

BOARD MEETING AGENDA WEDNESDAY, JUNE 22, 2016 | 12:00-3:00 P.M. MICROSOFT CAMPUS

I.	Meeting Called to Order		Brad Smith, Chair	12:00-12:05p
II.	Introduction of New WSOS Board Member	[Tab A]	Brad Smith	12:05-12:10p
III.	Approval of April 12, 2016 Board Meeting Minutes	[Tab B]	Brad Smith	12:10-12:15p
IV.	Landscape of Financial Aid Funding in Washington State	[Tab C]	Rachelle Sharpe Interim Director of the Washington Student Achievement Council	12:15-12:35p
V.	Opportunity Expansion Grant Proposals	[Tab D]	Jane Broom, Microsoft Andy Shouse, WA STEM	12:35-1:05p
VI.	Presentation of Post-Graduation Survey	[Tab E]	Kimber Connors Evaluation Consultant	1:05-1:40p
VIII.	New Ideas Brainstorm & Discussion	[Tab F]	Gary Rubens, Board Member Naria K. Santa Lucia, Executive Director	1:40-2:10p
	A. Professional/Technical Degree Program			
	B. Pre-Qualification Program			
IX.	WSOS Staff Report	[Tab G]	WSOS Staff	2:10-2:20p
	A. 2016-17 Program Plan & Update			
	B. Development (OpportunityTalks, Geeks Give Back)			
	C. Media			
X.	Finance & Investment Report	[Tab H]	Mack Hogans, F&I Chair Darrell Powell, CFO, CSF	2:20-2:30p
XI.	2016-18 WSOS Program Administrator Contract & FY17 Budget	[Tab I]	WSOS Board Members	2:30-2:50p
XII.	Executive Session		WSOS Board Members	2:50-3:00p

2016 Upcoming Meeting Dates (all meeting times are 1:00-3:00p on the Microsoft Campus):

- **Wednesday, September 28, 2016**
- **Wednesday, December 14, 2016**

Tab A

New WSOS Board Member

JULIE SANDLER BIO



JULIE SANDLER
Principal, Madrona Venture Group

Julie joined Madrona in 2011 and is a Principal on the investment team. She leads new investment opportunities for Madrona and serves as a board director and/or observer of several Madrona portfolio companies. She loves working with entrepreneurs tackling big problems and opportunities across consumer mobile and commerce, software/SaaS, and digital health. She launched the Seattle Entrepreneurial Women's Network (SEWN), an informal forum for women entrepreneurs, startappers, and aspiring entrepreneurs to connect in the greater Seattle area.

Julie was named Geekwire's 2014 "Geek of the Year", was selected to Puget Sound Business Journal's 40 Under 40 in 2013, and was named a Presidential Leadership Scholar in 2016 by the Clinton Foundation and Presidential Center, the LBJ Foundation, and the two Bush Presidential Centers.

Julie serves as a TechStars mentor and is an adjunct faculty member at the University of Washington where she teaches an MBA course on Entrepreneurship at the Foster School of Business where she was named a "star teacher" in 2014, 2015, and 2016.

Prior to joining Madrona, Julie was a senior product manager at Amazon on the Kindle team where she managed digital marketing for Kindle's ebook business, both in the US and internationally. She also led the definition, design, and technical implementation of new products for Kindle Content web and mobile shopping experiences. Earlier in her career, Julie worked at Accenture where she spent several years in product management within Microsoft's SMSG Solutions Delivery group where she launched worldwide Disaster Response operations for Microsoft Volume Licensing. Prior to Madrona, Julie also worked in product management and business development at TeachStreet, a Madrona portfolio company (acquired by Amazon in February 2012).

EXTRACURRICULAR

Julie serves on the board of trustees of the Seattle Repertory Theatre. She is an avid Seattle waterfront runner, Pacific Northwest road trip addict, and musical theatre fan.

EDUCATION

Julie graduated Phi Beta Kappa from Stanford University with honors, with distinction, and with both a Master's degree and a Bachelor's degree in Psychology. She also received an MBA with honors from Harvard Business School.

1605 NW SAMMAMISH ROAD, SUITE 200, ISSAQUAH, WA 98027-5388

1.877.899.5002 | WWW.WAOPPORTUNITYSCHOLARSHIP.ORG

The College Success Foundation (CSF) is the program administrator for the Washington State Opportunity Scholarship.

Tab B

Minutes from the April 12, 2016 Board Meeting



**WASHINGTON STATE OPPORTUNITY SCHOLARSHIP BOARD MEETING
APRIL 12, 2016, 1:00 - 2:00 P.M., MICROSOFT CAMPUS
MINUTES**

The Board of Directors of the Washington State Opportunity Scholarship (WSOS) met on April 12, 2016 at the Microsoft headquarters in Redmond, Washington.

Board members: Brad Smith (Board Chair), Diane Cecchetti, Stan Deal, Mack Hogans, Jane Park, Gary Rubens, and Jim Sinegal present; Miller Adams by phone.

Additional attendees: Naria Santa Lucia, Don Alexander, Erin Ashley, Theresa Britschgi, Jane Broom, Kimber Connors, Karyl Gregory, Caroline Maillard, Bob Moser, Juliette Schindler Kelly, and Dave Stolier; John Bowden, Klondy Canales, Jeff Knudsen, Darrell Powell, Vickie Rekow, Caitlin Spence, and Brandon Yu by phone.

Meeting Called to Order

Having a quorum of the Board, Brad Smith, Board Chair of WSOS, welcomed everyone and called the Board meeting to order at 1:06 pm.

Mack Hogans moved that the minutes of the December 15, 2015 meeting be approved. Jim Sinegal seconded the motion. The motion carried unanimously.

Cohort 5 Selection

Naria Santa Lucia, WSOS Executive Director, reported that Cohort 5 has exceeded expectations with the high number of scholarship applicants.

Theresa Britschgi, WSOS Program Director, reported on efforts made by WSOS, CSF, and WA STEM to promote the Scholarship throughout the state. Britschgi further reported that WA legislators are made aware that personal visits were made to specific schools in their district.

Kimber Connors, College Success Foundation (CSF) Research & Evaluation Officer, compared statistics for the new Cohort 5 to Cohort 4 and explained the basis for selecting 1450 recipients for Cohort 5 based on the mandate of HB 2088. Connors presented three optional methods for selecting Cohort 5 recipients. The Board voted to use Method 3 where awardees are selected based on points given for their major (# of job openings), GPA, family income, first generation status and essay, in that order. Method 3 prioritizes majors in the highest-demand fields and improves representation in first generation students, females, students of color, under-represented minorities, and low income families. The Board additionally voted to amend Method 3 so that education majors will comprise no less than 2% of the awardees. Connors reported that students who do not receive the Scholarship will be tracked.

Program Report – Highlights

Santa Lucia provided a program update on the Boeing Mentorship Pilot, EmpowerHer, Industry Explorations, and Office Hours which each offer a low lift with high impact. Santa Lucia reported that a shelf version of the Skills That Shine workshops will be rolled out for use by various companies. Santa Lucia further reported that the Expansion Fund Committee will be reviewing final proposals submitted by five college/university finalists. The Committee will make a recommendation of 1-3 finalist awards to the Board at their June board meeting. Lastly, Santa Lucia reported that Dr. Angela Duckworth will be the featured speaker at the October 25th OpportunityTalks breakfast. Duckworth is most well-known for her research regarding the impact of grit on college completion.



Finance & Investment Update

Hogans reported that the WSOS Finance & Investment Committee met last week and made a thorough review of WSOS investments. The Committee is quite satisfied with the performance of the funds and their management by WSIB. Hogans further reported that \$21M as a match has been received from the state of Washington.

Hogans additionally reported that the Attorney General's Office has indicated that WSOS funds are viewed as public funds and therefore that part of our portfolio cannot be invested in private equities.

Lastly, Hogans reported that more members are needed to staff this committee. Suggestions can be channeled to Santa Lucia or to himself.

Presentation from Incoming CSF Board Chair

Bob Moser, new CSF Board Chair, reported findings from the CSF Alumni Legacy survey which was published in March 2016.

The meeting adjourned at 2:12 pm.

Respectfully submitted,
Karyl Gregory

DRAFT

Tab C

Landscape of Financial Aid Funding in Washington State

EXECUTIVE DIRECTOR:

Gene Sharratt, Ph.D.

COUNCIL MEMBERS:

Maud Daudon, Chair
Karen Lee, Vice Chair
Ray Lawton, Secretary
Marty Brown
Jeff Charbonneau
Paul Francis
Dr. Gil Mendoza
Eric Pattison
Dr. Susana Reyes

OUR VISION:

We inspire and foster excellence in educational attainment.



WASHINGTON STUDENT ACHIEVEMENT COUNCIL

EDUCATION › OPPORTUNITY › RESULTS

WHO WE ARE.

The Washington Student Achievement Council (WSAC) is a nine-member council supported by a cabinet-level state agency. By statute, the Council provides strategic planning, oversight, advocacy, and programs to support increased student success and higher levels of educational attainment in Washington.

WHAT WE DO.

Strategic planning, oversight, and advocacy:

- Propose goals and recommend resources to increase educational attainment by means of a ten-year Roadmap and a short-term Strategic Action Plan.
- Propose improvements and innovations needed to address the state's evolving educational needs.
- Advocate for higher education and educate the public on the economic, social, and civic benefits of postsecondary education.
- Connect and align work of educational programs, schools, and institutions to support student transitions from secondary and postsecondary education to the workforce.
- Facilitate analysis and research to increase educational attainment and system development.
- Assess the need for additional degrees and programs throughout the state.
- Improve student success by setting minimum college admission standards and by supporting students' transitions through all phases of education.
- Protect education consumers by authorizing out-of-state institutions to operate in Washington and monitoring program quality and finances.

Program administration:

- Ensure the quality of state financial aid programs and services that support educational access and affordability.
- Provide college savings opportunities through the Guaranteed Education Tuition (GET) program.
- Prepare underrepresented middle and high school students for postsecondary education through early outreach and success programs such as College Bound and GEAR UP.



2015-16



Dr. Rachelle Sharpe serves as the Deputy Director for the Washington Student Achievement Council (WSAC), the state higher education policy agency, where she has worked for ten years. She will serve as the interim executive director as of July 1.

Rachelle previously served as the director for student financial aid and support services for the agency, responsible for the oversight of 15 programs serving nearly 80,000 students with over \$350 million in annual funding. Rachelle's background is in higher education student services in the areas of financial aid, admissions and college access.

WSAC was established as a cabinet-level state agency in 2012. It provides strategic planning, administrative oversight and advocacy to support increased student success and higher levels of educational attainment in Washington.



Understanding Affordability in Washington

Rachelle Sharpe, PhD
Deputy Director

Washington Opportunity Scholarship Board

June 22, 2016



WASHINGTON STUDENT
ACHIEVEMENT COUNCIL
EDUCATION · OPPORTUNITY · RESULTS



Today's Discussion Will Address

What is the Council?

How do we measure and understand affordability?

How do state financial aid programs address affordability?

How does the Affordability Interactive Model display affordability?



About the Council



Our Mission:

We advance educational opportunities and attainment in Washington. In pursuit of our mission, the **Washington Student Achievement Council**:

- Leads statewide strategic planning to improve educational coordination and transitions.
- Supports Washingtonians through the administration of financial aid, a college savings plan, and support services.
- Advocates for the economic, social, and civic benefits of postsecondary education.



Attainment Goals by 2023

THE ROADMAP

2015 UPDATE ON WASHINGTON STATE'S ATTAINMENT GOALS



of adults will have a high school diploma or equivalent.



of adults will need a postsecondary credential or degree.

*Population age 25-44.

Emerging Issues

500,000 postsecondary credential or degrees must be awarded to meet our workforce needs and growing population (by 2023).

Strategies

Target services and support to close the **opportunity gap** and **reengage adults**.



An Affordability Framework

Understanding affordability for Washington students



Paying for College is a Shared Investment

Students &
Families

State
Policymakers

Institutions

Business &
Philanthropy

Every Washington resident who desires and is able to attend postsecondary education should be able to cover educational costs.



