maintain enrollment in medical assisting (MA-C), nursing assistant (NAC), and RN programs at Peninsula College	N/A	RN Program – currently maintaining 32 students. NAC Program – 22 students admitted in 2022. MA-C Program - 10 admitted in 2021; 5 students admitted in 2022	
	\$2,160,000 (GF-S FY 24) \$2,160,000 (GF-S FY 25) \$1,200,000 (WEIA FY 24) \$2,400,000 (WEIA FY 25)	Expand enrollments in nursing programs	N/A	Anticipate an increase of 400 FTEs by spring 2025. Admissions increased by 280 slots since AY 2021.	
Eastern Washington University	\$8,469,000	Establish a Bachelor of Science in Nursing program	\$6,515,000	Fall 2024 enrollment is 141 students. Anticipate 160 students in Spring 2025.	Essential personnel have been hired. Facilities have been leased and necessary equipment purchased.
UW Seattle School of Nursing	\$969,000	Increase enrollments in Accelerated Bachelor of Science in Nursing (ABSN) Program	\$968,273 (7/1/23 – 6/30/24)	Expansion from 64 to 128 new ABSN students each year is complete. Expanded enrollment went into effect in Spring 2023. The UW now admits two cohorts of ABSN students annually and plans to continue to do so for the foreseeable future..	
UW Tacoma School of Nursing	\$273,000	Establish a pre-licensure Bachelor of Science in	\$272,672 (7/1/23 – 6/30/24)	The goal is to admit the first cohort of pre-	Program is still in development

		Nursing (BSN) program		licensure BSN students in fall of the 2028-2029 academic year. This will require additional financial investments.	
Western Washington University	\$461,000	Establish a Master of Science in Nursing program	\$47,538 (AY 2022-23) \$118,591 (AY 2023-24)	9 students enrolled for AY 2024-25. Enrollment is projected to reach 30 students annually by 2026.	Program enrolling students in Fall 2024
	\$433,000	RN to Bachelor's in Nursing program	\$225,570 (AY 2022-23) \$95,099 (AY 2023-24)	44 students in AY 2023-24. 39 students for AY 2024-25 (as of 10/22/2024).	

CYBERSECURITY

State Board for Community and Technical Colleges

Cybersecurity. SBCTC has allocated funds for a planned expansion of 500 FTE by Spring of 2025, including a substantial amount of equipment and supplies purchases. The first enrollment increases began in the 2023 academic year, with the greater part of the increase anticipated in 2024-25. SBCTC continues to provide administrative and policy oversight to the now fully operational Cybersecurity Center of Excellence housed at Whatcom Community College.

Central Washington University

Cybersecurity. During the 2023-24 Academic Year, the Computer Science Department at CWU acquired a faculty member from another department with Cybersecurity expertise. This academic year, 2024-25 AY, a new tenure-track hire with a PhD in Cybersecurity joined the department. These two faculty are creating new cybersecurity courses, designing a minor and major in cybersecurity, and ensuring the appropriate equipment is available to students. With these dedicated faculty onboard, marketing can now increase, and enrollment increases are expected. They anticipate an additional 5 students in the 2025-26 AY and 15 students in the 2026-27 AY. In addition, Central has added a critical upgrade to their campus supercomputer and acquired a dedicated server.

Eastern Washington University

Cybersecurity. EWU established two bachelor of science degrees in cyber operations in fall 2022. The budget for this expansion includes 4 professor positions, 2 senior lecturers, a business manager, a cybersecurity technician, and graduate assistants. Active recruitments are underway to fill open positions. Eastern is also retrofitting their lab with specialized equipment and computer security features for the students to get the necessary training and experience for career success. Academic year 2024 enrollment was 35. Student enrollment in AY 2025 is currently at 59. Once full capacity is reached, the number of students will exceed 150.

Washington State University

WSU has established a new Bachelor of Science in Cybersecurity (BSCyber) degree program that will be offered in the Pullman, Everett, and Tri-Cities campuses. The WSU Board of Regents approved the program in March 2023 and was subsequently approved by the Northwest Commission on Colleges and Universities (NWCCU). They have begun advertising the program and the planned start date is fall 2023. Once the program is fully implemented, in about six years, WSU expects to have 150 students in Pullman, 45 in Tri-Cities, and 30 in Everett, for a total of 225.

Western Washington University

WWU received \$769,000 in funds for FY 2023 from the workforce education investment account for upgrading Cyber Range equipment and hiring additional personnel to support the range. This funding has allowed Cyber Range Poulsbo to significantly broaden the projects available for inclusion in the curriculum and to expand its ability to support other schools. Prior to receiving the funding, Cyber Range Poulsbo supported approximately 3-400 students per year. This year, the range has supported 1103 students, including 350 in K-12 schools for 8 districts across the state.

NURSING

State Board for Community and Technical Colleges

Washington's Community and Technical Colleges are working to expand enrollments in their nursing programs. They have hired full-time faculty, adjunct faculty, and clinical placement coordinators. They have also created new positions or increased hours for simulation coordinator positions, added capacity in their pre-licensure programs, and increased the number of students admitted. Data from the Washington State Board of Nursing shows that admissions in nursing programs at the community and technical colleges have grown. Colleges added 197 slots between 2021 and 2023, and 606 slots since 2018, a 35 percent increase. Post licensure numbers have also grown from 103 admitted in 2021 to 186 in 2023, creating 83 new slots.

Eastern Washington University

EWU has established a new bachelor of science in nursing program. The nursing commission granted initial approval to launch in August of 2022, and the Northwest Commission on Colleges and Universities (NWCCU) approved the program in March 2023. They are currently recruiting faculty and taking bids for simulation equipment. Eastern has invited 40 students and waitlisted 15 for fall 2023. An additional 40 students will be admitted in January 2024. The intention is to have a 40 student Fall Cohort and Spring Cohort over 2 years for a total of 4 cohorts. In spring 2025 they anticipate having 160 students in the pipeline.

University of Washington

UW-Seattle School of Nursing now admits two cohorts of students to its Accelerated Bachelor of Science in Nursing (ABSN) Program annually. This expansion brings enrollment in the ABSN program from 64 to 128 new students starting each year, with 64 students each fall and an additional 64 students each spring.

The UW-Tacoma School of Nursing & Healthcare Leadership continues to lay the groundwork for establishing a pre-licensure program at Tacoma, as part of an expansion of the existing pre-licensure program which currently operates out of the Seattle campus. To date, exploratory exercises have moved into the formal planning phase of the pre-licensure expansion. During the Summer of 2024, the Tri-Campus Executive Council (TCEC), developed a formal scope and charge for the pre-licensure expansion project. In November of 2024, a curricular revision taskforce convened and began the work of revising the existing pre-licensure curriculum. While the target date for enrollment was initially anticipated for AY 2026-27, this date has been adjusted to AY 2028-29. This revised launch date was decided upon at the Tri-

campus level, to ensure necessary alignment of resource coordination and compliance requirements through the Washington state Board of Nursing (WABON), and the Commission on Collegiate Nursing Education (CCNE).

Western Washington University

RN to Bachelor's in Nursing program. WWU is making progress in expanding enrollments in this program. They had 44 students in the 2023-24 academic year and 39 students in 2024-25 (as of Oct. 22). They anticipate that enrollment will expand to around 50 students per year, close to capacity, as enrollment in their Associate Degree Nursing (ADN) partner programs at Bellingham Technical, Whatcom CC, and Skagit Valley CC expand.

Master of Science in Nursing program. This program began enrolling students in Fall 2024. The MSN offers two tracks, Nursing Leadership and Administration and Nursing Education. Program enrollment is projected to reach 30 students annually by 2026.

General Comments

Overall, the State Board for Community and Technical Colleges and the state's four-year higher education institutions have made significant progress in advancing their goals for cybersecurity and nursing. The ongoing expansion of enrollments in existing programs and the planned new programs, once fully established, will play a vital role in addressing workforce shortages in these critical fields.

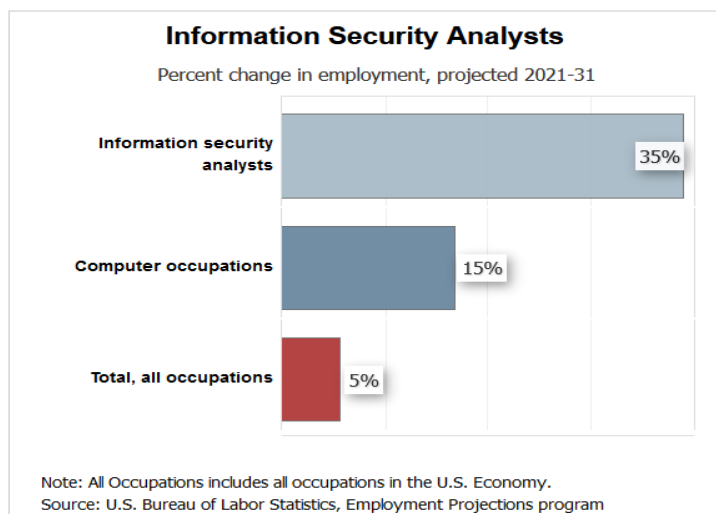
Efforts aimed at improving equitable opportunities. The institutions are fully engaged in outreach activities to expand equitable opportunities in cybersecurity and nursing. Efforts range from employing recruiting strategies that include a focus on underrepresented populations to providing targeted support to help underrepresented minority and first-generation students as they persist in their studies and complete programs.

CYBERSECURITY PROGRAMS

Over the past five years, cybersecurity-related job postings have surged markedly, as employers sought skilled workers in areas such as emerging infrastructure and hardware, artificial intelligence, data, and next generation cybersecurity. Demand for cybersecurity analysts is predicted to grow 32 percent by 2028 and jobs for information security analysts is projected to grow by 35 percent from 2021 to 2031.ⁱ As shown in Figure 1, this far exceeds the average growth rate for all occupations.

As more businesses focus on enhancing cybersecurity, they need information security analysts to secure new technologies from outside threats or hacks. A growing shift to more remote work and the rise of e-commerce have increased the need for enhanced security, contributing to the projected employment growth of cybersecurity workers over the decade. Demand is likely to increase across a diverse range of industries. For example, strong growth in digital health services and telehealth will increase data security risks for healthcare providers. More analysts are likely to be needed to safeguard patients' personal information and data.²

Figure 1. Projected percent change in employment 2021-31



The shortage of cybersecurity workers exists across the nation, but it is even more pronounced in Washington State. According to CyberSeek.org, a project supported by the National Initiative for Cybersecurity Education dedicated to helping close the cybersecurity skills gap, Washington State had 24,190 individuals employed in the cybersecurity workforce in spring 2023 but nearly 10,000 cybersecurity job openings. The supply of workers in Washington is classified as “very low” with a supply/demand ratio of 2.4, compared to 2.1 nationally.³

Washington State is experiencing a shortage of cybersecurity trained professionals to fill available jobs. But the gap is not due to a lack of interest among prospective employees. A primary driver of the gap is a shortage of education and training opportunities. Colleges and universities do not have the capacity to teach enough people to keep up with employer demand. In the last year, Washington State saw increases in the number of people employed in the technology industry and in its economic impact to the state. According to the CompTIA Cyberstates 2021 research report, Washington State gained 5,222 technology jobs between 2019 and 2020, third in the nation behind Texas and California⁴. The report also ranks Washington State as first in the country for technology’s economic impact as a percent of the state’s economy. As operations in many industries are becoming increasingly digital, demand for skilled information security and cybersecurity experts in Washington is likely to continue to expand.

The National Initiative for Cybersecurity Education (NICE) has established a framework to better define the cybersecurity workforce⁵. It has become a fundamental reference for describing and sharing information about cybersecurity work by dividing it into categories and tasks. Table 3 provides an overview of this framework, with estimates of job openings in spring 2023 for each category.⁶

Table 3. NICE Framework Common Cybersecurity Job Categories

Security Provision (8,166 openings)	Conceptualizes, designs, procures, and/or builds secure information technology (IT) systems, with responsibility for aspects of system and/or network development.
Operate and Maintain (8,039 openings)	Provides the support, administration, and maintenance necessary to ensure effective and efficient information technology (IT) system performance and security.
Protect and Defend (5,936 openings)	Identifies, analyzes, and mitigates threats to internal information technology (IT) systems and/or networks.
Oversee and Govern (5,871 openings)	Provides leadership, management, direction, or development and advocacy so the organization may effectively conduct cybersecurity work
Analyze (3,682 openings)	Performs highly specialized review and evaluation of incoming cybersecurity information to determine its usefulness for intelligence.