Students and Families

Affordability is viewed from the perspective of students and families.

- All students and their families are responsible for sharing in the cost for their education.
- Families should receive early, high quality information about financing options.
- A reasonable amount of work supports student success.



Ensure affordable access to high quality instruction through coordinated funding to public institutions.

- Set stable and predictable tuition and financial aid policies.
- Provide a variety of affordable educational pathways for students.
- Consider the full cost of attendance for each sector when addressing affordability.



Play a critical role in addressing affordability, including through institutional aid and financial aid policies.

- Provide services that support student success.
- Commit to serving a diverse student body, including low-income and first-generation students.



Businesses and private donors play an important role in addressing affordability through tuition and scholarship support and mentorship.

- Employer training programs.
- Employer tuition assistance.
- Funding for scholarship support.
- Internships and mentoring programs.



Measuring affordability

Paying for postsecondary education has three major components.

Costs

Include tuition and fees, books, room and board, etc.

Aid

The system by which some costs are reduced or waived, lowering total cost for recipients.

Student Options

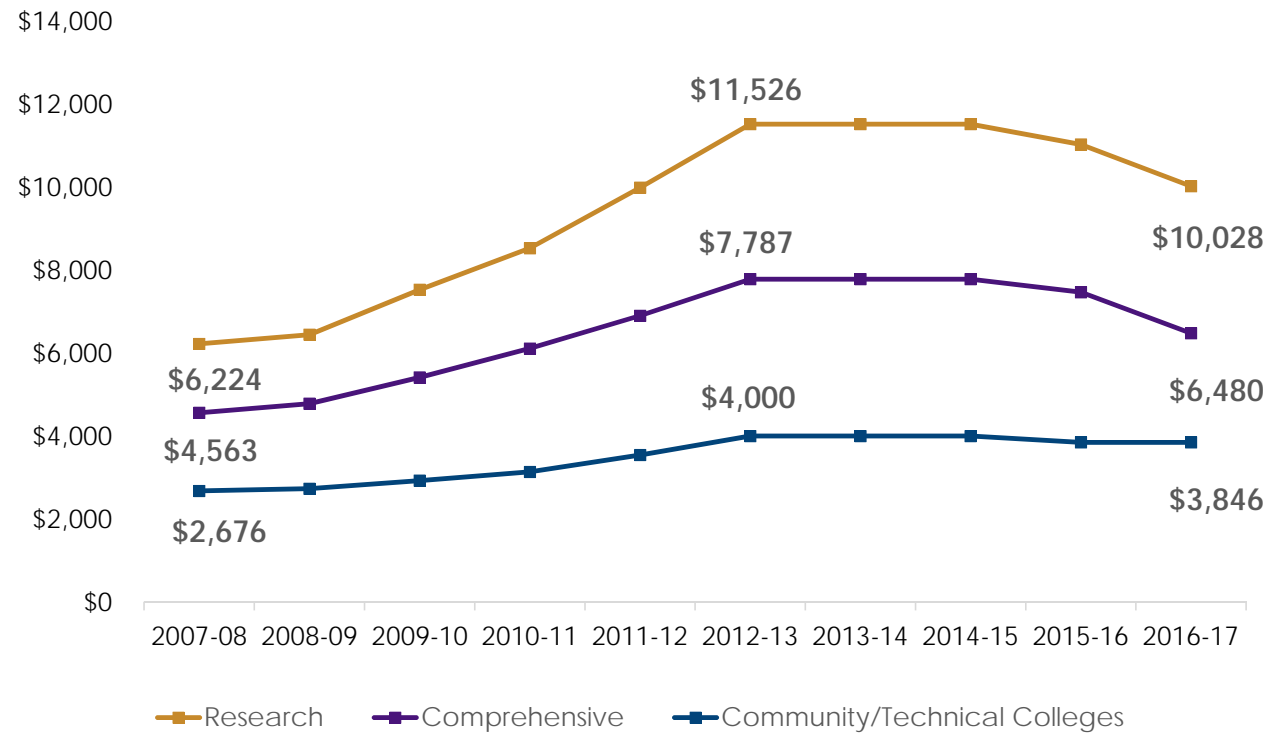
Students then have to decide how to pay for their net costs, the cost remaining after any aid is applied. They can work, borrow, attend part-time, choose different institutions, etc.

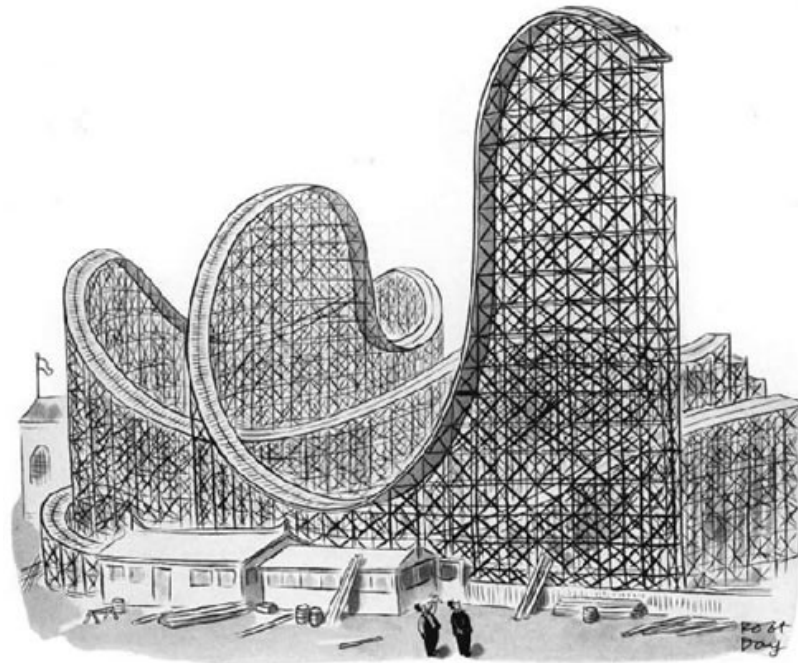


Tuition Rates from Recession to Present

Following steep increases during the recession, tuition held steady and then decreased.

Resident Undergraduate Tuition Rates



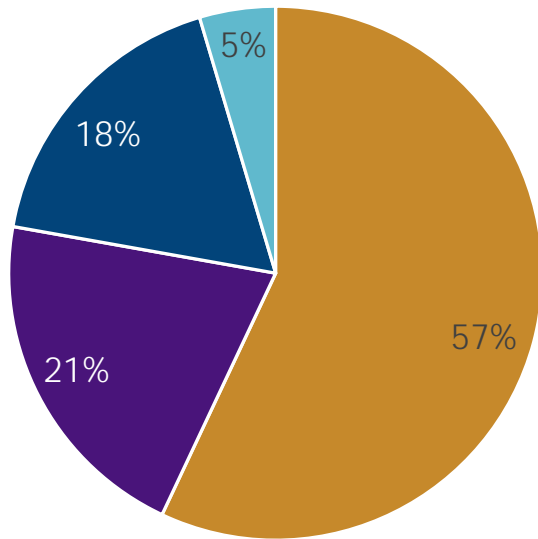


TUITION POLICY. THE RIDE.



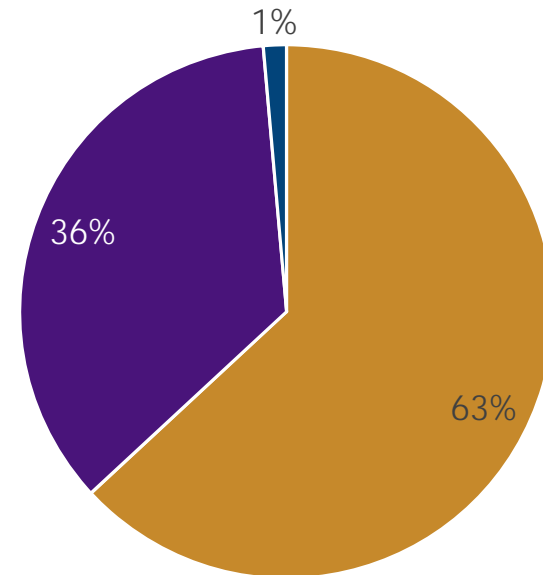
Nearly \$2 Billion in Aid Serving Washington Undergraduates

2014-15 Total Aid by Source



■ Federal ■ State ■ Institutional ■ Private

2014-15 Total Aid by Type



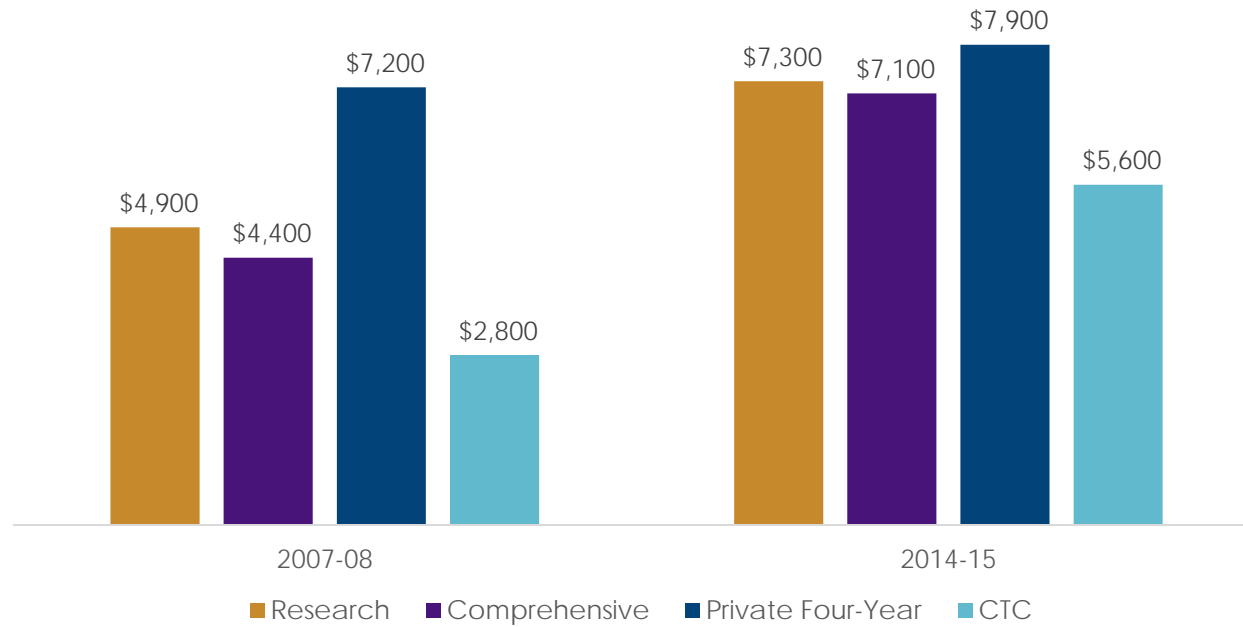
■ Grants/Scholarship ■ Loans ■ Work ■

Washington Student Achievement Council. *Unit Record Report, 2014-15*. [WA resident undergraduate need-based recipients]. R:KL



Student Borrowing Increased During the Recession

Resident Undergraduate Borrowers with Need



WSAC. *Unit Record Report, 2007-08 & 2014-15*. [WA resident undergraduate need-based recipients, PLUS loans excluded]. R:KL



Washington State Aid

Supporting students with financial assistance.



State Need Grant: The State's Flagship Aid Program

68
institutions

71,000
students

\$295
Million,
FY 16

Washington is nationally recognized for its commitment to financial aid.

State Need Grant (SNG) has supported low-income undergraduate students for 45 years.

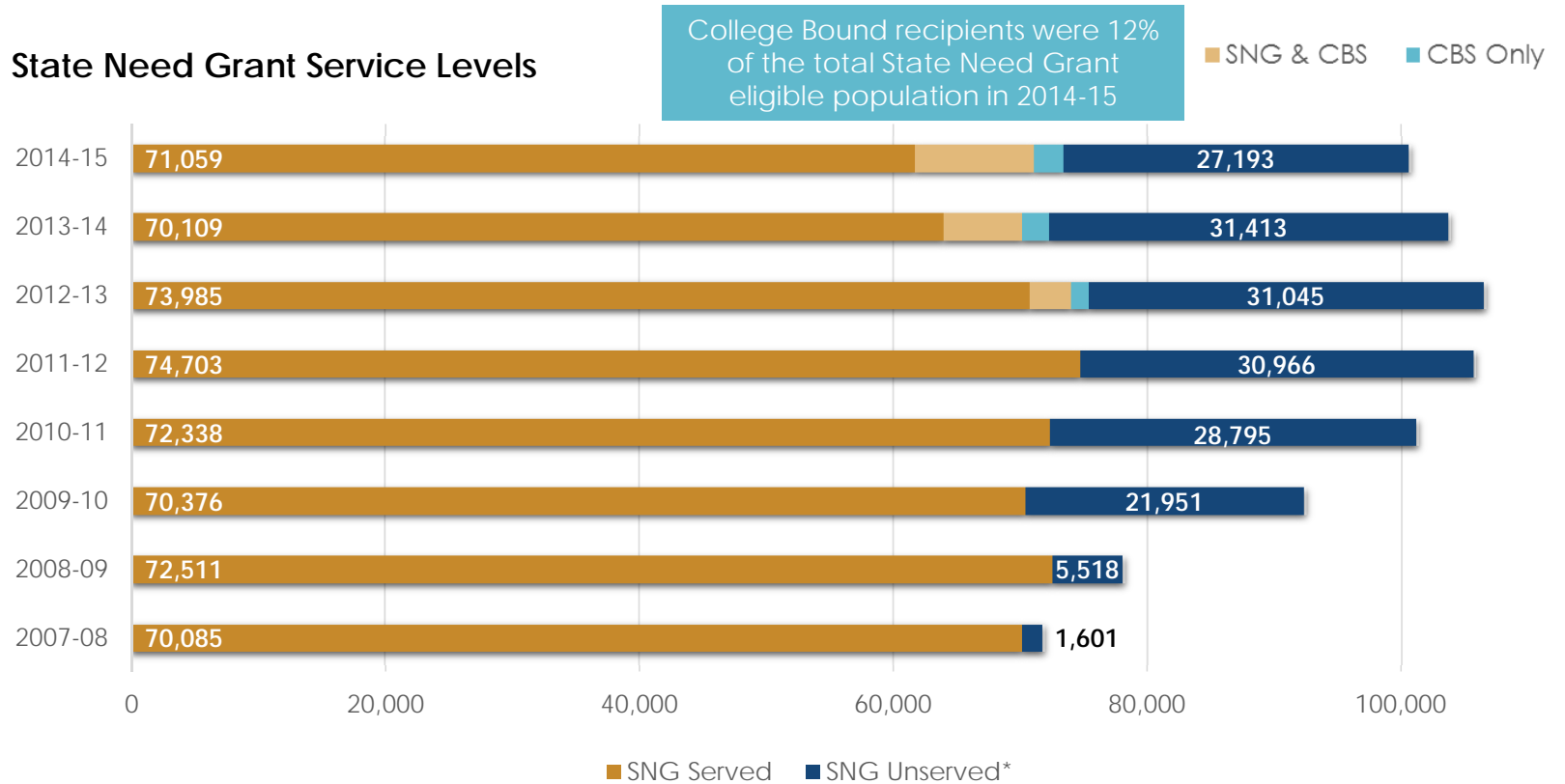
SNG is a critical strategy to reach the state's attainment goals.

SNG supports the College Bound Scholarship.



Unserved Student Trend Continues

Although enrollments have declined in the two-year sector, total eligible students remain high.



WSAC Final Interim Report, 2007-08 to 2014-15. Unserved data for 2012-13 through 2014-15 reflect coordination policy in the 2015 operating budget. R:KL



College Bound Pledge



In middle school, eligible students pledge to:

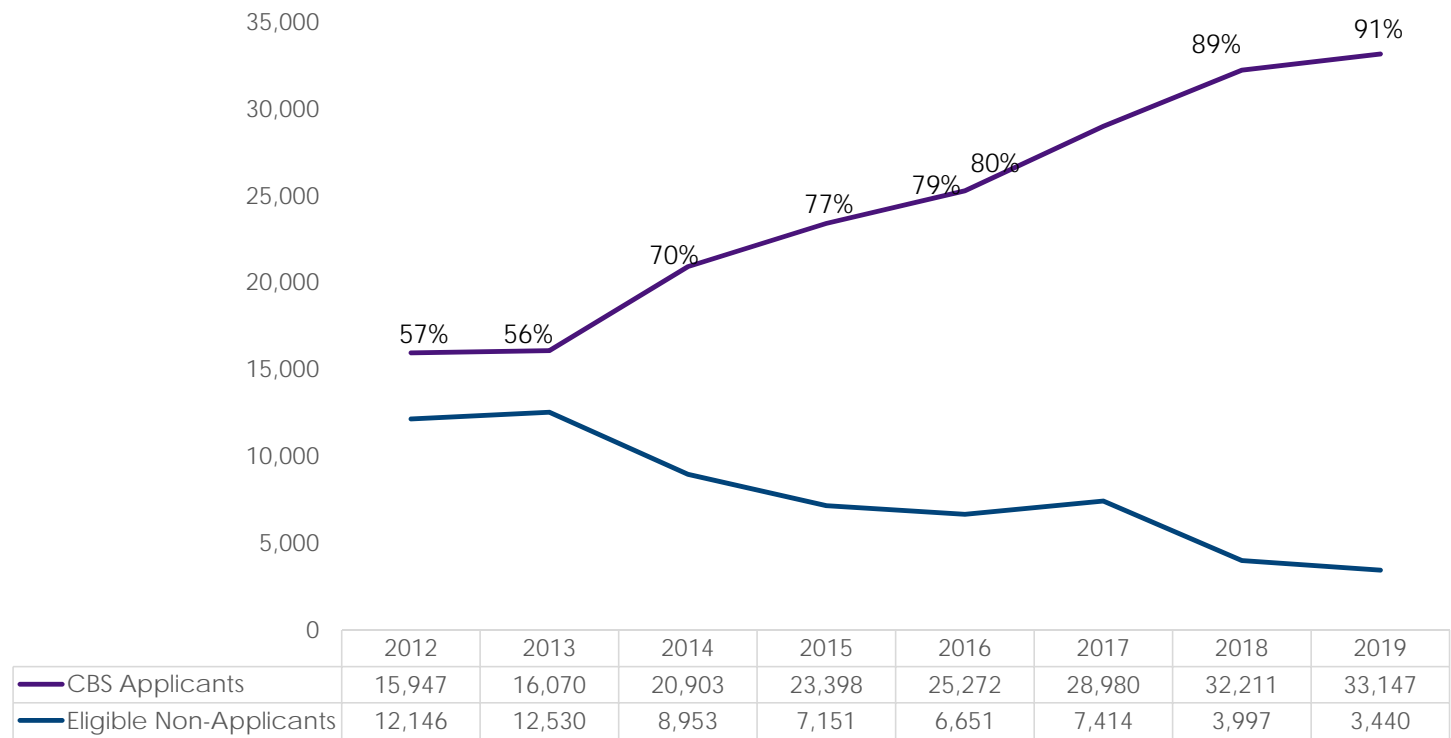
- Graduate high school with a cumulative 2.0 GPA.
- Stay crime-free.
- Prepare for and be admitted to college.
- Apply for financial aid in a timely manner.



CBS Sign-Up Continue to Increase

Applications up 34 percentage points over seven years.

As of June 2016, over 241,000 students have applied (164,000 are still in K12).

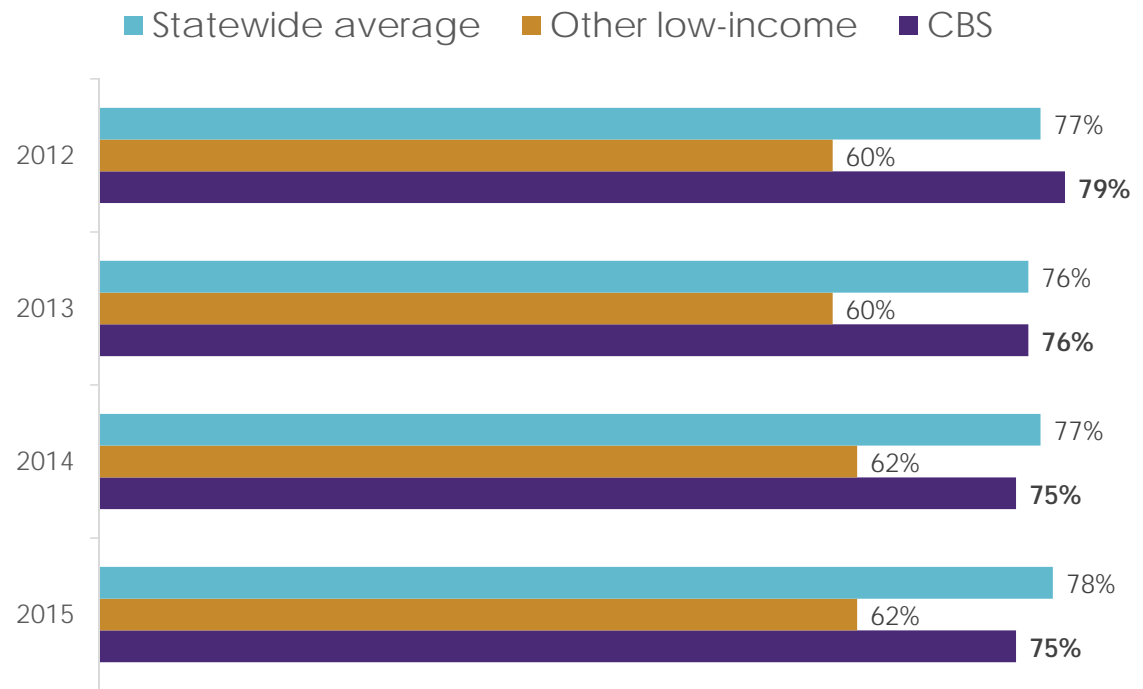


Source: WSAC CBS Applicant Data and Annual Press Release, October 2015. OSPI State Report Card (2006-07 to 2012-13). R:KL



CBS High School Graduation Rates

Graduation rates for CBS students are at least ten percentage points higher than those of their non-CBS low-income peers.