According to Cyberseek.org, employment gaps exist in every cybersecurity workforce category. The programs discussed in this section, whether focused on expanding enrollments or on the development of a new program, are all designed to address this rising demand.

State Board for Community and Technical Colleges (SBCTC)

Background and History of the Cybersecurity Program

In response to growing demand for cybersecurity workers, Washington State’s community and technical college system is planning to expand cybersecurity program offerings by an additional 500 fulltime student enrollments (FTE) by Spring of 2025. Some of the most popular programs currently include Associate of Applied Science (AAS) and Bachelor of Applied Science (BAS) in Cybersecurity, AAS in Cyber Defense Forensics, AAS and BAS in Cybersecurity & Networks, and AAS in Cybersecurity Network Administration. Additionally, several colleges offer transfer degrees with a focus on cybersecurity.

The majority of Washington State’s community and technical college cybersecurity programs fall under the “Operate and Maintain” category in the National Initiative for Cybersecurity Education framework described above. Some of the most common job titles in this category include Systems Security Analyst, Network Operations Specialist, System Administrator, Data Analyst, Technical Support Specialist, and Database Administrator. The second most common program area is “Oversee and Govern,” which includes jobs such as: Cyber Instructor, Curriculum Developer, Information Systems Security Manager, IT Project Manager, IT Program Auditor and Cyber Policy and Strategic Planner.

There are significant gaps among race and gender in technology employment in Washington State. Black Washingtonians represent 5 percent of the State’s workforce but fill only 2 percent of technology jobs. Latinos represent 11 percent of the workforce but only 4 percent of technology jobs. Women represent 48 percent of the workforce but fill only 24 percent of technology occupations.

Community and technical colleges in Washington are at the forefront of efforts to address racial and economic injustices, including closing skills gaps as people pursue employment opportunities like those in technology. Nearly half of the state’s community and technical college students are students of color and most are low or moderate income. Many are working adults, often parents with children. Expanding pathways to high-wage jobs, like cybersecurity and others in the information technology sector is a fundamental step in achieving racial equity and social justice.

SBCTC: EXPANDING ENROLLMENTS IN CYBERSECURITY

Funding and expenditures

SBCTC’s use of funds in efforts to expand enrollments in cybersecurity fall under two categories:

- Cyber500 FTES: 500 FTE Enrollments at \$9,000 FY 2023-25 = \$4,500,000
- Cybersecurity One-time Equipment & Supplies FY 2023 = \$2,350,000

Cyber500 FTES

Table 4 below provides a visual breakdown of the funding distribution and anticipated increases in enrollments across a range of SBCTC campuses by Spring of 2025. Use of funds will vary by college. Most common uses will include faculty salaries, curriculum development, community outreach (including K-12, community-based organizations, Workforce Development Councils, Joint Base Lewis-McCord), student support services (including direct student aid, advising, navigation, career planning), and career-connected learning opportunities.

Table 4. SBCTC: Cyber500 FTE Allocation

College	Credential	Credit Bearing	Allocated FTE
FY23 Growth			
Renton	Short Cert & AAS-T	Y	35
FY24 Growth			
South Puget Sound	AAS	Y	15
FY25 Growth			
Edmonds	Certificate	Y	7
Tacoma	AAS	Y	5
Edmonds	Certificate	Y	16
Bellevue	AAS	Y	14
CC Spokane	Certificate	N	20
CC Spokane	Certificate	N	20
Olympic	AAS-T	Y	20
Tacoma	BAS	Y	21
Edmonds	Certificate	Y	24
Edmonds	Degree	Y	59
Green River	Certificate	N	21
Green River	BAS	Y	34
Green River	AAS-T	Y	59
Bellevue	BAS	Y	31
Bates	Cert, AAS, BAS	Y	33
Spokane Falls	AAS	Y	20
Lake Washington	AAS	Y	20
Peninsula	AAS, AAS-T	Y	26
TOTAL			500

Cybersecurity One-time Equipment & Supplies FY23

One-time equipment and supply funds were made available to colleges in support of FTE growth in the amount of \$2,350,000. The following table outlines the total dollar amount allocated to FTES and equipment funding that each college received.

Table 5. SBCTC Cybersecurity Equipment & Supplies Allocation

College	Allocated FTE	FTE Funding	Equipment Funding	Application Total
Bates	33	\$297,000	\$144,309	\$441,309
Bellevue	31	\$279,000	\$135,563	\$414,563
Bellevue	14	\$126,000	\$85,000	\$211,000
Edmonds	7	\$63,000	\$85,000	\$148,000
Edmonds	24	\$216,000	\$104,952	\$320,952
Edmonds	59	\$531,000	\$258,007	\$789,007
Edmonds	16	\$144,000	\$85,000	\$229,000
Green River	21	\$189,000	\$91,833	\$280,833
Green River	34	\$306,000	\$148,682	\$454,682
Green River	59	\$531,000	\$258,007	\$789,007
Lake Washington	20	\$180,000	\$85,000	\$265,000
Olympic	20	\$180,000	\$85,000	\$265,000

Peninsula	26	\$234,000	\$113,698	\$347,698
Renton	35	\$315,000	\$153,055	\$468,055
Spokane CC	20	\$180,000	\$85,000	\$265,000
Spokane CC	20	\$180,000	\$85,000	\$265,000
Spokane Falls	20	\$180,000	\$85,000	\$265,000
South Puget Sound	15	\$135,000	\$85,000	\$220,000
Tacoma	5	\$45,000	\$85,000	\$130,000
Tacoma	21	\$189,000	\$91,833	\$280,833
TOTAL	500	\$4,500,000	\$2,349,939	\$6,849,939

SBCTC CYBERSECURITY CENTER OF EXCELLENCE

Background and History

Washington state’s twelve Centers of Excellence link business, industry, labor, and educational systems to create a highly skilled and readily available workforce critical to the success of the state’s economy. Through ongoing investment, centers are charged with narrowing the gap between employer workforce needs and the colleges’ supply of work-ready graduates. They are critical to the state’s strategy of sustaining an innovative and vibrant economy. SBCTC established these Centers of Excellence in 2004 to help the state maintain its competitive economic and industry advantage. In 2009, the Legislature established the centers in state statute and tasked them with closing skills gaps and building “a diverse workforce for strategic industries.”

Each center specializes in an economic area important to Washington’s economy, benefiting all community and technical colleges in the state. Advised by representatives from business, labor and education, the centers serve as a way for each sector to stay current on emerging trends and training and workforce needs. Centers are hosted by a local community or technical college, ensuring strong links between education, business, and labor sectors. Each center is expected to play a critical role in five key areas, as shown in Table 6.

Table 6. Centers of Excellence – Critical roles in five key areas

Economic Development	Support workforce development and its local economic driver industry by serving as the link between local, regional, national, and international education, labor, and business organizations.
Industry Sector Strategy	Act as a link between education and industry, ensuring that teachers, counselors, and others have the latest knowledge of the field and curricula accurately reflect evolving business needs.
Education, Innovation, & Efficiency	Continually look for ways to improve what and how students learn. In addition to keeping curriculum current, the centers advocate for expanded apprenticeship opportunities, credit for prior learning and industry-recognized credentials.
Workforce Supply and Demand	Provide research and analysis to their partners on the latest information specific to their driver industry. Sectors use that information to find ways to close skills gaps, expand training capacity and incorporate best practices into educational programs.
Equity and Access	Work with industry and colleges to maximize student and workforce potential within a culture that advances racial, social, and economic justice in service to their diverse communities.

The Center of Excellence for Cybersecurity (Cyber COE) at Whatcom Community College (WCC) partners with the National Cybersecurity Training & Education Center (NCyTE) to support the cybersecurity workforce education pipeline in Washington state. The state faces a daily onslaught of hacking and ransomware attacks and a dangerous shortage of cybersecurity experts. In combination with attending to the 5 core COE duties, the Cyber COE will provide support to the community and technical colleges that are working to expand capacity to enroll 500 more full-time cybersecurity students.

Challenges

The major challenge to early implementation of the Cyber COE was staffing. The tight labor market and extraordinary demand for cybersecurity professionals with additional leadership capabilities required WCC to recruit a leader over an extended period of time, from mid-summer into late fall of 2022. The posting was distributed widely across statewide and national hiring venues. Despite this challenge, the COE launched under the capable interim leadership of staff from Whatcom Community College's NCyTE Center (National Cybersecurity Center). A highly qualified director was hired in December 2022 and has been at the helm since.

Establishment of the program

The Cyber COE was established on July 1, 2022, through an allocation from SBCTC to the Center's host college, WCC. The COE's FY 2023 annual workplan focuses on five primary activities and outcomes:

1. Establishing an operational COE: Hiring a director, launching a website, establishing an advisory committee, developing an annual plan, and building relationships with other COEs.
2. Developing employer engagement and industry connection seminars for professional-technical faculty and deans at four community and technical college (CTC) locations statewide.
3. Collaborating with EWU to develop a cybersecurity endorsement for secondary educators in order to create pathways between high schools and colleges.
4. Establishing and leveraging statewide partnerships with industry leaders to promote industry awareness of the CTC talent pool and provide direct feedback to instructional programs to meet the rapidly changing needs of employers.
5. Offer instructional program development workshops to CTCs to support Cyber500 program expansion and alignment with industry standards.

In the two quarters of FY 2023 (year-to-date for this report), the COE developed multi-faceted plans for outreach, communication, and equitable access to opportunities that it is currently carrying out. Those efforts include:

- Coordinating and launching stipend promotion for WA faculty for three virtual faculty development and cybersecurity trainings facilitated by the Western Academy Support & Training Center (WASTC). This included Intro to Cloud with Azure (01/28/23 – 02/25/23), Microsoft Security Operations (03/25/23 – 04/22/23), and IT Essentials v8 (03/25/23 – 04/22/23).
- Developing and delivering employer engagement and industry connection seminars for professional-technical faculty and deans at 4 locations across the state (Kent, Spokane, Vancouver, and Seattle).
- Engaging in developmental discussions with EWU faculty on establishing a K-12 teacher cyber endorsement.

- Building partnerships in Washington State, leveraging existing partnerships with the NCyTE Center in preparation for industry focus groups and employer engagement during the NICE conference in Seattle (June 2023).
- Creating instructional program development workshops by leveraging content developed by the NCyTE Center and delivering virtually to CTCs. These workshops will support CTCs as they develop or revise cybersecurity programs and expand enrollment capacity matched to industry standards.

Funding and expenditures

SBCTC’s allocation to Whatcom Community College for the Cyber COE was \$205,000. Funding is budgeted for Center of Excellence Director and program coordination support, website hosting and design, basic office goods for one staff person, travel to community and technical colleges and major cybersecurity events, and one-time personal services contracts to create the COE website and digital collateral. This funding is leveraged with a contribution from the NCyTE Center to support coordination.

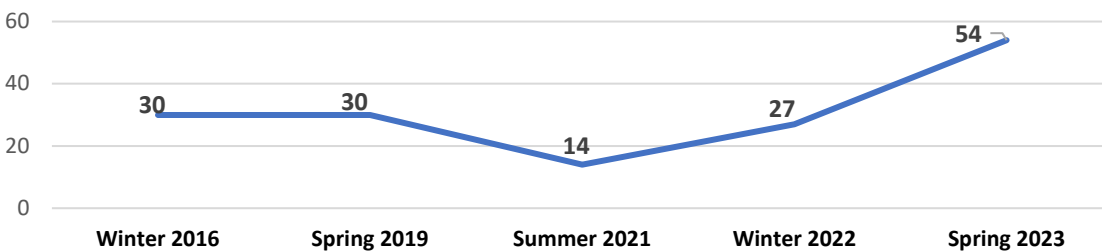
Central Washington University (CWU)

Background on the Cybersecurity Program

The current CWU Computer Science Department cybersecurity program consists of a single 4-credit cybersecurity course (CS 430) that students may choose as an elective in the B.S degree program in computer science. This course was first offered in winter 2016. The course focuses on the basic components of computer security; identifying and comparing different computer security threats; experimenting with and implementing cryptographic encoding/decoding methods; analyzing, developing, and utilizing encryption policies and software solutions. Since the B.S. computer science program is comprehensive, it prepares students for jobs that require selection, deployment, and development of cybersecurity tools. Recent graduates have been employed as cybersecurity specialists in state agencies and higher education. But, due to staffing issues and the need to focus on courses required for the major, the department has not offered the cybersecurity course very often in recent years.