Source: OSPI staff analysis of WSAC CBS applicant data. R:KL



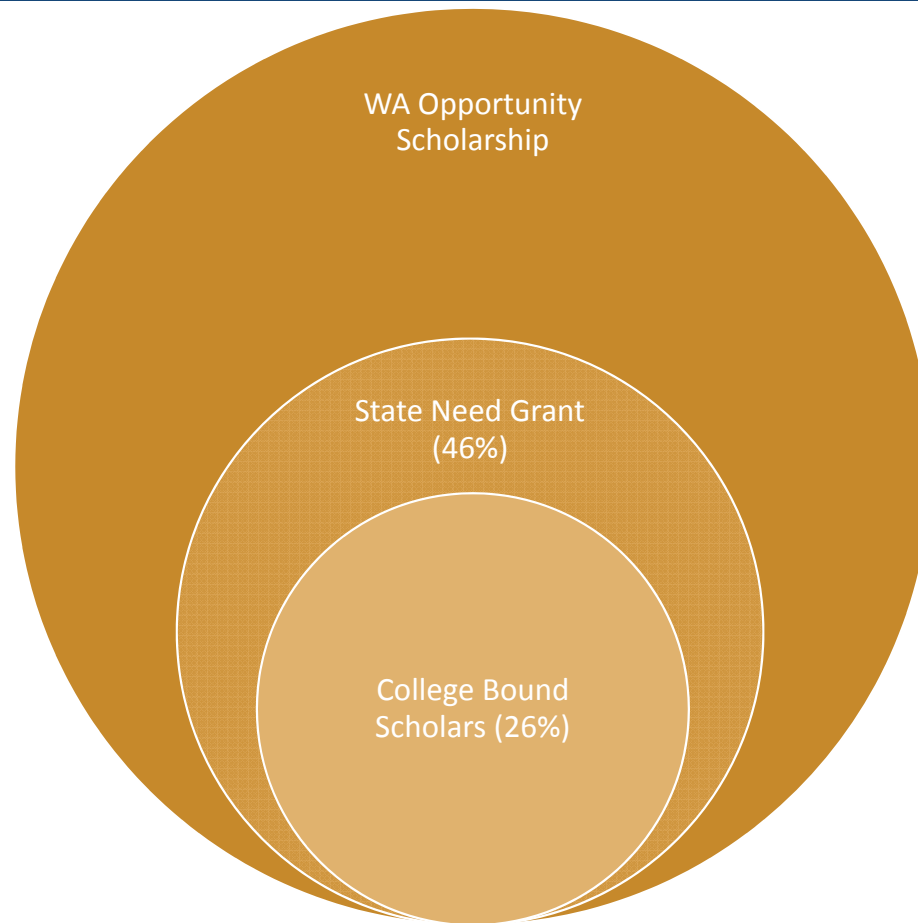
State Aid Programs Target Different Student Groups

	State Need Grant	College Bound Scholarship	WA Opportunity Scholarship	SBCTC Opportunity Grant
Number Students	71,038	11,669	2,294	5,091
% Two-Year	63%	50%	12%	99%
% Four-Year	37%	50%	88%	1%
Percent younger than 24	54%	100%	92%	22%
% Dependent & Avg. Income	41% \$26,700	91% \$28,100	87% \$56,200	10% \$19,800
% Independent & Avg. Income	59% \$14,700	9% \$6,100	13% \$17,300	90% \$12,500
Full-time in Fall	77%	81%	96%	56%
Students of Color	42%	61%	46%	43%
Have Children	27%	2%	3%	50%

Note: State aid student profile, 2014-15. Unit Record Report.



WOSP Combines with Other State Aid for Support





Other State Aid Programs

State Work Study Employment

- A public-private partnership providing employment and funding to eligible students.
- 4,473 students received \$12.5 million in 2014-15.

Passport to College Promise Scholarship

- Scholarship for foster youth.
- Provides support services and administrative allowance to institutions.
- 363 students received \$1.3 million in 2014-15.

Workforce Related

- Health Professionals Loan Repayment
- Alternative Routes for Teachers
- Aerospace Loan

Note: Programs administered by WSAC.



Affordability Interactive Model

Setting parameters of affordability and evaluating proposals



Affordability Model – Comprehensive Institution, Living on Campus, 2014

FAMILY'S SHARE

- 20% Discr. income annually during college < [] >
- 200% Family income exclusion threshold < [] >
- 10 Years of saving < [] >
- 5% Discretionary income saved annually < [] >
- 1.0% Interest on savings < [] >

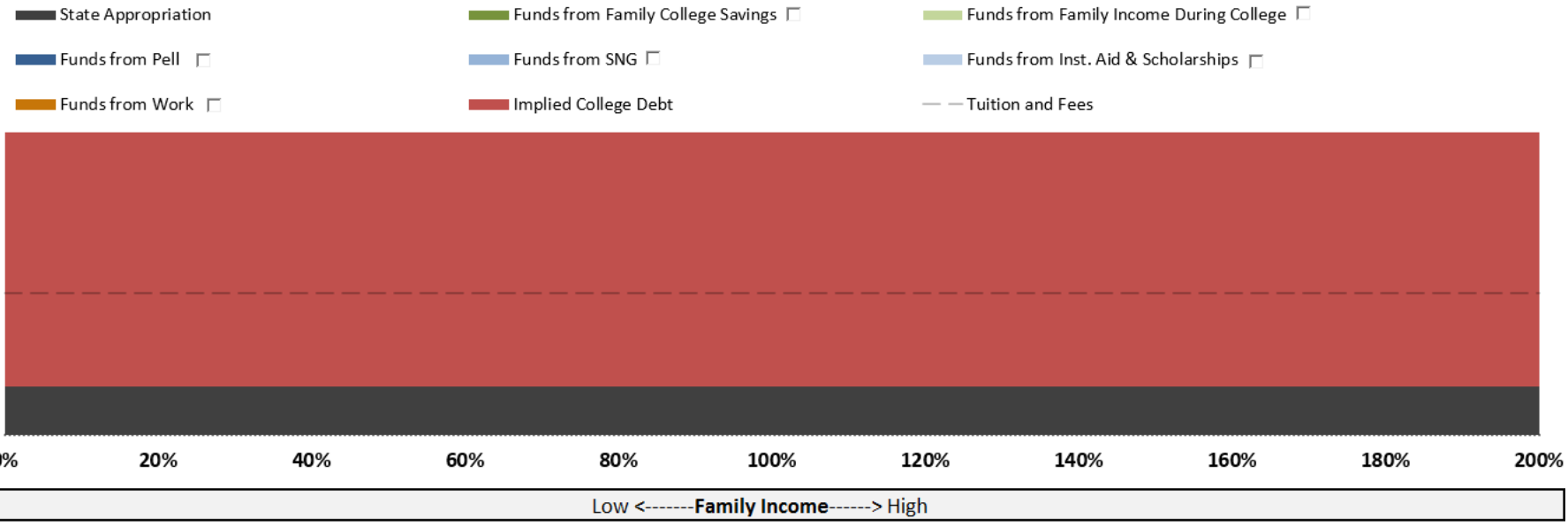
STUDENT'S SHARE

- 500 hrs worked < [] >
Annual take-home pay is \$3,681
- 9.26 \$/hr base pay
- 0.0% Student debt ratio < [] >

POLICY CHANGE

- 0.0% Tuition change < [] > *Tuition is \$8,053*
- 0.0% SNG served change < [] >

Policy impact on budgets	Schools: 0.0%
	State: 0.0%





Affordability Model – Comprehensive Institution, Living on Campus 2017

FAMILY'S SHARE

- 20% Discr. income annually during college
- 200% Family income exclusion threshold
- 10 Years of saving
- 5% Discretionary income saved annually
- 1.0% Interest on savings

STUDENT'S SHARE

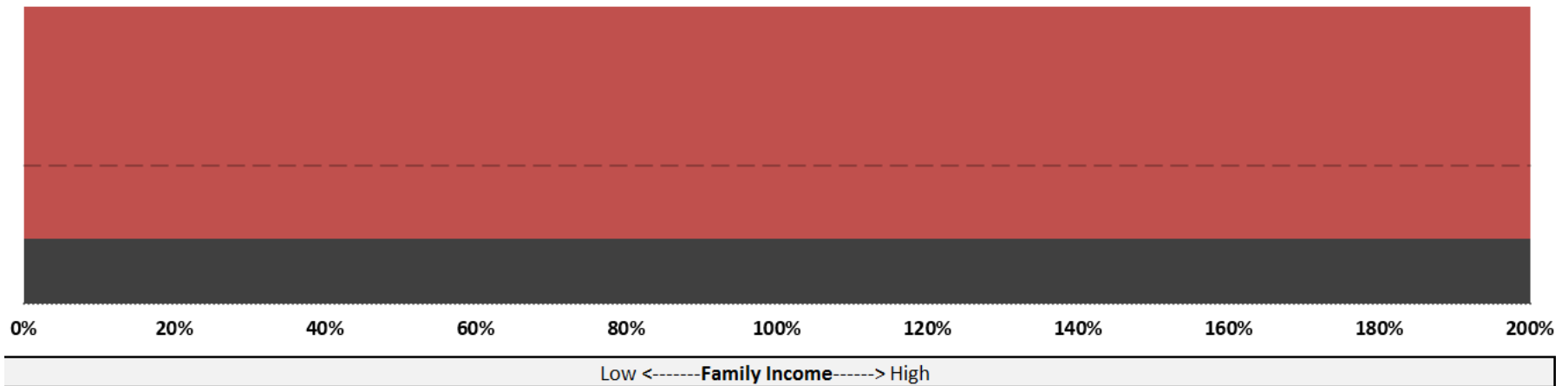
- 500 hrs worked
Annual take-home pay is \$3,681
- 9.26 \$/hr base pay
- 0.0% Student debt ratio

POLICY CHANGE

- 19.5% Tuition change *Tuition is \$6,482*
- 0.0% SNG served change

Policy impact on budgets	Schools: 0.0%
	State: 20.9%

- State Appropriation
- Funds from Family College Savings
- Funds from Family Income During College
- Funds from Pell
- Funds from SNG
- Funds from Inst. Aid & Scholarships
- Funds from Work
- Implied College Debt
- Tuition and Fees





Affordability Model – Comprehensive Institution, Living on Campus 2017

FAMILY'S SHARE

- 20% Discr. income annually during college
- 200% Family income exclusion threshold
- 10 Years of saving
- 5% Discretionary income saved annually
- 1.0% Interest on savings

STUDENT'S SHARE

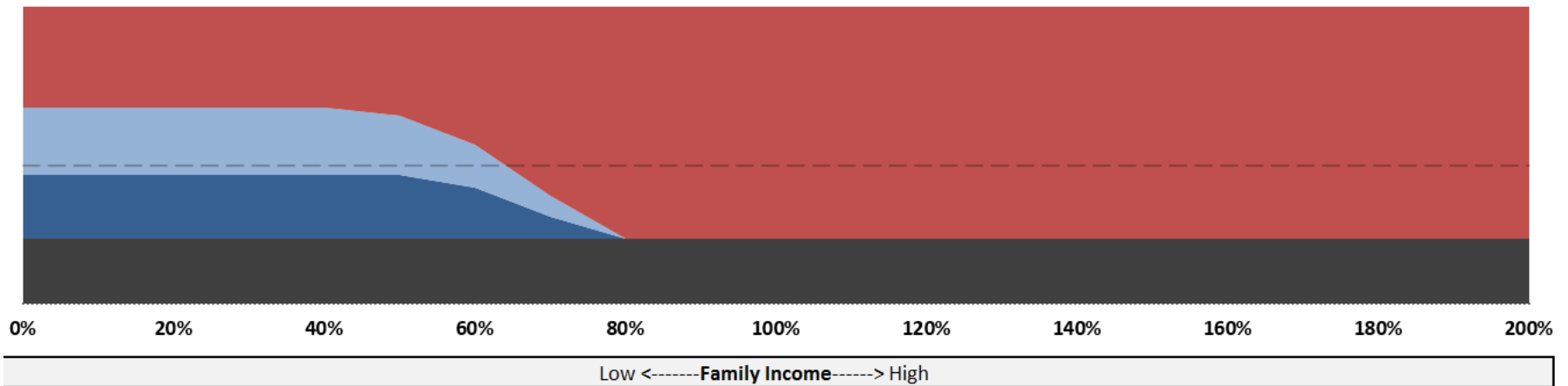
- 500 hrs worked
Annual take-home pay is \$3,681
- 9.26 \$/hr base pay
- 0.0% Student debt ratio

POLICY CHANGE

- 19.5% Tuition change *Tuition is \$6,482*
- 0.0% SNG served change

Policy impact on budgets	Schools: 0.0%
	State: 20.9%

- State Appropriation
- Funds from Family College Savings
- Funds from Family Income During College
- Funds from Pell
- Funds from SNG
- Funds from Inst. Aid & Scholarships
- Funds from Work
- Implied College Debt
- Tuition and Fees





Affordability Model – Comprehensive Institution, Living on Campus 2017

FAMILY'S SHARE

- 20% Discr. income annually during college
- 200% Family income exclusion threshold
- 10 Years of saving
- 5% Discretionary income saved annually
- 1.0% Interest on savings