Figure 2 below shows the variation in the number of students that were enrolled in the course since Winter 2016. In the quarters the course was offered in 2016, 2019 and 2022, there were several students waitlisted as well. In Spring 2023, enrollment is considerably higher, due to the course being offered in two sections.

Figure 2. Number of students enrolled in CWU CS 430 cybersecurity course 2016-2023



Challenges

The department still has personnel shortages. They currently don’t have sufficient personnel to offer the cybersecurity course more than once every two years or to develop new cybersecurity courses. Because the course fills up quickly, students with early registration (such as seniors) are the only ones who get into the course. Under these circumstances, students who would normally qualify for early enrollment but have financial aid issues are often shut out of the course. This is a potential equity issue. The current funding from the state will expand capacity to help address this issue.

Program Expansion

During the 2022-23 academic year, CWU searched for a tenure-track faculty member with expertise in cybersecurity. As of April 2023, an offer has been presented to a highly qualified candidate, which is currently pending. The person hired for this position will be tasked with leading and expanding the program. In addition, a faculty member with expertise in cybersecurity will be transferring to the computer science department from a different department on campus starting in fall 2023.

The number of offerings and enrollment have been increasing. Based on student interest, CWU could offer this course every quarter, and hiring a faculty member with expertise in cybersecurity will allow them to develop more courses related to cyber security.

Funding and expenditures

CWU received \$613,000 from the workforce education investment account—state appropriation to expand CWU’s cybersecurity capacity by adding additional faculty resources in the department of computer science. Non-salary expenditures to date include:

- Expenses associated with faculty searches (~\$8,000).
- A dedicated lab server purchased and installed (~\$70,000).
- Associated server software (~\$6,000).

Plans for remaining funds

CWU plans to use the remaining funds for the start-up package for the new tenure-track faculty and to jumpstart items on the cybersecurity timeline (see Figure 3).

Equipment to be purchased and installed during the 2025 or 2026 FY:

- Forensics systems (~\$25,000).
- Dedicated cybersecurity lab with individual workstations (~\$115,000).

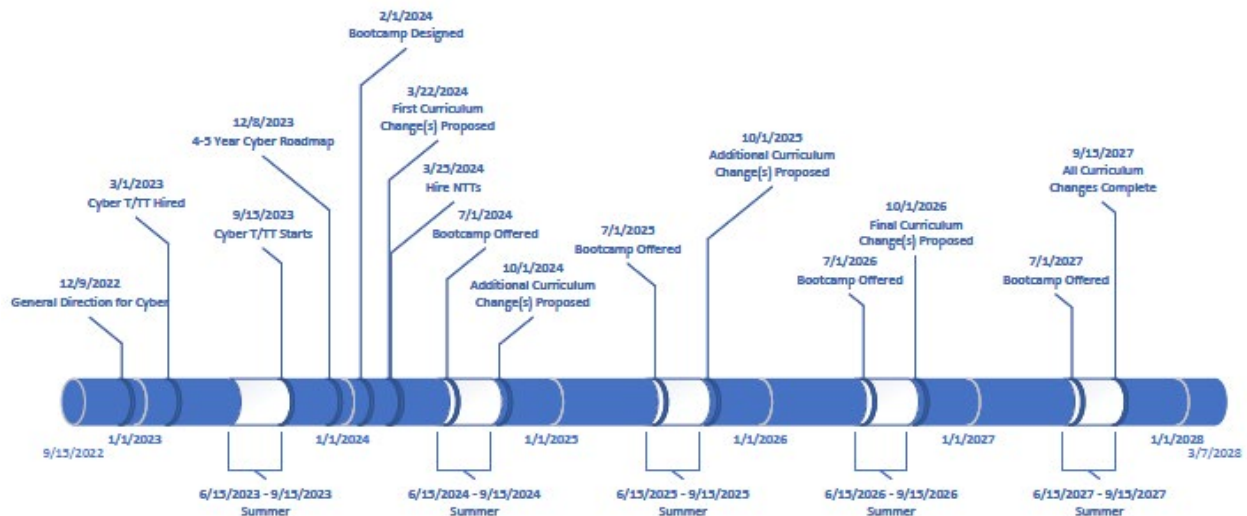
Additional future expenses:

- Promotion and recruitment materials and personnel time.
- Scholarships/grants for students pursuing a major in cybersecurity.

Enrollment

In fall 2022, the department chair formed an ad hoc committee to develop the following timeline for expanding CWU’s cybersecurity program (see Figure 3). While many of the mileposts on this timeline have already passed, it is still a good metric to judge their progress against.

Figure 3. Planned Timeline for CWU Cybersecurity Program



Enrollment increases are anticipated beginning in the coming 2025-26 academic year since the remainder of the 2024-25 year will be devoted to building the program. Estimated future enrollment increases include 5 students in a specialization, minor, or certificate program in the 2025-26 academic year and 15 students in the 2026-27 academic year as their marketing campaign reaches current high school or future transfer students.

Eastern Washington University (EWU)

Background and Establishment of the Cybersecurity Program

EWU developed two bachelor's programs in this field in Fall 2022: a Bachelor of Science in Computer Science (BSCS) Cyber Operations and a Bachelor of Science (BS) in Cyber Operations. The two programs are similar. The primary difference is that the BSCS Cyber Operations program requires more math and natural science coursework than the BS Cyber Operations program.

In EWU's Bachelor of Science in Cyber Operations, students learn all aspects related to cyberspace operations that are both technical — networking, malware analysis, digital forensics and incident response, attacking and defending — and non-technical, including the ethical, privacy, legal and human-centered impacts of the field. The Bachelor of Science in Computer Science Cyber Operations builds upon the cyber operations BS with a much deeper understanding of the mathematics and computer science needed for cybersecurity. In this more advanced program, students develop a deeper understanding of cryptography and the reverse-engineering of programs, as well as the technical and non-technical aspects of cyber operations.

These programs focus on preparing graduates with the following cybersecurity-related skills:

- Reconnaissance skills: packet analysis, network traffic sniffing, forensics, network and system mapping, binary analysis, and reverse engineering.
- Offensive skills: network engineering, ethical hacking, penetration testing, Distributed Denial of Service (DDoS) attacks, and website exploitation.
- Defensive skills: incident response, network system administration, and cloud security.
- Critical thinking skills: analyzing large and complex data sets, engaging in proactive and reactive actions against threats.

The range of careers program graduates can prepare for include Cybersecurity Analyst, Security Operations Center Analyst, Software Developer, Penetration and Vulnerability Tester, Network Engineer, and Systems Engineer.

In association with these programs, EWU has hired talented faculty for the cybersecurity program and has established strong partnerships in the Spokane area. For example, they are partnering with the City of Spokane to work with the Wastewater Treatment Facility's cybersecurity team. Eastern is also developing a master's program in cybersecurity, which is anticipated to launch in September 2025.

Outreach Efforts

Outreach efforts and communication strategies to market the new program include television commercials; emails, letters, texts sent to juniors and seniors in WA, OR, CA, AK; partnerships with local high schools and middle schools; cybersecurity competitions for regional students of all ages; and free summer cybersecurity camps for students and teachers.

Efforts aimed at improving equitable opportunities in the field include recruiting centered on underrepresented populations, free summer camps for female and American Indian and other underrepresented populations, and scholarships for DEI in cybersecurity. Planned future outreach and equitable access efforts include recruiting and information commercials in languages other than English,

continuous outreach to local schools, high school visits local and statewide, and continued outreach with cybersecurity competitions virtually.

BSCS and BS Cyber Operations Degrees: Funding, FY24 Allocations, and Future Anticipated Expenses

The following table outlines how the funding is to be distributed among salaries and other expense categories:

Table 7. EWU Funding and Expenditures

Description	Budget	FY24 Expenses	FY25 Anticipated Expenses
Salaries	850,000	275,000	575,000
Benefits	261,000	75,000	186,000
Direct Expenses	1,699,000	450,000	1,249,000
Total	2,810,000	800,000	2,010,000

Salaries. The budget includes 4 professor positions, 2 senior lecturers, a business manager, a cybersecurity technician, and graduate assistants. Active recruitments are underway to fill open positions

Lab Retrofitting. Funds will be used to design the lab as well as purchase tables, podiums, 40 computers for the lab, office supplies and computer software, video conferencing, cybersecurity marketing, research equipment and configuring the office spaces. The aim is to have specialized equipment with specialized computer security features for the students to get the necessary experience for career success. The labs that are being retrofitted will be used by both students in the bachelor’s and master’s programs. Eastern is also purchasing laptops, equipment, and software for use in these programs.

Current and Estimated Future Enrollments in the Program

FY25 student enrollment in the Cyber Security program is currently at 59. FY24 enrollment was 35. Once full capacity is reached, the number of students will exceed 150. Enrollments have substantially increased since the inception of the program, and EWU is confident that this expansion will continue.

Washington State University (WSU)

Background and history of the cybersecurity program

The new Bachelor of Science in Cybersecurity (BSCyber) degree program at Washington State University (WSU) aims to meet burgeoning demand for computer scientists with expertise in cybersecurity. In addition to learning in traditional computer science courses, students will take classes and learn crosscutting concepts and skills in confidentiality, integrity, privacy, risk, adversarial thinking, and security analysis. The curriculum will include topics on security related to data, software, hardware, connection, cyber systems, and cybersecurity threats impacting organizations and society.

The BSCyber program will be complementary to the existing BS in Computer Science (BSCS) and BS in Software Engineering (BSSE) programs at WSU. As sister disciplines, computer science (CS), software engineering (SE), and cybersecurity share the fundamentals of a computer science curriculum. Where they differ is in advanced courses—CS focuses on topics in artificial intelligence and machine learning, data science, algorithm design, distributed and networked systems, operating systems, parallel computing, bioinformatics, and other topics of interest to the students. SE focuses on advanced courses in software design and development, software testing and validation, software maintenance, and software management and integration. Cybersecurity focuses on security related to data, software, hardware,

connection, and cyber systems, and specialized topics around forensics, reverse engineering, virtualization, and cybersecurity threats impacting organizations and society.

The BSCyber degree program is offered on the Pullman, Everett, and Tri-Cities campuses. All the courses required for the BSCyber program are offered at the Pullman and Tri-Cities campuses. At the Everett campus, BSCyber program is a degree completion program, similar to the existing BS Mechanical Engineering (ME), BS Electrical Engineering (EE), and BS Software Engineering programs offered at Everett. The lower division portion of the curriculum will be offered by the regional community colleges through the Associate of Science for Transfer (AS-T) degree.

The BSCyber degree program will train students to design and build secure information networks, secure applications, secure systems, secure critical infrastructures, security tools such as firewalls, and secure methods of transporting data. The program will prepare graduates for careers in cyber defense as well as cyber operations, with emphasis on cyber operations where the demand for professionals is greater. Examples of job titles graduates can pursue include cyber security analyst/engineer, security architect/engineer, malware analyst, cloud security analyst, digital forensics analyst, intrusion detection analyst, Red/Blue/Purple Teamer, DevSecOps Engineer, and vulnerability researcher.

Establishment of the program

WSU initiated the internal process for establishing the BSCyber degree program in Summer 2022.⁷ The degree proposal was reviewed and approved by the WSU Provost's office and WSU Faculty Senate in January 2023. WSU Board of Regents discussed and approved this program at their March 9-10 meeting. The BSCyber program offering was then submitted to the Northwest Commission on Colleges and Universities (NWCCU). NWCCU is recognized by the United States Department of Education (USDE) and the Council on Higher Education (CHEA) to accredit postsecondary institutions and is the accrediting body for WSU. They have received approval from NWCCU for the BSCyber degree program, which allows them to advertise the program. The first batch of students were admitted to the program in the Fall 2023 semester.