STUDENT'S SHARE

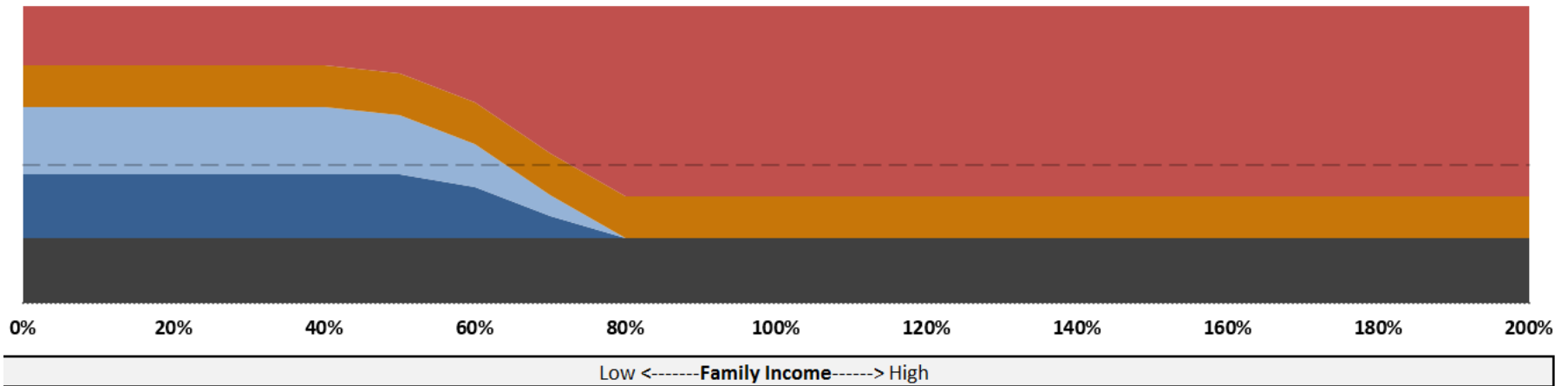
- 500 hrs worked
Annual take-home pay is \$3,681
- 9.26 \$/hr base pay
- 0.0% Student debt ratio

POLICY CHANGE

- 19.5% Tuition change *Tuition is \$6,482*
- 0.0% SNG served change

Policy impact on budgets	Schools: 0.0%
	State: 20.9%

- State Appropriation
- Funds from Family College Savings
- Funds from Family Income During College
- Funds from Pell
- Funds from SNG
- Funds from Inst. Aid & Scholarships
- Funds from Work
- Implied College Debt
- Tuition and Fees





Affordability Model – Comprehensive Institution, Living on Campus 2017

FAMILY'S SHARE

- 20% Discr. income annually during college
- 200% Family income exclusion threshold
- 4 Years of saving
- 1% Discretionary income saved annually
- 1.0% Interest on savings

STUDENT'S SHARE

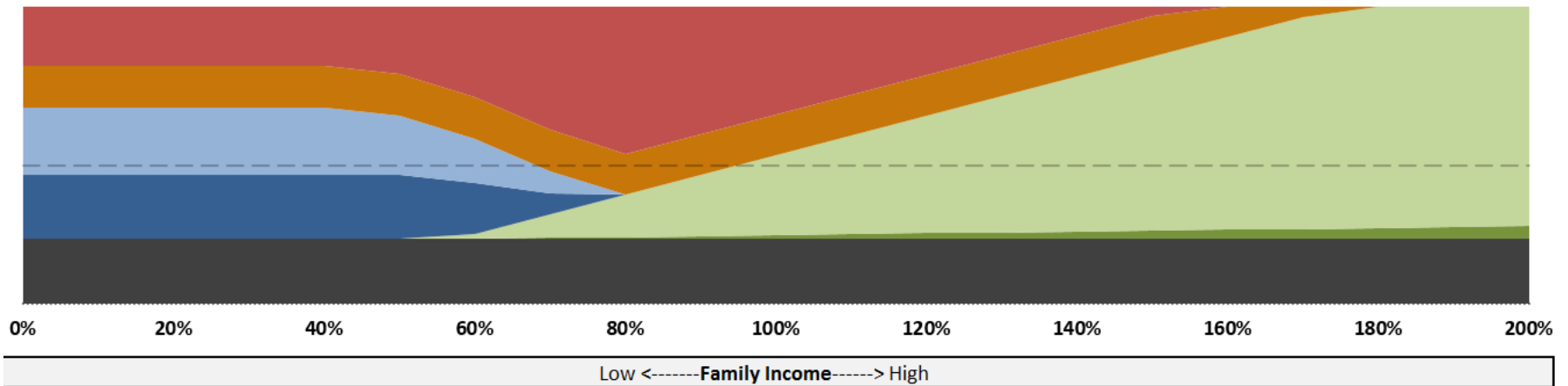
- 500 hrs worked
Annual take-home pay is \$3,681
- 9.26 \$/hr base pay
- 0.0% Student debt ratio

POLICY CHANGE

- 19.5% Tuition change
Tuition is \$6,482
- 0.0% SNG served change

Policy impact on budgets	Schools: 0.0%
	State: 20.9%

- State Appropriation
- Funds from Family College Savings
- Funds from Family Income During College
- Funds from Pell
- Funds from SNG
- Funds from Inst. Aid & Scholarships
- Funds from Work
- Implied College Debt
- Tuition and Fees





Affordability Model – Comprehensive Institution, Living on Campus 2017

FAMILY'S SHARE

- 20% Discr. income annually during college
- 200% Family income exclusion threshold
- 4 Years of saving
- 1% Discretionary income saved annually
- 1.0% Interest on savings

STUDENT'S SHARE

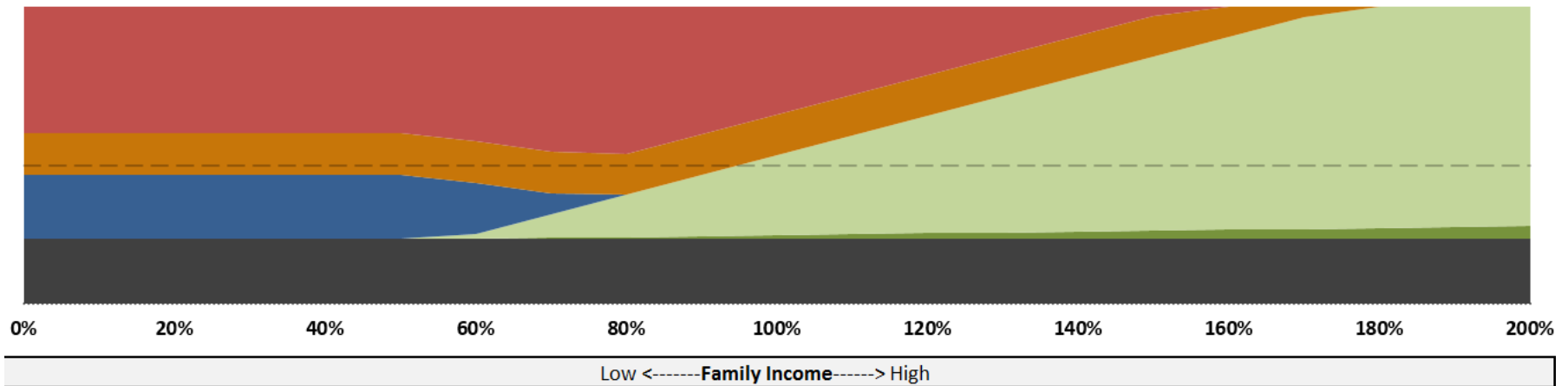
- 500 hrs worked
Annual take-home pay is \$3,681
- 9.26 \$/hr base pay
- 0.0% Student debt ratio

POLICY CHANGE

- 19.5% Tuition change *Tuition is \$6,482*
- 0.0% SNG served change

Policy impact on budgets	Schools: 0.0%
	State: 20.9%

- State Appropriation
- Funds from Family College Savings
- Funds from Family Income During College
- Funds from Pell
- Funds from SNG
- Funds from Inst. Aid & Scholarships
- Funds from Work
- Implied College Debt
- Tuition and Fees





Affordability Model – Research University, Living On campus, 2014

FAMILY'S SHARE

- 20% Discr. income annually during college
- 200% Family income exclusion threshold
- 4 Years of saving
- 1% Discretionary income saved annually
- 1.0% Interest on savings

STUDENT'S SHARE

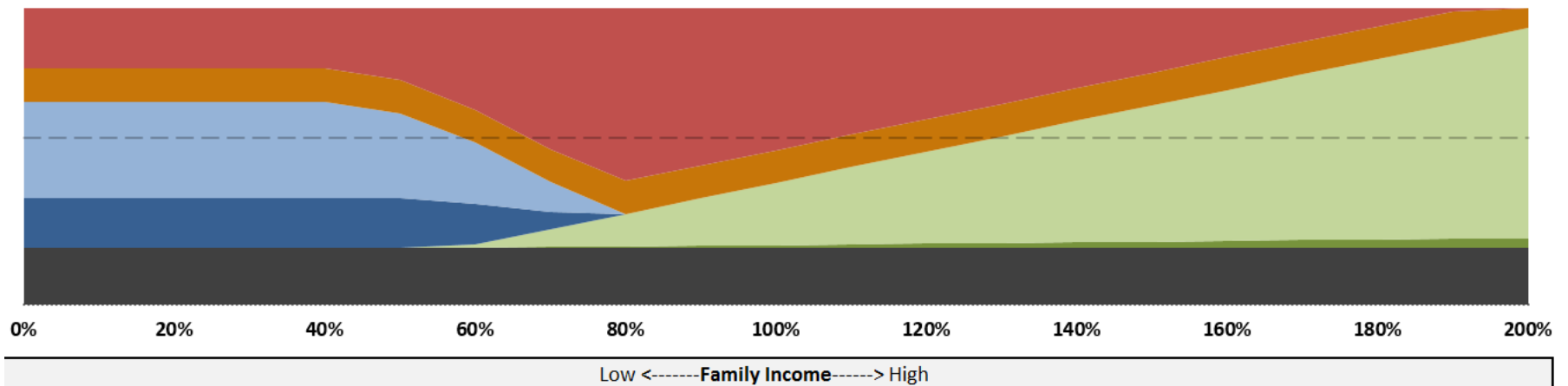
- 500 hrs worked
Annual take-home pay is \$3,681
- 9.26 \$/hr base pay
- 0.0% Student debt ratio

POLICY CHANGE

- 0.0% Tuition change *Tuition is \$12,397*
- 0.0% SNG served change

Policy impact on budgets	Schools: 0.0%
	State: 0.0%

- State Appropriation
- Funds from Family College Savings
- Funds from Family Income During College
- Funds from Pell
- Funds from SNG
- Funds from Inst. Aid & Scholarships
- Funds from Work
- Implied College Debt
- Tuition and Fees



Low <-----Family Income-----> High



Affordability Model – Research University, Living On Campus, 2017

FAMILY'S SHARE

- 20% Discr. income annually during college
- 200% Family income exclusion threshold
- 4 Years of saving
- 1% Discretionary income saved annually
- 1.0% Interest on savings

STUDENT'S SHARE

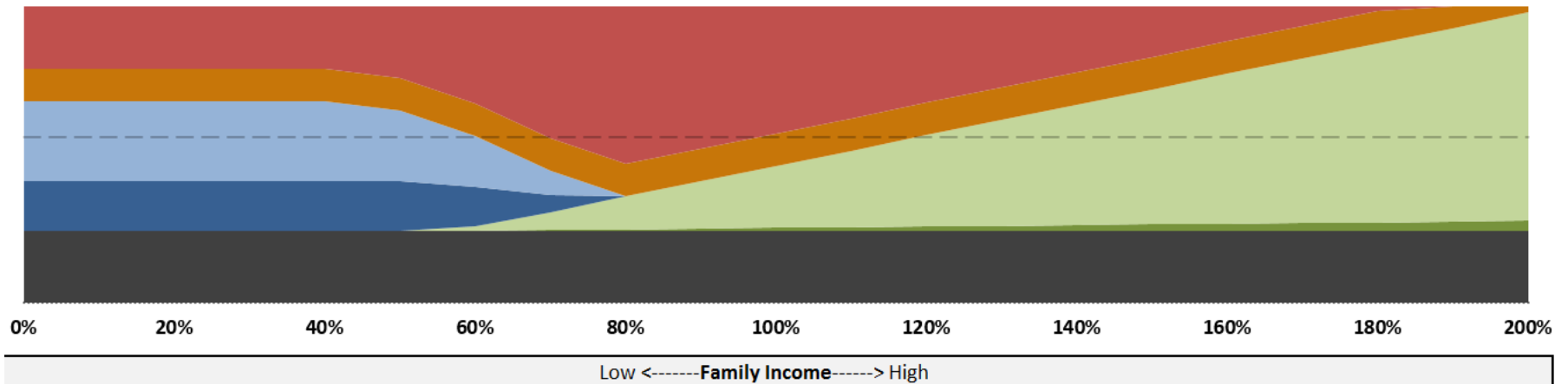
- 500 hrs worked
Annual take-home pay is \$3,681
- 9.26 \$/hr base pay
- 0.0% Student debt ratio