The Voiland College of Engineering and Architecture (VCEA) at WSU started the process of hiring up to nine faculty in cybersecurity across the Pullman, Everett, and Tri-Cities campuses in 2022-23 academic year (AY). It was a combined search process with the search committee comprising faculty from all three locations and candidates having the option of choosing the campus(es) that best suit their background and career plan. In addition, WSU plans to add three staff positions (e.g., academic coordinator) to support the BSCyber program. Two tenure track faculty and one academic advisor have been hired at Pullman. One career track faculty and 0.5 FTE (full time equivalent) academic advisor have been hired at Everett, and a second career track faculty member is currently in background check. WSU Tri-Cities has hired one tenure track professor and one visiting professor. Hiring of one tenure track and one career professor is underway for Fall 2025.

WSU has engaged with industrial partners and advisors to ensure degree programs are meeting industry needs. This network includes the presence of many of the region's high-tech companies serving on one or more advisory boards (including Microsoft, Boeing, SEL, PNNL, Paccar, Google, Amazon, Nordstrom, Proof Point, and others). The BSCyber program is working with the WSU admissions office and recruiters and the office of international programs to ensure they are reaching out to the largest set of potential students within the state as well as outside the state. They intend to leverage the synergy between course requirements for the existing BSCS, BSSE degree programs and the proposed BSCyber degree programs to ensure faculty and students have flexibility in terms of course offerings and electives. WSU Everett Office of Admissions is pursuing strategic partnerships with local

community colleges to build pathway options that result in a smooth and early transition from aligned two-year pathways into the BSCyber program.”

Efforts aimed at improving equitable access

WSU has a number of offices and programs to support underrepresented minority and first-generation students.

- MESA (Mathematics, Engineering, Science Achievement) is a Career Connected Learning program that supports students from underrepresented populations in STEM career pathways. All of their programs aim to increase representation of women and people who are Black, Indigenous, Latino/Hispanic or Native Hawaiian/Pacific islanders in STEM fields. The programs support students through college and as they prepare for careers in STEM. They provide students with tutoring, specialized courses, mentorship, and supportive networks. Students who participate in MESA receive one-on-one and group support to help them reach their goals: Internship and career planning, Academic excellence workshops, Industry field trips to local companies, Dedicated study space.
- The Louis Stokes Alliance for Minority Participation (LSAMP) Program is aimed at increasing the quality and quantity of students successfully completing science, technology, engineering, and mathematics (STEM) baccalaureate degree programs and increasing the number of students who are interested in and are academically qualified for matriculating into programs of graduate study.
- The Team Mentoring Program (TMP) is designed to maximize the experience of students pursuing STEM and Pre-Health disciplines in order to increase retention, achievement, and graduation rates. The Program helps mentees connect with their college, participate in academic and career building experiences, and prepare for the next steps.
- WSU is a First-Gen Forward Institution, recognized for its dedication to serving first-generation college students. WSU joined the inaugural cohort of 80 universities and colleges across the nation selected by the Center for First-Generation Student Success, an initiative of the Student Affairs Administrators in Higher Education (NASPA) and The Suder Foundation.⁸
- The WSU Office of Multicultural Student Services (MSS) seeks to facilitate the best undergraduate experience for multicultural, first generation, and other underrepresented students through the provision of culturally relevant services to enhance their learning and development and foster their successful transition, adjustment, persistence, achievement, and graduation.
- WSU TRIO Student Support Services programs support first generation and low-income students and students with disabilities at both Pullman and Tri-Cities. WSU Tri-Cities also has a TRIO STEM program with dedicated support for those students pursuing degrees in STEM including Cybersecurity.
- WSU Tri-Cities and its local community college partner, Columbia Basin College, was awarded a grant from the Community College Research Initiative to increase the number of low-income students transferring to STEM degrees at WSU.

Funding and expenditures

The total funds received in FY23 is \$2,056,000 annually, with \$923,000 going to Pullman, \$570,000 to Tri-Cities, and \$563,000 to Everett. Once the BSCyber program is established with enrolled students on all campuses, the funds budgeted will go toward 9 faculty (3 on each campus), 3 exempt academic coordinators, and 2 graduate assistants to support the degree program, as shown in Table 8.

Table 8. WSU: Cybersecurity – Anticipated Full Program Funding and Expenditures

<i>Funding Received</i>	<i>FTE</i>	<i>Salaries</i>	<i>Benefits</i>	<i>Operations</i>	<i>Total</i>
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<i>Faculty</i>	9.00	1,251,000	384,000	-	1,635,000
<i>Exempt</i>	3.00	189,000	59,000	-	248,000
<i>Graduate Assistant</i>	2.00	75,000	57,000	-	132,000
<i>Computer Loan Program (All campuses Operations)</i>				14,000	14,000
				27,000	27,000
Total		1,515,000	500,000	41,000	2,056,000

During this initial year faculty salaries have been expensed to support curriculum development (see Table 9). In addition, on each campus faculty searches have been conducted for full-time faculty, with most of the funds used to equip student computer labs and build the IT infrastructure needed for the program.

Table 9. WSU: Cybersecurity Funding and Expenditures FY 2023

<i>FY23 Expenditures</i>	<i>FTE</i>	<i>Salaries</i>	<i>Benefits</i>	<i>Operations</i>	<i>Total</i>
<i>Faculty</i>	5.0	679,210	165,822	-	845,032
<i>Exempt</i>	1.0	55,542	17,405	-	72,947
<i>Civil Service</i>	.50	36,048	9,857	-	45,905
<i>Graduate Assistant</i>	.25	-	-	-	-
<i>IT Infrastructure and Equipment Operations</i>				878,969	878,969
				144,394	144,394
<i>Pending Quotes and Curriculum Dev</i>				68,753	68,753
Total		770,800	193,084	1,092,116	2,056,000

Planned additional recruitment and retention strategies

WSU will engage with colleagues at Pacific Northwest National Laboratory (PNNL) to review recruitment and retention strategies. They plan to be diligent to ensure that they have scholarships and internship opportunities for all students in the program. WSU Everett is working closely with Everett Community College and other feeder community colleges where a cybersecurity certificate and/or Associates degree are offered to assure alignment and smooth pathways to upper-division coursework. This includes Dual Enrollment and financial aid consortium agreements. A new Cybersecurity Club has been launched at Everett, offering students practical, hands-on experience in the field of cybersecurity. An isolated subnet has been established allowing students from all three campuses to experiment with networking security without affecting production network.

Enrollment

WSU has started formal advertisement and recruitment of students into the program. The first batch of students joined the program in the Fall 2023 semester. Currently, they have 52 students admitted into the program. Additionally, 24 WSU students have indicated Cybersecurity as their academic interest; they will be admitted into the program upon completion of the program admission requirements. They have also received inquiries expressing interest about this program from over 100 prospective students. WSU Everett Office of Admissions plans to continue its success in collaborative partnerships with both local community colleges and local employers to double the campuses BSCyber enrollment by the next fall cycle. Programs like Amazon Career Choice, Degree Partnership Programming, and Instant Admissions will all aid in growing WSU Everett's BSCyber enrollment. Once the program is fully implemented, in about six years, WSU anticipates serving 150 students on the Pullman campus, 45 students on the Tri-Cities campus, and 30 on the Everett campus.

Western Washington University (WWU)

Background on the Cybersecurity Program

Western's BS in Cybersecurity degree is a unique joint academic program between Western Washington University and Washington's community and technical colleges, culminating in a baccalaureate degree in cybersecurity. It is a "2+2" program. During the first 2 years, students earn a specific cybersecurity transfer degree from one of their ten partner colleges. In the last 2 years, students earn a Bachelor of Science in Cybersecurity from WWU from one of three locations in Bellingham, Poulsbo, or Kirkland.

The cybersecurity transfer pathway is designed for their current partner colleges:

- Bellingham Technical College
- Edmonds College
- Green River College
- Highline College
- Lake Washington Institute of Technology
- Olympic College
- Peninsula College
- Renton Technical College
- South Puget Sound Community College
- Whatcom Community College

WWU also offers a Cybersecurity Minor and Certificate for students pursuing other majors.

Western Washington University has been designated as a National Center of Academic Excellence in Cyber Defense (CAE -CD). This CAE designation indicates that Western has met the rigorous requirements set forth by the National Security Agency (NSA) and is committed to producing cybersecurity professionals that will reduce vulnerabilities in the national infrastructure. Western is proud to become the 11th CAE institution of higher education in Washington State. In the current year, WWU is seeking ABET accreditation for its cybersecurity program.

As shown in Table 10, enrollments in the Cybersecurity major have remained relatively steady for the last three years, while interest in the certificate, while still relatively small, has grown.

Table 10. Average WWU Cybersecurity Enrollments

Academic Year	Students Enrolled in Major	Students Enrolled in Minor	Students Enrolled in Certificate Program
2020-21	58	0	5
2021-22	57	0	9
2022-23	64	0	17
2023-24	68	9	13
2024-25	63	6	4

Cyber Range Poulsbo: The Washington State Educational Cyber Range

WWU operates Cyber Range Poulsbo: The Washington State Educational Cyber Range as an educational resource for all schools, colleges, and universities in the state of Washington. The Range allows instructors from schools across the state to develop and share realistic educational and training exercises without the need for each program to independently develop the same materials, or purchase and operate their own equipment. The Range is designed to allow secure access to cyber security training scenarios by leveraging their private cloud architecture and state of the art networking capabilities. Cyber Range Poulsbo provides free access for all Washington State schools, including K-12, as well as colleges and universities. Cyber Range Poulsbo also engages in nationwide programs which are funded and supported independent of the core functions.

Funding and expenditures

WWU received \$769,000 in funds for FY 23 from the workforce education investment account for upgrading Cyber Range equipment and software. With this support from the state, Cyber Range Poulsbo has purchased and installed 42 high-capacity servers and related equipment to significantly increase its ability to support other schools.

The capacity additions have allowed a significant increase in the number of students supported by Cyber Range Poulsbo. The Range was first created in the spring of 2017 with 5 students accessing the initial system. This increased slowly as the infrastructure and systems were developed. During that period the focus was on developing the systems and processes to support students across the state. With the infusion of equipment put into place with the FY23 funding, the focus has moved to increasing availability and access for students. The last full year of operations, AY 2023-24, saw 804 students accessing the range directly, along with another 378 students accessing the range through PISCES (see discussion below) for a total of 1182 users. This number is continuing to grow.

Cyber Range Poulsbo Users

2016-17 – 5 Users, 1 School
2017-18 - ~25 Users, 1 School
2018-19 - ~50 Users, 3 Schools
2019-20 ~150 Users, 5 Schools
2020-21 ~320 Users, 5 Schools
2021-22 ~400 Users, 8 Schools
2022-23 722 w/PISCES 1001 Users, 15 Schools
2023-24 804 w/PISCES 1182 Users, 34 Schools

A very significant factor is the growth of instructors, with approximately 90 engaged with the Cyber Range this year. This is significant as instructors typically engage with the Cyber Range for an average of about a year working on incorporating range exercise into their classes and developing curriculum before bringing their students onto the range. The high number of instructors is a leading indicator of significant continuing growth.

Students using Cyber Range Poulsbo are enrolled in seven of Washington State’s universities, and 16 of Washington’s colleges and technical schools. In addition, there are 13 K-12 schools and school districts with students engaged on the Range.

PISCES Program

Cyber Range Poulsbo hosts the infrastructure for the PISCES program. This program, operated by PISCES International, and supported by the Department of Homeland Security (DHS), Cybersecurity and Infrastructure Security Agency (CISA), provides hands-on training for future cybersecurity analysts while monitoring the cyber safety of small government entities, such as cities, counties, water districts, fire

districts, and ports (<https://piscs-intl.org/>). In 2024, the Washington Legislature provide an allocation of \$300,000 through WWU to PISCES to support the program in Washington State for AY 2024-2025. This marked the beginning of direct support by the state for the program which had been fully funded by CISA. This was significant as while CISA, working with PNNL will continue to support and fund improvements, new capabilities, and other upgrades to the system, it will no longer provide operational funding, which now must be provided by individual states.

In AY 2023-2024 there were 378 Washington students who participated in the PISCES program. In the Fall of 2024, there are 108 participating students, which is an increase from 86 in the Fall of 2023. The PISCES students perform live monitoring of the networks of entities in Washington. This is a unique opportunity to gain real world experience in one of the top ten most in demand career fields. After successfully completing the program, students are awarded a PISCES certificate.

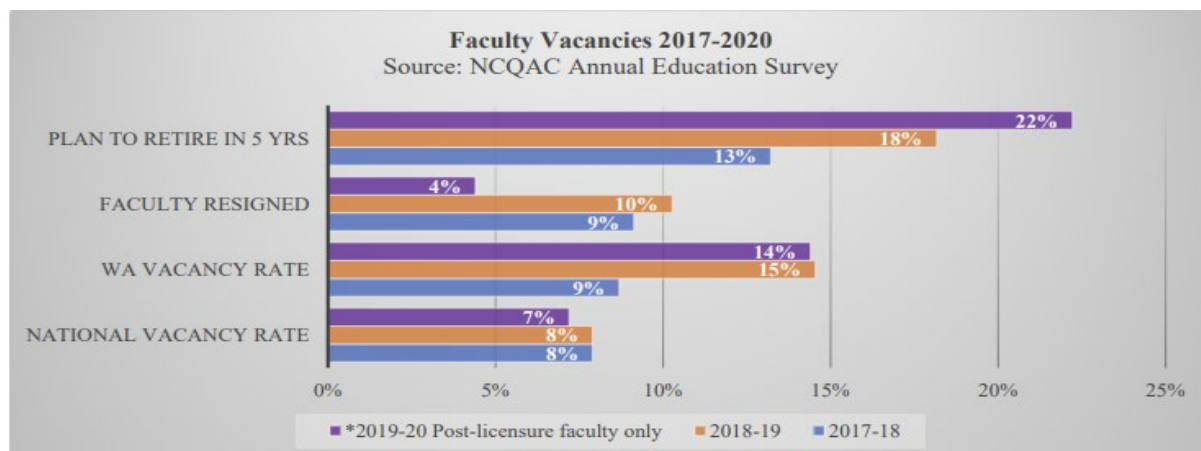
The efforts of PISCES students have resulted in the discovery of numerous illegal and dastardly activities by hackers directed against these entities. Discovered activities include attempts at the insertion of ransomware, phishing attacks, attempted infiltration of HVAC systems, and many others. All discovered activities were reported to the system administrators of the affected entities, and several were reported to law enforcement including local police and the FBI through the Washington State Fusion Center.

NURSING PROGRAMS

Nursing staff shortages in Washington are well-documented. According to the WA Center for Nursing, there are currently over 6,000 nursing job openings in WA state, with the majority of open positions for RNs. The need for more RNs is immediate and critical. Only 1.1 percent of licensed RNs in Washington are unemployed and seeking employment as a nurse and only 2.3 percent have jobs outside nursing. There are not enough licensed nurses in Washington to fill the thousands of RN vacancies in Washington hospitals.⁹

Another factor driving the rising demand for qualified RNs is an increase in the number of nurses retiring or leaving the profession.¹⁰ According to a recent report from the Washington Center for Nursing (WCN), 54 percent of nurses have considered or have made plans to leave the profession due to the impact of COVID-19. WCN projects that there will be 17,271 annual RN job openings between 2024-2029, with an average turnover rate of 26.5 percent. This trend is illustrated in Figure 4, which shows nursing faculty vacancy rate data taken from a 2020 survey conducted by the Nursing Care Quality Assurance Commission (NCQAC).

Figure 4. National Faculty Vacancy rates 2017-2020



With the U.S. population becoming more diverse,¹¹ diversifying the nursing workforce is a national priority. Educating students from diverse minority and underrepresented communities is a key strategy in this effort.¹² In Washington State, only 24.6 percent of RNs and 39 percent of pre-licensure BSN students report as other than White/Caucasian¹³

WCN reports that in Washington State, an average of 3,200 qualified RN applicants are turned away each year from pre-licensure RN programs. This is related to several factors including the availability of qualified faculty and subsequently the capacity for increasing enrollment in nursing schools and colleges. Compared to national data, WCN reports that over the last 3 years Washington State has a higher average faculty vacancy rate (13 percent) compared with faculty vacancy rates (8 percent) across the nation.

The programs discussed in this section, focused on either expanding enrollments or on the development of a new program, are all designed to address the demand for skilled LPNs and RNs.

State Board for Community and Technical Colleges (SBCTC)

Background

The Community and Technical College system educates nurses in Associate and Baccalaureate programs at Registered and Licensed Practical Nurse levels. Overall, the system graduates between 1800 and 2000 new nurses per year across 29 colleges located east and west of the mountains. However, Washington State Hospital Association estimates that in order to meet staffing needs, hospitals alone need to hire additional 6,100 nurses. The Washington Center for Nursing estimates there are over 100 specialties in nursing and only 50 percent of RNs work in hospitals. The other half work in ambulatory care, long-term care, home health, community health clinics, schools, the military, research labs, and other settings.

Over 80 percent of nursing program graduates are female. The average age of students at all levels of nursing programs is between 30 and 36. Completers of the Associate Degree Nursing (ADN) program are 62 percent white, 10 percent Asian, 10 percent 2+ races, 6 percent Hispanic/Latino, 4 percent Black/African American, 1 percent American Indian/Alaska Native, and 7 percent with race unreported.

Funding and Expenditures

With funds allocated to the community and technical colleges in the FY 2023 Supplemental Budget, the CTCs committed to expanding enrollments by 210 FTEs by Spring of 2025 (see Table 11).

Strategies to support the expansion include adding evening/weekend/part-time cohorts, creating hybrid programs, developing additional points of access, implementing apprenticeships, expanding headcounts in existing cohorts, and dedicating resources to recruitment of students and faculty.

Proposed activities and expenditures include:

- Hiring full-time faculty, adjunct faculty, clinical placement coordinators, and new hires or increasing hours for simulation coordinator positions.
- Increasing outreach and recruitment activities to promote new and existing pathways, including targeted recruitment efforts for incumbent healthcare workers.
- Implementing a Certified Nursing Assistant (CNA) to Licensed Practical Nurse (LPN) Apprenticeship program.
- Expanding lab and classroom space and purchasing equipment and supplies to accommodate additional students.
- Investing in curriculum development and redesign to accommodate part-time students.

Table 11. SBCTC Nursing: Funding allocated to colleges and respective FTE targets

College	New FTE Target	Award Amount
Bates	10	\$92,352.30
Bellevue	25	\$300,000.00
Bellingham	15	\$138,528.44
Centralia	10	\$92,352.30
Edmonds	15	\$138,528.44
Everett	15	\$138,528.44
Green River	25	\$300,000.00
Highline	15	\$138,528.44
Lower Columbia	15	\$138,528.44
Olympic	25	\$300,000.00
Pierce	10	\$92,352.30
Spokane	15	\$138,528.44
SPSCC	15	\$138,528.44
	210	\$2,146,756

Simulation Vans

The Simulation Plan for Washington state, developed by nursing simulation experts from CTC and baccalaureate institutions, identified creation of a Mobile Simulation Program as one of the strategies to address shortages of clinical placements and enhance access to high quality nursing simulation centers, especially in rural locations and communities with low resources.

In its FY23 Supplemental Budget, the Legislature allocated \$1.6M to SBCTC for the college system to purchase two mobile simulation vans, outfitted with educational equipment, including manikins, video technology, and communication equipment. Funds were also allocated to two colleges serving rural areas (see Table 12).

Table 12. SBCTC Nursing: Funds allocated to rural colleges

College	Allocation	Summary of Proposal
Skagit Valley College	\$800,000	SVC will purchase new simulation equipment to enhance learning in mental health, pediatrics, and maternal infant nursing. SVC's service district includes three rural and island counties: Skagit County, Island County, and San Juan County. Having the ability to make simulation-based learning mobile will greatly improve college's ability to serve regional small to medium sized healthcare facilities. With these funds, SVC will purchase a van to transport simulation equipment to rural healthcare facilities as well as other colleges that need specialized equipment. SVC faculty and simulation technicians would travel to the facilities to provide simulation-based training in specialty content areas of nursing.
Wenatchee Valley College	\$800,000	The WVC-Omak campus buildings and simulation lab are inadequate in size to handle increased enrollment in the allied health programs. To increase enrollment, such as adding an LPN to BSN pathway in Omak, WVC will have to stagger utilization of the current lab, but their current lab is still not big enough for current and future enrollment. WVC would immediately utilize a mobile simulation lab at the Omak campus to help facilitate a patient environment that is not a pop-up in a classroom.
Total	\$1,600,000	

Peninsula College

Peninsula College serves rural Clallam and Jefferson counties as the only institution of higher education on the North Olympic Peninsula. The College service area includes 109,552 residents across two large economically distressed rural counties and encompasses an area of over 3,600 square miles of land that extends from the Pacific Ocean on the west to the Hood Canal on the east. Peninsula serves six American Indian nations (Jamestown S’Klallam, Lower Elwha Klallam, Quileute, Makah, Hoh, and Port Gamble S’Klallam). Clallam and Jefferson Counties are designated as medically underserved areas (MUAs). Residents of these counties face economic and cultural barriers to healthcare, including those who are low-income, homeless, Medicaid-eligible, Native American, or migrant farmworkers. MUA population designations are calculated based on the infant mortality rate, poverty rate, percentage of elderly, and the primary care physicians to population ratio. In addition to MUA designation, the region falls into the highest category for health professional shortage areas in Washington state.

In response to the demand for medical professionals in the region, Peninsula College has a goal of maintaining 32 students in their registered nursing program, 60 students in their nursing assistant program, and 40 students in their medical assistant program.

Peninsula College: Funding and Expenditures

Peninsula College has expended 100% of the \$350,000 allocated for FY 2024, including expenditures for salaries and benefits (92 percent, goods and services (8 percent).

Salaries and benefits expenditures went toward two full-time nursing faculty, one full-time nursing instructional support technician (.5FTE S&B paid from other funds), one full-time nursing program specialist (.5FTE S&B paid from other funds), one full-time medical assisting instructional support technician (.5FTE S&B paid from other funds), and one full-time medical assisting/healthcare coordinator (.5FTE S&B paid from other funds).

Goods and services included equipment under \$5000 - a defibrillator, infusion pumps, microscopes, stethoscopes, vascular access chest manikin, and IV arms; equipment over \$5000 – a Pyxis medication automatic delivery device; classroom materials such as reference books, exam prep study guides, anatomy charts, consumables; and marketing and recruitment expenses (digital, print, and radio advertising and allied health recruitment fairs).

Peninsula College: Enrollment

Registered Nursing Program. Peninsula College offers an Associate in Nursing, Direct Transfer Agreement/Major Related Program. They have been admitting 32 students in the program since 2018-20. The two-year and three-year graduation rates have varied slightly from year to year, with the completion rate for the 2020-22 cohort at 97 percent (see Table 13).

Table 13. Peninsula College RN Program: Enrollment & Completion Rates

Cohort	Admitted (New)	Graduating in 2 years	Graduating in 3 years	2-yr Program completion	3-yr Program Completion
2018-20	32	30	31	94%	97%
2019-21	31 (+1 returning)	28	29	90%	94%
2020-22	32	31	31	97%	97%
2021-23	31 (+1 returning)	29	30	94%	97%
2022-24	28 (insufficient qualified applicants)	28	28	100%	100%

Nursing Assistant Program. Peninsula college also offers a nursing assistant certified (NAC) program, which prepares students for the role of nursing assistant in hospitals, clinics, skilled nursing facilities (long term care and rehabilitation) and assisted living facilities. While the funding thus far has helped Peninsula College increase capacity, enrollments did not meet the target (see Table 14). They had a small increase in 2019. But enrollments dropped in 2020 due to the pandemic. They are optimistic that outreach efforts, partnerships with employers, and offering the class at their satellite campus in Port Townsend will increase enrollments next year.