POLICY CHANGE

- 14.5% Tuition change *Tuition is \$10,599*
- 0.0% SNG served change

Policy impact on budgets	Schools: 0.0%
	State: 19.0%

- State Appropriation
- Funds from Family College Savings
- Funds from Family Income During College
- Funds from Pell
- Funds from SNG
- Funds from Inst. Aid & Scholarships
- Funds from Work
- Implied College Debt
- Tuition and Fees





Affordability Model – Community College, Living at Home, 2014

FAMILY'S SHARE

- 20% Discr. income annually during college
- 200% Family income exclusion threshold
- 4 Years of saving
- 1% Discretionary income saved annually
- 1.0% Interest on savings

STUDENT'S SHARE

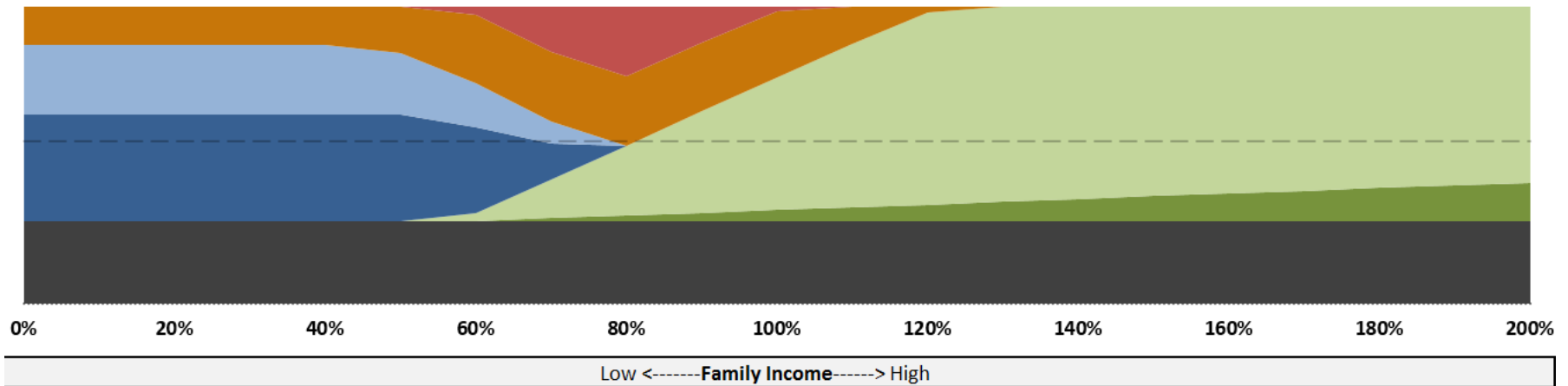
- 500 hrs worked
Annual take-home pay is \$3,681
- 9.26 \$/hr base pay
- 0.0% Student debt ratio

POLICY CHANGE

- 0.0% Tuition change *Tuition is \$4,233*
- 0.0% SNG served change

Policy impact on budgets	Schools: 0.0%
	State: 0.0%

- State Appropriation
- Funds from Family College Savings
- Funds from Family Income During College
- Funds from Pell
- Funds from SNG
- Funds from Inst. Aid & Scholarships
- Funds from Work
- Implied College Debt
- Tuition and Fees





Affordability Model – Community College, Living at Home, 2017

FAMILY'S SHARE

- 20% Discr. income annually during college
- 200% Family income exclusion threshold
- 4 Years of saving
- 1% Discretionary income saved annually
- 1.0% Interest on savings

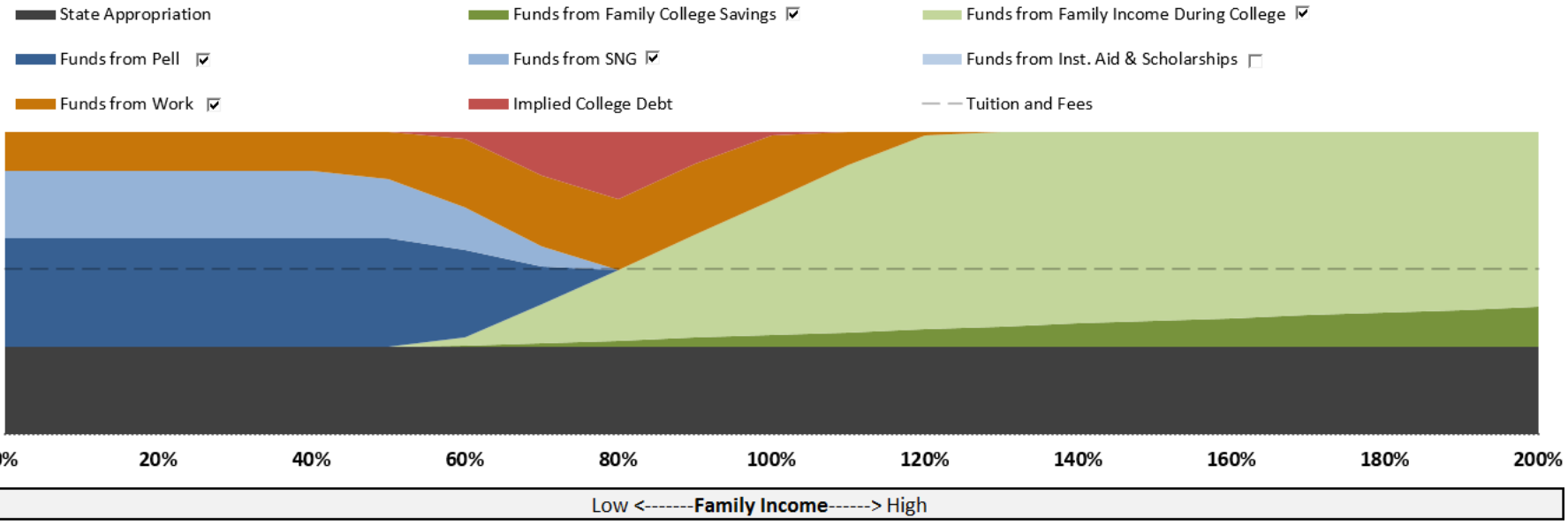
STUDENT'S SHARE

- 500 hrs worked
Annual take-home pay is \$3,681
- 9.26 \$/hr base pay
- 0.0% Student debt ratio

POLICY CHANGE

- 5.0% Tuition change *Tuition is \$4,021*
- 0.0% SNG served change

Policy impact on budgets	Schools: 0.0%
	State: -4.6%



Low <-----Family Income-----> High



Continue the conversation

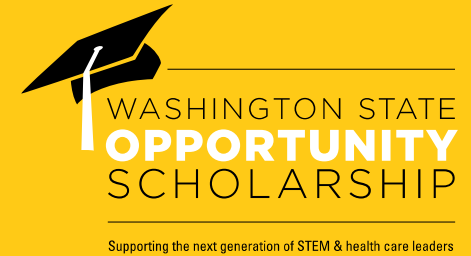
Rachelle Sharpe

rachelles@wsac.wa.gov

Tab D

Opportunity Expansion Grant Proposals

Opportunity Expansion Fund



- Per HB 2801, Washington companies could donate high-tech, research & development (R&D) tax credits to increase the capacity of Washington colleges and universities to produce high-demand degrees
- \$6 million certified to be granted

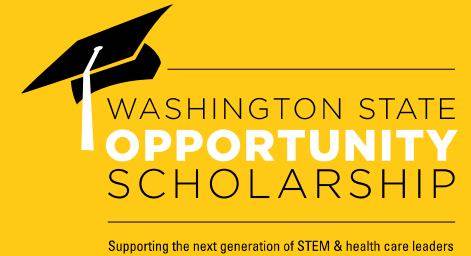


Opportunity Expansion Fund



- Working group of fourteen community, business, & government leaders gathered to develop a Request for Information (ROI) process
- Priorities developed by working group:
 - ✓ Computer Science
 - ✓ Engineering
 - ✓ STEM-related Teacher Education
- **20 applications received to fund \$50M+ in programs**

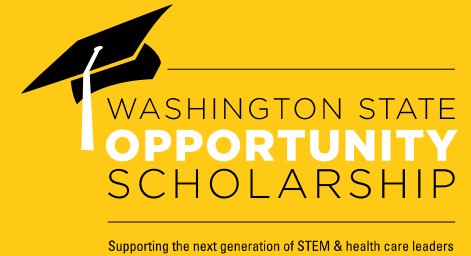
Opportunity Expansion Fund



Funding Recommendation:

Institution	Subject of Proposal	Recommended Funding Amount
Central Washington University	CWU Teach to expand the number of STEM teachers in Washington State	\$2,189,801
University of Washington STARS Program	Expansion of College of Engineering STARS program	\$2,189,987
Western Washington University	Computer Science Department and Computer Science Teacher Certification Program	\$1,620,212
	Total	\$6,000,000

Opportunity Expansion Fund

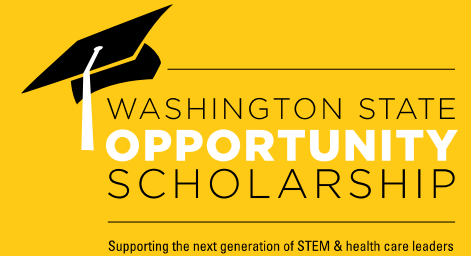


Central Washington University – CWU Teach Program

- Start-up funds to develop a new teacher recruiting and retention program (modeled after UT Austin's UTeach program)
- Also aims to develop a new Computer Science teaching endorsement and Math competency
- 45 additional degrees in teaching of STEM (K-12)
- Recommended funding amount: \$2,189,801



Opportunity Expansion Fund

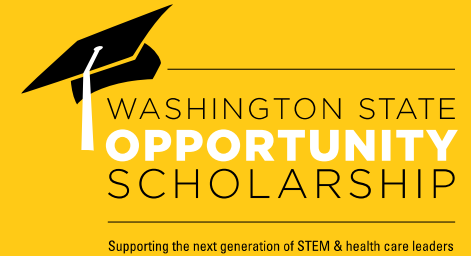


University of Washington – STARS Program

- Expansion of UW's STARS program which provides intensive wraparound services to first-year, Pell-eligible Engineering students
- 519 new students will achieve degrees with this investment
- Recommended funding amount: \$2,189,987



Opportunity Expansion Fund



Western Washington University

- Expansion of Computer Science degree program and develop new Computer Science K-12 endorsement at WWU's Center for Science Math and Technology (SMATE)
- Would add 45 students per year (by 2020)
- Recommended funding amount: \$\$1,620,212





Supporting the next generation of STEM & health care leaders

To: Washington State Opportunity Scholarship (WSOS) Board of Directors
 From: Opportunity Expansion Fund Working Group
 Date: June 13, 2016
 Subject: Opportunity Expansion Fund Recommendations

In addition to managing the scholarship portion of the Washington State Opportunity Scholarship, per HB 2801, the WSOS Board of Directors also has the authority to distribute donations to the Opportunity Expansion Fund (OEF). As of October 31, 2015, \$6,000,326.64 had been certified and transferred to the Opportunity Expansion Account for the purpose of supporting opportunity expansion awards – awards to increase the capacity of Washington colleges and universities to produce high-demand degrees.