Table 14. Peninsula College NAC Program: Enrollment and Completions

Cohort	Students admitted to the program	Completions
2018-19	22	100%
2019-20	30	97%
2020-21	25	92%
2021-22	25	92%
2022-23	13	100%
2023-24	27	95.6%

Challenges. Covid-19 presented a number of challenges to clinical placement. Peninsula was forced to cancel the class for several quarters. This limited their ability to expand the program. Outreach efforts included regular information sessions for potentially interested applicants; participation in healthcare events with local area high schools and agencies such as Scrubs Camps, STEM Cafés, and job fairs; highlighting the NAC program in ongoing digital, print, and radio advertising; and partnerships with healthcare employers to recruit incumbent workers to enroll in the program.

Planned future strategies to expand enrollment. Efforts to expand enrollment going forward include partnering with Jefferson Healthcare, starting in fall 2023, to offer the NAC class twice a year in Port Townsend, expanding outreach and recruitment to high school seniors and presentations at WorkSource, and developing stronger healthcare pathways through their Guided Pathways initiatives and partnerships with high schools.

Efforts aimed at improving equitable opportunities. To help ease the burden of costs to start in the field for the PC Foundation provides funding for stethoscopes and blood pressure cuffs. Also, because their large service area is geographically isolated students often face transportation issues. In order to minimize the barrier of reliable transportation, Peninsula will offer a fall 2023 class in Port Townsend, with Jefferson Healthcare providing lab space.

Medical Assistant Program. Peninsula College offers a medical assistant program, which prepares graduates to work alongside physicians performing a range of assisting duties in outpatient or ambulatory care facilities such as medical offices and clinics. The funding has helped Peninsula increase capacity to 40 medical assisting students per year, but enrollments have not increased (see Table 15). The pandemic created additional barriers for students, but they are optimistic that outreach efforts and partnerships with employers will help increase enrollments for the fall 2023 cohort.

Table 15. Peninsula College Medical Assistant Program: Enrollment and Completions

Cohort	Student applications	Students admitted to the program	Students who completed
2018	15	15	13
2019	11	11	10
2020	14	14	11
2021	10	10	11

2022	5	5	8
2023	5	5	3

Challenges. Peninsula College has encountered challenges in recruiting applicants due to competition with in-house training programs offered by employers, various apprenticeship training programs, the pandemic, and an overall decrease in interested applicants due to low wages for relatively high skills required by medical assistants.

Outreach efforts. Peninsula has hosted several information sessions, Scrubs Camps, allied health job fairs, and STEM Café events, and they have utilized their advisory board members to post flyers, banners, and recruitment information at their facilities and organizations. They have also increased K-12 outreach and recruitment efforts. In addition, they have expanded marketing efforts, including photo shoots and promotional videos that have been shared broadly via social media and website links. The medical assistant program is a priority focus of a comprehensive marketing and recruitment plan with ads and activities running from January through August.

Planned Future strategies to expand enrollment. Efforts to expand enrollment going forward include collaborating with partners to increase enrollment through updated dual-credit articulation agreements with local high schools; creating bridge programs to award college credit to students transferring into their program from apprenticeships; continuing partnerships with the Washington Association for Community Health (WACH) Apprenticeship programs; hosting a STEM Café event for K-12 educators and administrators to learn about Peninsula’s healthcare programs; restarting information sessions that were canceled due to Covid.; and expanding pathways to medical assistant certification through a new medical assistant registered (MA-R) to medical assistant certified (MA-C) bridge program.

Eastern Washington University (EWU)

Background and History of the Program

EWU received phase I and II approval from the Nursing Care Quality Assurance Commission (NCQAC) in March 2019. The WA legislature provided start-up funding in July 2022. The nursing commission granted initial approval to launch in August of 2022, and the NWCCU approved the program in March 2023. EWU has been actively recruiting and hiring for faculty and administrative positions and purchasing equipment that will be needed for the program.

While that initial investment in the supplemental session allowed them to move rapidly forward, it was never intended to fully fund the cohort to completion. The initial allocation of \$6.17 million included more than \$4 million for construction of needed space and \$1.9 million for ongoing base funding. This amount was sufficient to hire the first year of faculty, but more was needed for ongoing program operations. EWU requested an additional \$4.6 million for the next biennium to sustain the program moving forward and this amount was included in the 2023-25 State Operating Budget released on April 22, 2023.

The Nursing BSN degree provides transformative educational experiences to create a culture of excellence in the art and science of nursing. The program will prepare students for a rewarding career in nursing at a time when there is a critical shortage of nurses throughout the state and nation. Graduates will be lifelong learners prepared to practice with integrity and compassion as they care for people across their lifespans in various healthcare settings. The baccalaureate degree program in nursing (BSN) at EWU is pursuing initial accreditation by the Commission on Collegiate Nursing Education.

Outreach Efforts and Communication Strategies to Market the New Program

EWU has a website and a social media presence. Marketing and communications have generated awareness via radio spots, newspaper articles, and an event called Eastern Edge that focuses on the

current and future nursing pipeline in the region. They received 132 applications for the first 40 seats. In addition, program leaders collaborate with admission counselors and recruiters, participate in orientations for admitted freshmen, and engage in other community outreach events hosted by the Area Health Education Center (AHEC). Other efforts include participation in information sessions for CTC transfer students and for EWU pre-nursing students.

Efforts aimed at improving equitable opportunities in the field

EWU implemented a holistic admissions process. This includes eliminating standardized entrance exams or standardized test scores. A 3.0 GPA benchmark for eligibility has been set and applicants are not ranked on GPA; any applicant with a 3.0 cumulative GPA and a 3.0 GPA on the nursing pre-requisite courses is eligible for admission. Four brief essay questions were included, aimed at measuring eight non-cognitive variables that are predictive of success in college and scored each applicant using an evidence-based scoring rubric. All reviews were blinded.

Funding and Expenditures

The following table shows the funding and anticipated expenses by category for EWU’s Bachelor of Science in Nursing program in fiscal year 2023.

Table 16. EWU Bachelor of Science Nursing Program: Funding and Expenses

Desc	Budget	FY24 Expenses	FY25 Anticipated Expenses
Salaries	1,135,000	771,000	364,000
Benefits	456,000	262,000	194,000
Direct Expense	1,614,000	300,000	1,314,000
Capital Equipment	4,064,000	3,975,000	89,000
Lease	1,200,000	1,200,000	0
Total	8,469,000	6,515,000	1,954,000

Personnel. As of July 2024, EWU has hired 1 Professor, 3 Assistant Professors, 4 Clinical Assistants, 1 Operations Manager, 1 Nursing Support Technician, and 1 Program Specialist. Current positions in recruitment include nursing tenure track faculty (Open Rank Assistant or Associate), 1 Nursing Skills and Simulation Laboratory Special Faculty, and 1 Nursing Skills and Simulation Laboratory Assistant. The additional funding in the 2023-25 State Operating Budget provided enough funding to fully staff the nursing program.

Facilities. Eastern entered a contract for a design build on the Spokane Inland Empire Railroad (SIERR) building in Spokane for the Nursing Program, costing \$3,575,000. Information Technology infrastructure was updated in this building for the Nursing Program, costing \$400,000. Eastern received the occupancy permit on June 23, 2023. The lease contract began August 2022 with FY23 cash payments beginning in March 2023.

Equipment. Equipment purchases for the Nursing Program included the following:

- \$500,000 for simulation manikins, associated software, a turnkey AV media solution for the control room, and faculty training.
- \$210,000 for furniture and non-manikin related equipment needed for nursing skills lab and simulation suites.
- \$114,000 for Avkin wearable simulation technology.
- \$163,000 for extended warranties for simulators.

Enrollment

Eastern invited 40 students and waitlisted 15 for Fall 2023. An additional 40 students were admitted in January 2024. The intention is to have cohorts of 40 students for the fall and spring terms over 2 years, for a total of 4 cohorts. Current total enrollment for Fall 2024 is 141 students. For Spring 2025 they anticipate having 160 students in the pipeline. The first graduating class will complete in June 2025.

UW Seattle School of Nursing

Background and History of the Program

Established in the wake of the 1918 flu pandemic, the University of Washington School of Nursing currently teaches almost 1,000 students annually in baccalaureate, postbaccalaureate, masters, and doctoral programs across three campuses. In 2010, to help alleviate the critical nursing shortage, the Accelerated Bachelor of Science in Nursing (ABSN) program at the Seattle campus became operational.

The ABSN program is the fastest program for preparing Registered Nurses (RN) – an undergraduate generalist nursing degree in high demand. The traditional two-year, six-quarter Bachelor of Science in nursing (BSN) program serves students who are completing years three and four of their bachelor's degree, typically their first university degree. Alternatively, the four-quarter ABSN program provides the BSN curriculum for postbaccalaureate students who have already earned a bachelor's degree in a field other than nursing and who complete nursing prerequisite courses.

Both the BSN and the ABSN programs include the foundational nursing skills and competencies directed by regulatory bodies, including adult gerontology, medical, surgical, pediatric, psychology and mental health, obstetrics, pharmacology, pathophysiology, research, and professionalism – essentially the whole scope of what an RN does – while centering on population health and social justice from day one. These elements are essential components required for accreditation and are very similar for all ABSN and BSN programs nationwide. BSN and ABSN graduates are prepared for a wide range of careers from direct patient care, bedside nursing in hospitals, policy work, scientific research, population health work to provide services, nursing education, and leadership.

Thanks to Legislative support in FY 2023 and FY 2024, and with the additional support provided in the 2023-2025 State Operating Budget released in April 2023, the UW School of Nursing expanded its ABSN program from 64 to 128 new students each year.

Efforts aimed at improving equitable opportunities in the field

Potential equity issues associated with the ABSN program include that it is not state-subsidized and is therefore a more expensive pathway compared to the traditional BSN program. The ABSN program also requires intense focus and time, which limits students' ability to work while attending. To address these issues, legislative support provided \$397,500 for a one-time increase in scholarship packages. Additionally, recruitment efforts include focused outreach to diverse potential applicants from historically marginalized communities.

The Washington Center for Nursing (WCN) published several [reports](#) on diversity in nursing, nursing workforce supply and demand, nursing education, including:

- COVID-19 Impact on the Nursing Workforce. (2021)
- Washington State Nursing Education Trend Report Academic Years 2014-2020. (2022)
- Washington 2021 Nursing Workforce Supply Data Report: Characteristics of LPNs, RNs, and ARNPs. (2023)
- Washington State Demand Trends for Nursing Professionals: An Environmental Scan of Data from 2020-2023. (2023)

In addition, the American Association of Colleges of Nursing published a report that outlines a number of strategies to enhance diversity in the nursing workforce.¹⁴ These reports have informed UW's approach to the issue.

Outreach Efforts and Communication Strategies to Market the New Program

UW has leveraged a robust blend of digital and in person strategies to recruit students for the expanded ABSN program, including utilizing the Salesforce Account Engagement and CRM platform, launching paid digital media advertising campaigns across Meta, Google, Reddit, and a plethora of Nursing Association website and newsletters. They engaged alumni, students and stakeholders in market research interest experiences that garnered input from over 200 prospects, , and developed tools for more strategic program promotion and lead gathering at in-person and online recruitment events and information sessions. With the launch of a new website, they have created more user friendly and accessible storytelling channels, including the School of Nursing Podcast. They are currently in the process of overhauling their social media strategy to better align with the industry best practices for prospective and current student engagement. This year, they also piloted a community engagement strategy that includes cross collaboration between faculty and staff to meet and engage with audiences of affinity-based groups, local organizations and health education focused associations that promote access to nursing education amongst historically marginalized communities. This strategy will allow us to reach a greater and more enthusiastic audience of prospective nurses or healthcare advocates who would benefit from the accelerated BSN program.

Challenges

This year's challenges included recruitment and admittance of a full secondary cohort. In response to current admissions numbers, the UW SoN is in the process of developing and implementing a comprehensive, multi-year recruitment plan, to expand the current catchment area for prospective students. Additionally, they continue to assess additional avenues of financial supports to students for whom cost might remain a barrier. The UW SoN is also assessing current metrics for tracking applications, with a hope to gain additional insight into barriers which prospective students may encounter during the recruitment and application process.

Funding and Expenditures.

Across Fiscal Year (FY) 2023-24, the UW School of Nursing spent a total of \$968,273 of proviso funds in support of the ABSN expansion. A total of \$403,395 was awarded to student scholarships. \$2,626 was utilized specifically for recruitment and marketing related to the ABSN expansion, and the remaining \$565,605 was allocated to operational support across student and academic service units. Operational support includes investing in additional staffing resources in admissions, supporting the salary of a recruitment specialist, ensuring adequate staff support in the admissions department, increased capacity within the Office of Clinical Placements (OCP), and supporting a percentage of the salary for both the Undergraduate Program Director, and the Associate Dean for Academic Affairs. Of the total \$969,000 allocated to support the ABSN expansion in FY 2023-24, \$727 remained unspent.

Enrollment

The current expansion from 64 to 128 ABSN students annually, now with two cohorts starting each academic year, is fully implemented. They matriculated and graduated the first spring-start ABSN cohort in Spring 2023 and March 2024, respectively. Further expansion of undergraduate BSN/ABSN programs to address the nursing workforce crisis will depend on resources to support the additional faculty, student services, and clinical education opportunities required. The UW School of Nursing is currently working with the UW Tacoma and Bothell campuses to develop an expanded Tri-Campus pre-licensure (BSN) program, with an expanded BSN cohort projected in fall of Academic Year (AY) 2028-29.

UW Tacoma School of Nursing

Background and History of the Program

The UW Tacoma School of Nursing & Healthcare Leadership (UWT SNHCL) is in the planning and development phase of a pre-licensure Bachelor of Science in nursing (BSN) program, designed to meet the demands for qualified registered nurses as key members of the healthcare workforce. This program will prepare students to take the required national RN licensure examination and is distinct from SNHCL's existing RN-BSN degree program intended for RNs with an associate degree in nursing (ADN) to complete their baccalaureate education and attain a BSN degree.

In addition to increasing the number of qualified RNs for the healthcare workforce, SNHCL is developing innovative and collaborative instructional modalities to teach both undergraduate and graduate students to successfully meet the educational outcomes for their respective programs of study in concert with the UW Seattle and UW Bothell campuses, via a BSN revision taskforce. Increased use of newer technologies, such as simulation and other modalities engage students in live, interactive online learning. These and other approaches can also eliminate barriers for RNs seeking to continue their education. Simulation provides students with alternative engagement in complex learning scenarios that may not present frequently or conveniently in a fieldwork/clinical setting, thereby ensuring high quality learning that can result in efficiencies at all levels of professional development and education. The proportional use of simulation to meet state required clinical/fieldwork hours is permitted, which mitigates the limited availability of clinical/fieldwork sites within healthcare agencies.

Knowledge and skills required to teach, whether in nursing education programs or in healthcare organizations, are acquired through graduate degrees. SNHCL will be using the simulation products and applying the best practices from this modality in the school's current Master of Nursing degree program and in future graduate degree programs (e.g., Doctor of Nursing Practice, Master of Healthcare Leadership). These degrees prepare qualified RNs and other health workforce members not only as educators in post-secondary colleges and universities, but also in roles in healthcare organizations responsible for staff development and educational leadership. Pre-licensure nursing education programs and healthcare organizations require qualified graduate-prepared nurses and health workforce members to teach and lead effective internship programs, and to manage the professional development and retention of novice and less experienced nurses and healthcare workers. Currently there are no public 4-year universities offering a pre-licensure BSN program in the South Puget Sound region and only UWT SNHCL offers a graduate nursing degree program. The goal of UW Tacoma's SNHCL's is to admit the first cohort of pre-licensure BSN students by fall of the 2028-2029 academic year.

Funding and Expenditures

During this current fiscal period, proviso funds have been used to support the planning phase for the pre-licensure BSN program including developing simulation modules, faculty simulation education, faculty salaries and stipends for students participating in the simulation module development (see Table 19). In addition, the funding has supported RN-BSN and MN program student recruitment, and completion of a labor market analysis survey, as required for a new program application to the Washington state Board of Nursing (WABON). In the remainder of this fiscal year, in addition to year-to-date expenses, the proviso funds will be used to hire a faculty pre-licensure BSN program development coordinator and program support staff; student engagement and recruitment activities; and student scholarships and additional simulation module development. With future proviso allocations, SNHCL will expand on the current activities to include initial operational costs associated with design and build out of the simulation environment/learning lab, pre-licensure curriculum development, hiring clinical faculty and

commensurate administrative staff support. Increased financial investments will be required to fully build out the infrastructure and resources necessary to operationalize a pre-licensure BSN program.

Table 19. UW-Tacoma School of Nursing & Healthcare Leadership: Current and Projected Expenses

Budget Category	Total Expenses
	FY 23-24
Simulation Module Development	\$1,137
Curriculum & Simulation Education/Training	\$6,716
Pre-licensure BSN Program Market Analysis	\$751
Faculty Salaries/Benefits	\$77,317
Pre-licensure BSN Program Development Coordinator	\$87,623
Administrative/Student Fieldwork Support Staff	\$43,010
Community Engagement	\$26,208
Student Engagement	\$2,750
Student Recruitment	\$4,800
Student Scholarships	\$47,505
Supplies/Materials	\$1,063
	\$272,672

Currently, UW Tacoma SNHCL is not yet recruiting students for a pre-licensure BSN program. A primary source of students for the RN-BSN is transfer students from regional community and technical colleges. During the pandemic, higher education enrollment declined nationally and locally, with the impact of this challenge continuing in recruiting for RN-BSN and MN programs. In the future, SNHCL’s recruitment specialist will be engaged in recruitment activities at CTCs, professional associations, community agencies, and healthcare organizations. In addition, curricular changes in the RN-BSN program have reduced the time to program completion to three academic quarters. Revisions and changes to the MN curriculum were approved by the WABON on April 20, 2023.

Outreach Efforts and Communication Strategies to expand enrollment

Strategies for further expanding enrollment include:

- Providing scholarships and financial support to students in need and from underrepresented groups.
- Curriculum review and redesign to provide additional hybrid course options and remote site learning to eliminate obstacles to place bound and working students.
- Exploring dual admission pathways with CTC partners to facilitate transfer student enrollment in current RN-BSN and future pre-licensure BSN programs.
- UWT and SNHCL leadership currently participates on the Tacoma Anchor Network and Tacoma Public Schools’ Healthcare Careers Academy advisory groups that have priorities for developing and recruiting students into the healthcare workforce.

Enrollment

The chart below shows annual enrollments for the UWT RN-BSN program over the last decade. Given rising demand for skilled RNs, the goal is to increase the number of students entering and completing this program.

Table 20. UWT RN-BSN Enrollment 2012-24

Academic Year	Students	Academic Year	Students
2012-2013	75	2018-2019	57
2013-2014	83	2019-2020	86
2014-2015	61	2020-2021	64
2015-2016	67	2021-2022	83
2016-2017	90	2022-2023	77
2017-2018	88	2023-24	95

Estimated future enrollment increases.

The short-term focus will be to increase the number of RN-BSN enrollments. Recruitment for and implementation of the pre-licensure BSN program is contingent upon final approval from the WABON. Specific goals for student enrollment are:

- Increasing the number of RN to BSN enrollments by 10% (by FY 2025).
- Admitting the first cohort (24 students) of pre-licensure BSN students for the 2028-2029 academic year.

Western Washington University (WWU)

RN-to-BSN Nursing Program

Offered through the Woodring College of Education, Western's RN-to-BSN Program prepares nurses for administrative, management, and clinical leadership roles. The program builds on patient care and advocacy skills learned in registered-nursing programs and work experience. Students must hold a Registered Nurse license or be in the last year of a pre-licensure associate degree or diploma nursing program. Students study topics such as social justice, nursing leadership, health policy and care coordination as they explore new healthcare system challenges and the importance of nursing leadership. Coursework focuses on enhancing their knowledge and skills in such areas as evidence-based practice, patient safety, organizational change, population health, effective communication, ethics, and palliative care.

Background and History

The RN-to-BSN program at Western Washington University (WWU) allows registered nurses to expand their education and career potential by obtaining a Bachelor of Science in Nursing (BSN). The program builds on previous nursing education and clinical experience, equipping students with advanced skills in leadership, evidence-based practice, care coordination, and healthcare systems. Eligible students include those who hold an RN license or are in the final year of a pre-licensure associate degree or diploma nursing program.

Skills Focus: The program emphasizes leadership, care coordination, patient safety, evidence-based practice, and social justice. Students also gain expertise in healthcare policy, population health, and informatics.

Career Preparation: Graduates are prepared for advanced roles, including nurse managers, public health nurses, case managers, clinical educators, and healthcare informatics specialists.

Program Inception and Rationale: The RN-to-BSN program launched in 2013 to meet the need for a local nursing education option for RNs, addressing gaps in regional accessibility. Before the program's inception, north Puget Sound nurses seeking a hybrid RN-to-BSN program had to travel to Bothell or enroll in fully online programs, which did not meet all students' learning preferences. This program supports the state's Master Plan for Nursing Education by increasing RN-to-BSN capacity.

Demand Trends: Enrollment has remained stable over the past two years, with approximately 40 students enrolled annually in 2023 and 2024. Growth is expected as local ADN programs expand and healthcare employers increasingly prefer BSN-prepared nurses. A 2011 report from the Institute of Medicine emphasized that increasing the number of BSN and MSN-prepared nurses is essential to meet healthcare's complex demands, enhancing patient outcomes and workforce education.¹⁵ Similarly, a 2023 report from the Washington Center for Nursing highlighted the need for highly educated nurses to address supply gaps and leadership roles, especially in rural areas.¹⁶ The *Future of Nursing: Leading Change, Advancing Health* report outlines how higher education equips nurses to deliver safe, quality, patient-centered care, while advanced skills in leadership, evidence-based practice, and care coordination are vital for improving healthcare access, quality, and cost-effectiveness. The Washington Center for Nursing (2023) projects a growing need for BSN and MSN-prepared nurses in Washington from 2020 to 2030, driven by population growth, an aging workforce, and increasing patient care complexity. Expanding nursing education supports a more skilled workforce and promotes quality care and health equity across the state.

For more details, refer to the *Washington Licensed Practical Nurse (LPN) and Registered Nurse (RN) Supply and Demand Projections 2020-2030*.

Rationale for Expanded Enrollments:

- **Increasing demand for BSN-prepared nurses:** A growing need for a more educated nursing workforce aligns with national trends and employer preferences.
- **State-supported funding to improve equity:** Reducing tuition costs has made the program more accessible for underserved and minority students.
- **Enhanced recruitment efforts:** The program prioritizes diversity and inclusivity in its student body.

Funding and Expenditures

- **State Funding:** WWU received state funding in 2022 to reduce tuition rates and support recruitment efforts.
- **Expenditures:** Tables 21 and 22 show a breakdown of the funding received and expenditures to date. As illustrated, funds have been allocated to hire a full-time program coordinator and part-time program advisor and to improve marketing, advising, and student support services. The funds also support two cohorts of students, which allows greater flexibility and accessibility for students attending classes on different days.
- **Plans for Remaining Funds:** Planned investments include expanded recruitment and marketing, enhanced student support programming, technology upgrades for hybrid learning, and curriculum revisions to align with industry needs and national nursing competencies. Faculty release time is necessary for revising the curriculum, with approval processes through the Washington Board of Nursing and the Commission on Collegiate Nursing Education (CCNE).