To that end, a working group was formed in the early part of 2016 to conduct an LOI process to seek successful applicants. The working group is comprised of the following individuals:

- » John Aultman, Office of the Governor#
- » Kristen Avery, Center for Education Results, The Road Map Project#
- » Cherie Berthon, Office of the Governor#
- » Theresa Britschgi, WSOS#
- » Jane Broom, Microsoft#
- » Mack Hogans, WSOS Board of Directors#
- » Caroline Maillard, Boeing#
- » Tim Probst, Employment Security Department#
- » Naria K. Santa Lucia, WSOS#
- » Juliette Schindler Kelly, CSF#
- » Rachelle Sharpe, Washington Student Achievement Council#
- » Andy Shouse, Washington STEM#
- » Brian Surratt, City of Seattle#
- » Mary Trimarco, Northeastern University#

Specifically, the working group decided to focus its efforts on funding capacity building and expansion efforts in computer science, engineering and STEM-related teacher education.

In the initial round of applications, 20 colleges and universities responded with requests totaling nearly \$50 million. Of these proposals, five schools were asked to submit full applications.

After reviewing final applications, the Opportunity Expansion Fund Working Group would like to recommend funding by the WSOS Board of Directors of the following proposals (full proposals are attached):

Institution	Subject of Proposal	Recommended Funding Amount
Central Washington University	CWU Teach to expand the number of STEM teachers in Washington State	\$2,189,801
University of Washington STARS Program	Expansion of College of Engineering STARS program	\$2,189,987
Western Washington University	Computer Science Department and Computer Science Teacher Certification Program	\$1,620,212



Supporting the next generation of STEM & health care leaders

Requests for Letters of Interest Opportunity Expansion Fund

Today, less than 10 percent of children born in Washington find employment in STEM jobs. One significant barrier has been, and continues to be, a lack of capacity and space at our state's colleges and universities to meet the demand of students who are wishing to pursue high demand STEM degrees.

Washington State Opportunity Scholarship (WSOS) invites four-year, higher education institutions and community and technical colleges in Washington state to submit a Letter of Interest (LOI) to increase the number of WSOS students, or WSOS-like students who graduate in computer science, engineering, or teaching of STEM (K-12), resulting in an overall increase in the total number of Washington state graduates in those fields.

WSOS students are receiving the WSOS scholarship and are graduates of Washington state high schools, attending college full-time, pursuing their first bachelor's degree in an eligible high-demand major in STEM and health care, and whose families are low- to moderate-income. WSOS student eligibility requirements are currently described in RCW 28B.145.040. WSOS-like students are students who match the criteria of WSOS scholars but are not enrolled in WSOS.

We are seeking proposals designed to directly increase the number of baccalaureate degrees produced in high employer demand fields in three key STEM areas: computer science, engineering, and teaching of STEM (K-12). We also welcome proposals to increase the number of students completing two-year degrees at community and technical colleges who transfer in and complete degrees in the three key areas. Ultimately, these proposals will help address our state's urgent need to graduate more students in high demand fields who are also Washington residents. We expect to raise the number of first-generation, college graduates who gain access to these high paying fields.

STEM employers in Washington create hundreds of new jobs each year. Unfortunately, many of these jobs go unfilled for extended periods due to a lack of qualified candidates. This hurts both our residents and companies seeking growth opportunities. At the same time, we face a crisis in the availability of K-12 teachers who are trained to teach computer science and engineering at the highest level. Our state's higher education institutions are eager to fill both these gaps.

It is our hope this LOI request will allow institutions to bring forth their best ideas and strategies to help meet the growing demand for more graduates of computer science, engineering and STEM (K-12) teaching programs. Interested parties may apply by email no later than February 19, 2016 by 5pm. Please send your proposal to Naria K. Santa Lucia, Executive Director of the Washington State Opportunity Scholarship at nsantalucia@waopportunitiescholarship.org. No written or late submissions will be accepted.



Supporting the next generation of STEM & health care leaders

An information session for prospective LOI bidders is scheduled for January 15, 2016 at 10:30am via teleconference. Please call: 877-366-071 and enter the code: 819-453-48#.

OVERVIEW OF WASHINGTON STATE OPPORTUNITY SCHOLARSHIP

The Washington State Opportunity Scholarship helps low- and middle-income Washington state residents earn their bachelor's degrees in the high-demand fields of science, technology, engineering, math and health care. Created in 2011, WSOS addresses the unfilled seats in the high-demand sectors that drive our economy like aerospace, engineering, technology and health care as well as rising tuition costs at Washington colleges and universities. Businesses and the Washington State Legislature joined forces to fulfill the promise of better education and career opportunities for Washington students. Together they have created a unique public-private partnership, with significant support from founding partners Boeing and Microsoft and matching dollars from the State.

This first-of-its-kind program supports Washington students from low- and middle-income households to attain bachelor's degrees in high-demand fields including science, technology, engineering, math (STEM) and health care through scholarships of up to \$22,500 as well as professional development, skills-building workshops and genuine industry exposure to help increase the rate at which students enter our state's workforce.

BACKGROUND OF WSOS OPPORTUNITY EXPANSION FUND

As part of WSOS' initial formation, the Washington State Legislature also created the Opportunity Expansion Fund to help institutions of higher education increase the number of baccalaureate degrees produced in high employer demand fields. The legislature set annual numerical targets for the number of such degrees, with a strong emphasis on serving students who received their high school diploma or high school equivalency certificate in Washington or are adult Washington residents who are returning to school to gain a baccalaureate degree. Statutory language describing the Opportunity Expansion Program can be found in RCW 28B.145.060.

Support for the Opportunity Expansion Fund comes from the high tech research and development tax credit. Technology companies who invest in research and development earned a tax credit which they could choose to retain or donate to the Opportunity Expansion Fund. A total of \$6 million dollars was raised from a single source: Microsoft. The tax credit has expired which makes funding a one-time opportunity. The Opportunity Expansion Fund Program Committee of WSOS has been charged with making a recommendation on how funds are dispersed through a competitive process. Final awards will be approved by the WSOS Board of Directors.

AVAILABLE FUNDING

A total of \$6 million dollars is available for one-time funding support. WSOS anticipates funding between 1-3 grant proposals with a minimum request of approximately \$2 million. Funding can be structured in several payments within a single year, or in payments over the course of 2-3 years. Budgets may include indirect costs up to 15 percent of total program costs.



Supporting the next generation of STEM & health care leaders

PROGRAM OUTCOMES

The Opportunity Expansion Fund joins together the interests of the Washington State Legislature with the mission of WSOS. The Program Committee will consider proposals that are innovative, efficient, and cost-effective, given the nature and cost of the particular program of study. Proposals shall describe how their strategies will address the following outcome:

To increase the number of WSOS students, or WSOS-like students, who graduate in computer science, engineering, or teaching of STEM (K-12), resulting in an overall increase in the total number of Washington state graduates in those fields.

Priority will be given to proposals that:

- include a partnership between public and private partnership entities that leverage additional private funds;
- propose a plan for sustainability for the program beyond the initial investment by the Opportunity Expansion Fund; and
- demonstrate strong employer engagement within the strategy.

ELIGIBLE GRANTEES

Eligible grantees are the 68 Washington state four-year, public and private higher education institutions and community and technical colleges that provide the Washington State Opportunity Scholarship. To confirm the eligibility of your institution, please go to waopportunityscholarship.org and click on the Interactive Map under the Resources tab.

ELIGIBLE ACTIVITIES

The Program Committee will consider new efforts, pilot projects, as well as existing programs with strong, demonstrated outcomes that seek to expand to new students. Funding for programmatic and capital projects/investments proposals are acceptable and must describe how the investment increases degree production in the targeted areas. Only programs targeted to undergraduates will be reviewed.

SUBMISSION PROCESS

Funding requests will be considered through a two-stage process. Interested institutions must submit a LOI by February 19, 2016 by 5pm. The Program Committee will review submissions and invite the most competitive to submit a formal application. The second stage is a formal application that must be submitted by April 15 by 5pm. Institutions may be asked to present their proposals in person or by teleconference during the week of April 25. Final grant selections will be determined by the WSOS Board of Directors at their June 2016 meeting.



Supporting the next generation of STEM & health care leaders

SUMMARY OF KEY DATES:

Activities	Dates
LOI issued	January 6, 2016
LOI bidders' information session teleconference Call in #: 877-366-0711; code: 819-453-48#	Jan 15 at 10:30am
LOI deadline for submission to WSOS	Feb 19 by 5pm
Selection of finalists for submission of formal proposals	Feb 26
Request for formal proposal applications issued	March 1
Formal application submission deadline to WSOS	April 15 by 5pm
In-person interviews, if needed	Week of April 25
WSOS board approves final grantee selection	June 2016

LETTER OF INTEREST – DUE FEBRUARY 19, 2016 BY 5PM

Prospective grantees will complete the Cover Sheet (see page 7) and submit a Letter of Interest – not to exceed 5 pages -- that includes answers to the following:

1. How is your institution working to increase the number of STEM graduates in our state? What challenges do you face? What are some of your successes or promising efforts?
2. Describe your proposal to increase graduates in computer science, engineering and teaching of STEM education (K-12) and the outcomes for years 1, 3, 5 and 10 for this investment.
3. Describe how your strategy increases the number of degrees in the three target areas and also addresses the related goal to increase the number of WSOS or WSOS-like students who graduate.
4. Describe your institution's demonstrated effectiveness in working with WSOS or WSOS-like students in the three target areas of computer science, engineering and K-12 STEM education.
5. Describe your institutions' demonstrated effectiveness in working with WSOS and WSOS-like students who transfer from community and technical colleges and persist toward baccalaureate degree completion.
6. Describe how employers are engaged in your proposal. What is their role? What types of contribution will they make?
7. Describe the principal staff members likely to be involved in implementing your proposal, their role and 1-2 sentences about their relevant experience.
8. Provide an overall budget for your proposal. Be sure to include how much you are requesting from the Opportunity Expansion Fund, how much is leveraged funding, and your indirect costs.
9. What is your sustainability plan to continue the program beyond the one-time investment of Opportunity Expansion Funds?
10. Please provide the names of the college or university administrators or senior staff members who are responsible for committing the institution to this proposal.



Supporting the next generation of STEM & health care leaders

11. Please provide the following metrics for your institution:

Student Categories	Current Number of Students				Students Achieving Degrees with this Investment			
	Computer Science	Engineering	Teaching STEM (K-12)	Total	Computer Science	Engineering	Teaching STEM (K-12)	Total
1 Students achieving degrees in computer science, engineering, or teaching of STEM (K-12)								
2 Students who earned associates degrees in WA state and transfer into computer science, engineering or teaching of STEM (K-12)								
3 Students who earned associates in WA state and transfer into computer science, engineering or teaching of STEM (K-12) and complete 4 year degrees								
4 WA residents achieving degrees in computer science, engineering, or teaching of STEM (K-12)								
5 WSOS students achieving degrees in computer science, engineering, or teaching of STEM (K-12)								
6 WSOS-like students achieving degrees in computer science, engineering, or teaching of STEM (K-12)								



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SELECTION PROCEDURES

To be considered, a signed copy of the LOI must be submitted electronically to Naria K. Santa Lucia, Executive Director, Washington State Opportunity Scholarship at nsantalucia@waopportunitiescholarship.org before February 19 by 5pm.

Submitted LOIs will first be reviewed by the Executive Director for determination of responsiveness to the requirements of this solicitation. LOIs determined to be responsive will then be reviewed by the Opportunity Expansion Fund Program Committee. The Committee will select the most competitive and invite institutions to submit formal applications. Criteria and submission details for formal applications will be provided to the bidders at that time.

QUESTIONS

For questions about the LOI, please contact Naria Santa Lucia, Executive Director, WSOS, nsantalucia@waopportunitiescholarship.org or 425-679-5550.