Table 21. 2024-2025 Annual Budget and Year to Date Actual		
	Annual Budget	Sep-2024 YTD Actual
Total Operating	749,607.00	749,607.00
Salary and Wage Expense		
Permanent Classified	61,044.00	15,260.28
TT/TN Faculty	290,103.00	14,943.22
NTT Faculty	184,870.00	1,892.38
NTT Non-Instructional	0.00	55,553.95
Faculty Replacement - Course Release	0.00	3,135.00
Faculty MSN Development Stipends	0.00	6,642.00
Academic Program Director Stipend	6,864.00	0.00
Subtotal	542,881.00	97,426.83
Fringe Benefits Expense		
Subtotal	175,726.00	28,773.26
Total Labor	718,607.00	126,200.09
Goods and Services Expense		
Goods & Services Pool	25,000.00	0.00
Supplies & Materials Exp	0.00	1,474.96
Books & Pamphlets Exp	0.00	441.56
Telephone Exp	0.00	0.69
Building/Facility Rental/Lease Exp	0.00	150.00
Building Repairs/Alt/Maint Exp	0.00	1,335.34
Self-serve Copier Expense	0.00	114.32
Education & Training Fees	0.00	7,500.00
Dues & Memberships Exp	0.00	580.00
Freight/Transport Expense	0.00	88.00
Recruitment Advertising Expense	0.00	200.00
Food (Not covered by attendee fee)	0.00	912.34
Subtotal	25,000.00	12,797.21
Travel Expense		
Travel Pool	6,000.00	0.00
Out-of-State Lodging/Subsistence	0.00	1,002.88
Subtotal	6,000.00	1,002.88
Non-Capitalized Fixed Assets		
Non-Cap/Non-Inventory - Furnishings	0.00	672.53
Non-Cap/Non-Inventory - Comp Equip	0.00	646.24
Subtotal	0.00	1,318.77
Total Expense	31,000.00	15,118.86
Total All Expenses	749,607.00	141,318.95
Total Revenues Less Expenses and Transfers	0.00	608,288.05

Table 22. 2022-2024 Budget & Expenditures		
	2022-2023	2023-2024
Operating Budget		
Tuition Operating Revenue	687,714.00	707,351.00
Salary and Wage Expenses		
Permanent Classified	41,901.05	59,023.40

Temporary Classified	11,876.50	0.00
TT/TN Faculty	189,635.94	194,072.04
NTT Faculty	36,382.05	44,584.04
NTT Non-Instructional	0.00	50,482.07
Faculty Replacement - Course Release	0.00	24,784.98
Other Faculty One-Time Payment	22,001.00	18,284.00
Academic Program Director Stipend	4,692.00	3,206.00
Subtotal	306,488.54	394,436.53
Fringe Benefits Expense		
Subtotal	93,210.06	110,502.73
Total Labor	399,698.60	504939.26
Personal Services Expenses		
Research/Survey/Appraisals Exp	76.16	0.00
Other Personal Serv Contract Exp (MSN Consultants)	42,863.01	65,041.89
Subtotal	42,939.17	65,041.89
Goods and Services Expenses		
Supplies & Materials Exp	77.25	6,912.43
Books & Pamphlets Exp	368.79	2,220.51
Computer Supplies and Accessories	0.00	204.16
Telephone Exp	17.27	11.79
Building/Facility Rental/Lease Exp	100.00	180.00
Software Leases/License Agreements	25.00	5,490.00
Printing Expense	0.00	78.00
Building Repairs/Alt/Maint Exp	90.00	0.00
Print & Copy Center Expense	264.53	231.25
Self-serve Copier Expense	166.83	259.38
Outside Printing Expense	0.00	140.00
Education & Training Fees	0.00	4,945.31
Dues & Memberships Exp	12,115.00	1,205.00
Convention Fees & Registration Exp	651.76	886.80
Honoraria Exp	0.00	50.00
Misc Purchased Services Exp	2,954.08	6.66
Parking Expense	56.00	62.00
Advertising Exp	0.00	5,448.74
Freight/Transport Expense	0.00	120.50
Recruitment Advertising Expense	600.00	3,158.00
Food (Not covered by attendee fee)	556.34	2,968.74
Inter-Departmental Activity Support	0.00	50.00
Conference/Event Expense	0.00	2,066.69
Subtotal	18,042.85	36,695.96
Travel Expenses		
In-State Lodging/Subsistence	2,221.00	2,636.78
In-State Air	0.00	465.11
Private Auto	652.89	36.68
Other Travel Expenses	135.96	295.39
Interview Expense	0.00	205.74
Out-of-State Lodg/Subsistence	388.06	981.14

Out-of-State Air	137.99	710.38
Ground Transportation	93.92	103.57
Subtotal	3,629.82	5,434.79
Non-Capitalized Fixed Assets		
Non-Cap/Non-Inventory - Furnishings	669.24	140.32
Subtotal	669.24	140.32
Grants, Benefits, and Client Expenses		
Award, Prize, Incentive Expense	620.40	0.00
Subtotal	620.40	0.00
Total Expense	65,901.48	107,312.96
Total All Expenses	465,600.08	612,252.22
Total Revenues Less Expenses	225,569.92	95,098.78

Enrollment Increases to Date

As noted in Table 23, WWU has seen recent growth in RN-to-BSN enrollment, returning to pre-pandemic enrollment numbers.

Table 23. WWU RN-BSN Enrollment 2017-2024

Academic Year	Students
2017-18	41
2018-19	34
2019-20	33
2020-21	22
2021-22	28
2022-23	17
2023-24	44
2024-25 (as of 10/22)	39

Challenges

Competing with fully online programs, geographical constraints for students, and lack of BSN requirements from employers in the region have posed barriers.

Outreach, Recruitment, and Anticipated Future Enrollment

Recruitment efforts include information sessions, hospital partnerships, and marketing to underrepresented populations. WWU also plans to retain, and support admitted students through virtual and in-person orientations, policy improvements, and engagement with students who have withdrawn, encouraging their reentry.

Efforts aimed at improving equitable opportunities in the field

Efforts to improve equitable opportunities include strategies such as reducing tuition costs with the recent legislative funding to make the program more accessible, expanding recruitment initiatives to reach diverse communities, and providing targeted scholarships. Additionally, the nursing program has enhanced student support services, such as mentoring and advising, to retain students from underrepresented backgrounds. The program also collaborates with healthcare organizations in rural or underserved areas to offer clinical placements to further promote equity in the nursing field.

Anticipated Future Enrollments

WWU aims to maintain 40-50 RN-to-BSN students annually and increase enrollments through strengthened recruitment efforts and collaborations with local ADN programs, including concurrent enrollment opportunities for a more accessible pathway.

New (2024) Masters of Science in Nursing (MSN) Program (Nine students currently enrolled)

Background and History

Following the success of the RN-to-BSN program, WWU began planning for a graduate program to address regional nursing leadership and education needs. Initial market surveys in 2019-2020 and funding received in 2022 supported the launch of a Master of Science in Nursing (MSN) program in 2023.

The MSN program began enrolling students in Fall 2024 and offers two tracks: Nursing Education and Nursing Leadership & Administration. It combines online coursework with in-person clinical experiences to address the region's demand for advanced nursing leadership, particularly in rural and underserved areas.

- **Skills Focus:** Core skills include leadership, healthcare systems management, nursing education, and health equity
- **Career Preparation:** Graduates will be prepared for roles such as nurse educators, policy experts, nurse executives, clinical nurse leaders, and healthcare administrators.

Program Inception and Rationale: The MSN program addresses gaps in nursing leadership and educator roles in regional healthcare, especially in rural settings, where retirements and growing healthcare complexities increase the need for trained leaders and educators. The program supports health equity initiatives and addresses the needs of rural communities.

Demand Trends: There is a demonstrated need for MSN-prepared nurses due to retirements, increasing complexity in healthcare, and a focus on health equity leadership.

Funding and Expenditures

Funding: WWU received funding in 2022 for MSN program development. Recruitment for the first cohort began in Fall 2024, with nine students enrolled.

Expenditures: Table 24 below shows MSN-related expenditures. As illustrated, funding supported stakeholder input for developing the program's mission, vision, values, and curriculum. Key expenditures included hiring the second tenure-track faculty and developing 23 MSN courses that align with state nursing rules, CCNE standards, and nursing competencies.

Table 24. MSN Related Expenditures

	2022-2023	2023-2024
Personal Services Expense		
Faculty Replacement - Course Release	0.00	24,784.98
Research/Survey/Appraisals Exp	76.16	0.00
Goods and Services Expense		
Other Personal Serv Contract Exp (MSN Consultants)	42,863.01	65,041.89
Books & Pamphlets Exp	368.79	2,220.51
Software Leases/License Agreements	0.00	5,490.00
Education & Training Fees	0.00	4,945.31
Advertising Exp	0.00	5,448.74
Recruitment Advertising Expense	600.00	3,158.00
Conference/Event Expense	0.00	2,066.69
Travel Expense		
In-State Lodging/Subsistence	2,221.00	2,636.78
In-State Air	0.00	465.11
Private Auto	652.89	36.68
Other Travel Expenses	135.96	295.39
Interview Expense	0.00	205.74
Out-of-State Lodging/Subsistence	388.06	981.14
Out-of-State Air	137.99	710.38
Ground Transportation	93.92	103.57
Total	47,537.78	118,590.91

Plans for Remaining Funds: Funds will be used for program expansion, additional faculty recruitment, and ongoing course development to support the two-year MSN curriculum.

Enrollment Increases to Date

The first cohort of nine students began in Fall 2024, with future enrollments expected to grow to 30 students annually. Graduate post-master certificates will also fill open seats in specialty courses.

Challenges

The approval process for the MSN curriculum, which involved compliance with multiple regulatory bodies, delayed program marketing, which may have limited enrollment for the first cohort. Outreach efforts continue, focusing on regional communities, underrepresented groups, and current RN-to-BSN students and graduates.

Outreach, Recruitment, and Anticipated Future Enrollment

Targeted recruitment efforts continue to include outreach to local and regional communities, underrepresented groups, and existing RN-BSN students and graduates.

Efforts aimed at improving equitable opportunities in the field

Efforts to improve equitable opportunities for the nursing program are noted above under the RN-to-BSN report. In addition, the MSN program was designed by stakeholders to promote health equity. The MSN program emphasizes a commitment to population health through the ecological model. Foundational courses foster lifelong transformative learning and encourage collaborative strategies to address social determinants of health. Students develop structural competencies to conduct comprehensive

assessments, drive practice transformations, connect individuals with care resources, establish partnerships for equitable health outcomes, and advocate for policies that promote health equity. Core courses also include equity-focused scholarship and informatics, equipping students with the skills necessary to advance health equity across various healthcare settings.

Anticipated Future Efforts

- WWU will continue targeted recruitment, strengthen partnerships with local healthcare organizations, and support growth in the MSN program.
- Two post-master certificates are being developed so that master's-prepared nurses can enroll in the MSN specialty courses, which will not increase the need for additional funding. Seats will be open until the target enrollment of 30 is reached.
- WWU's long-term plan is to create an RN to MSN program if funding is available to support this expansion.

Estimated Future Enrollment

The MSN program's enrollment is projected to reach 30 students annually by 2026 when their next cohort is enrolled.

Conclusion

Overall, the State Board for Community and Technical Colleges and the state's four-year higher education institutions that received funding in ESSB 5693 have made significant progress in advancing their goals for cybersecurity and nursing programs. Demand for cybersecurity professionals is growing rapidly in Washington, and the programs that have been selected for expanded enrollments or new development are well-positioned to play a critical role in meeting regional and statewide needs. The nursing programs highlighted in this report are also making good progress and are on target to meet their goals, making significant strides toward addressing the state's persistent workforce shortages in this field.

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- ⁵ National Initiative for Cybersecurity Education (NICE). (2023). NICE Framework Resource Center. <https://www.nist.gov/itl/applied-cybersecurity/nice/nice-framework-resource-center>
- ⁶ Source for all projected job openings in this table is: CyberSeek. (2023) Cybersecurity Supply/Demand Heat Map. <https://www.cyberseek.org/index.html#aboutit>. Note that these categories are not mutually exclusive. One job could perform more than one role, so the numbers are not meant to be aggregated
- ⁷ Washington State University has a formal approval process for establishing new degree programs. <https://provost.wsu.edu/procedures/degree-approval/>
- ⁸ First-gen Forward is the nation's first recognition program acknowledging higher education institutions for their commitment to first-generation students success. https://firstgen.naspa.org/files/dmfile/2022_23_Announcement_Institutions.pdf.
- ⁹ <https://www.wcnursing.org/nursing-workforce/>
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