WASHINGTON STATE
OPPORTUNITY
SCHOLARSHIP

Supporting the next generation of STEM & health care leaders

**Requests for Letters of Interest
Opportunity Expansion Fund
Cover Sheet**

Date of Application	
Name of Institution	
Department	
Address	
Proposal Contact Person – include title, email, and telephone	
Total Dollars Requested	
Names of the college or university administrators or senior staff members who are responsible for committing the institution to this proposal	
Signature of personnel responsible for committing the institution to this proposal	



Supporting the next generation of STEM & health care leaders

Invitation to Apply
Opportunity Expansion Fund
Cover Sheet

Date of Application	April 15, 2016
Name of Institution	Central Washington University
Department	Science Education (Primary Contact) Mathematics Computer Science Educational Foundations and Curriculum
Address	400 E. University Way Ellensburg, WA 98926-7540
Proposal Contact Person – include title, email and telephone	Jennifer Dechaine Associate Professor of Science Education and Biology Dechaine@cwu.edu 509-963-2878
Total Number of Students Who Will Directly Benefit From Investment By Year*	60 (2016-17) 120 (2019-20; after 3yrs)
Total Dollars Requested	2,941,919
Names of the college or university administrators or senior staff members who are responsible for committing the institution to this proposal	Tim Englund, Dean of the College of the Sciences Paul Ballard, Dean of the College of Education and Professional Studies <i>See CWU Letter of Commitment for additional</i>
Signature of personnel responsible for committing the institution to the proposal	

*Estimated number of students enrolled in middle-level and secondary mathematics and science teaching majors next year and in the third year of CWU Teach, if program outcomes are met. This number should continue to grow at CWU and across Washington State over time. Proposed math competency reform will also directly benefit many additional students in other STEM majors.

CWUTeach: An Innovative Undergraduate STEM Teacher Preparation Program to Increase the Number of STEM Teaching Graduates in Washington State

STEM teaching endorsements in Washington State (WA) have remained stagnant and lagged behind the number of teachers leaving the field for at least 20 years, leading to today's teacher shortage. Numerous factors contribute to the scarcity of qualified STEM teachers; however, a few innovative teacher preparation models, such as the University of Texas at Austin's UTeach program, show that substantial increases in recruiting and retaining STEM teachers can be achieved. Although the UTeach program is an excellent model, it falls short in some of WA's teacher preparation requirements, such as number of clinical practice hours. In this proposal, we request start-up funding to implement **CWUTeach**, an innovative undergraduate STEM teacher preparation program modeled on UTeach but modified to meet the specific needs of WA – the first of its kind in the state. If funded, CWUTeach would greatly improve middle and secondary science, math, and computer science teacher preparation at Central Washington University (CWU) and thus increase recruitment and graduation in these areas. This ambitious program would address needs across the teacher development continuum by investing in recruiting, financially and academically supporting undergraduate STEM teaching majors, mentoring recent graduates, and enhancing STEM education in K-12 classrooms.

Our proposal also includes complementary funding to co-develop a **new computer science teaching endorsement** and for necessary **math competency** reform, which will further increase the number of STEM teaching and other STEM graduates. CWU has long graduated more teachers than any other institution in WA and is a leader in STEM education, demonstrating that we are best positioned to develop, deliver, and disseminate innovative teacher preparation programs. CWUTeach efficiently combines related programs, thus improving the quality of STEM teacher training, as well as making it possible for CWU to institutionalize and sustain the program without extensive new faculty hires and equipment. Finally, CWUTeach will be disseminated statewide, potentially resulting in unprecedented long-term increases in the number of WSOS-like students who graduate in STEM teaching in WA.

Problem and Impact (1)

Improving the STEM workforce pipeline starts with strong P-12 STEM education led by skillful teachers. To this end, the Federal Government's President's Council of Advisors on Science and Technology (PCAST) set the goal in 2010 to "recruit and train 100,000 great STEM teachers" by 2021.¹ Halfway to that deadline, severe teaching shortages in science and mathematics persist.² In Washington State (WA), STEM teaching endorsements have remained stagnant for the last 20 years and lag behind the number of teachers leaving the field.³ The majority of new STEM teaching endorsements in WA are issued by undergraduate programs at institutions of higher education (IHE). It is thus essential for these programs to rapidly innovate to increase recruitment and improve retention of STEM teachers.

The failure of WA's STEM teacher preparation programs to increase overall output in the last 20 years may suggest that outside factors are to blame and that program changes are unlikely to make a measurable impact. Although numerous factors contribute to the STEM teacher shortage, one undergraduate STEM teacher preparation program, UTeach, has emerged as a successful model for increasing recruitment and retention of STEM teachers. Since UTeach was launched in 1997 at the University of Texas at Austin, enrollment in the UTeach-Austin program has increased from 29 to over 500 students.⁴ Over 85% of graduates entered teaching and 80% were still teaching five years after graduation. UTeach has now expanded to 44 IHE nationwide and boasts 76% 3-year retention of K-12 STEM teachers, far above the 50% average STEM teacher retention in WA.⁵ UTeach has revolutionized STEM teacher preparation.

Despite its success, UTeach or a similar model has not been adopted by any IHE in WA. One reason for this is that UTeach falls short on several WA-specific teacher certification requirements. For example, the UTeach curriculum has 300 clinical practice hours, significantly fewer than the 450 required in WA.⁵ WA has also adopted the Next Generation Science Standards (NGSS), and the UTeach curriculum lacks in their required engineering design practices. Furthermore, implementing a UTeach model, especially in a new state, requires a time-intensive overhaul of STEM teacher preparation, and start-up costs are thus prohibitory for already strapped state institutions, such as Central Washington University (CWU).

CWUTeach: An Innovative Undergraduate STEM Teacher Preparation Program to Increase the Number of STEM Teaching Graduates in Washington State

Finally, the standard UTeach program does not include support for a primary reason that interested students are unable to pursue STEM teaching – math competency. U.S. Department of Education research found that “of all pre-college curricula, the highest level of mathematics one studies in secondary school has the highest continuing influence on bachelor’s degree completion.”⁶ STEM majors at CWU (e.g., all science and math teaching, physics, engineering, computer science, etc.) require prerequisite math competency at or above precalculus. Freshman and transfer students often start college with spotty math backgrounds, and since CWU has no systematic process to address specific areas of weakness, students testing into developmental math may have to take up to 25 credits before starting STEM major courses. This results in students who have potential in STEM choosing other degrees because STEM majors would be too long and costly. A specific, more personal approach to placement and remediation is thus essential to increasing the number of STEM teaching and other STEM graduates at CWU.

We request start-up funding to implement an innovative, undergraduate STEM teacher preparation program at CWU, CWUTeach – a UTeach model modified to meet the needs of WA. We also include funding to co-develop a new Computer Science Endorsement and to assess and more efficiently remediate math competency in early career undergraduates. All proposed programs are for **full-time, first-time bachelor seeking** students. Our proposed program will be institutionalized at CWU and result in an exportable model to be disseminated statewide, potentially leading to unprecedented increases in recruitment, graduation, and retention of STEM teachers throughout Washington State.

Why Now? (2)

CWU has recently invested in the physical infrastructure necessary to support 21st century STEM education and is undergoing a massive overhaul of teacher education programs. Two College of the Sciences (COTS) programs and CESME (Center for Excellence in Science and Math Education) will be moving into a new building in fall 2016, and CWU will at the same time break ground on another new building to house the Departments of Mathematics and Computer Science. COTS also has a new Dean who has invested in STEM education programs. In the College of Education and Professional Studies (CEPS), a new Dean started in April 2015 and has begun restructuring educational programs and administration to better support middle and secondary teacher preparation programs. For example, as of April 2016, CEPS has been approved to establish a School of Education. This restructuring includes a cross-college collaborative effort to redesign teacher preparation to better meet 21st century needs, such as the NGSS and clinically based training that integrates theory and practice in a disciplinary context.

In addition, science and math teacher preparation programs have recently implemented several curricular changes and programs/partnerships that are consistent with UTeach. These include reducing the number of required credits, increasing clinical practice hours, and improving partnerships with K-12 school districts. Despite these efforts, our undergraduate STEM teacher preparation programs still face several challenges. Science and math teaching majors must take over 50 credits on top of their STEM courses, and the majority of these credits do not provide the STEM-specific educational experiences that have been shown to be critical in preparing high quality STEM teachers.¹ Many courses have prerequisites, and few students complete their degree in four years, particularly those who start a teaching program after their sophomore year or as a transfer student. Students leave teaching majors because the high education credit number prevents them from taking many STEM courses. Finally, despite high credit numbers, students in several STEM teaching programs do not get enough clinical practice hours as required by WA, and graduates receive little induction (first two years of teaching) support. A UTeach model for Washington State would address all of these issues, but its start-up costs are unaffordable without WSOS funds. For example, the licensing and support fee to start a UTeach program costs \$400,000. Student teaching and induction programs required by UTeach need the purchase and testing of new technologies for virtual collaboration. Faculty need paid time to align the UTeach program to Washington State requirements and for professional development. The current coalescing of investment in STEM infrastructure, new administration, CEPS restructuring, revival of cross-college collaboration, and WSOS dollars make this a rare opportunity for CWU to be the first WA IHE to adopt a UTeach model.

CWU Teach: An Innovative Undergraduate STEM Teacher Preparation Program to Increase the Number of STEM Teaching Graduates in Washington State

Goal, Objectives, and Outcomes (3a)

Our **goal** is to increase the number of qualified STEM teachers in Washington State in the next 5-10 years. This goal will be achieved by (a) implementing and disseminating CWU Teach – a Washington State specific UTeach model for undergraduate students seeking middle and secondary science, math, and computer science teaching endorsements, (b) co-developing a Computer Science Endorsement at CWU, and (c) reforming math competency assessment and remediation at CWU.

These changes will lead to the primary **outcomes**: double the number of *enrolled* STEM teaching students at CWU (3 yrs, funding period), double the number of STEM teaching *graduates* at CWU (5-7 yrs), and through dissemination, increase STEM teaching graduates at other WA IHEs (10+ yrs) (also see Metrics).

Additional CWU Teach outcomes for undergraduate STEM teaching majors include: decreased time to graduation (versus current programs), decreased number of quarters spent in math remediation, increased hours in clinical practice, increased scholarship support (e.g., **WSOS**), as well as, increased *diversity* of STEM teaching graduates, and retention of at least 70% of STEM teaching graduates in Washington K-12 schools for 3 years after graduation.

Timeline and Project Activities (3b-e)

In order to achieve our goal and outcomes, we will implement CWU Teach and related programs over the next three years. Below is the timeline broken down by year and quarter for CWU Teach hiring and major activities in advising-recruiting, curriculum, pilot programs, and administration, as well as major activities for the Computer Science Endorsement and math competency assessment and remediation.

		CWU Teach					Computer Science Endorsement	Math Competency
		Hiring ¹	Advise-Recruit	Curriculum	Pilot Programs	Admin		
Year 1 (2016-17)	Sum		Recruiting and marketing materials & website completed	Curriculum draft		Ongoing: fundraising / grant writing; communication with employers and biannual Advisory Board meetings; dissemination, evaluation and revision	Placement analysis	
	Fall	Advisor-Recruiter		Final curriculum submitted			Advertise CSed faculty position	Post-course placement testing
	Winter		Recruit at fairs / high schools	Schedule yr2 courses			Interview CSed	
	Spring-Sum	Program Director 1 Master Teacher 1 Adm. Asst.	Contact and register interested students	Yr2 PD Register first students			Hire CSed Plan CS endorsement curriculum	Post-course score analysis & remediation development
Year 2 (17-18)	Fall	Program Director 2 Master Teacher 2	Ongoing recruiting and advising*	First students start Course 1	Plan student teacher (ST) pilot		CSed faculty position starts Submit final CS curriculum	Pilot remediation and assess
	Winter		Advertise for internships and interns*	Course 2 Repeat courses as needed*	Recruit STs & mentors Plan induction pilot			
	Spring-Sum		First interns	Course 3 Yr3 PD	ST pilot yr1			Revise remediation
Year 3 (18-19)	Fall	Master Teacher 3		Course 4	Induction pilot (all of year 3)		First CS students start	Deliver revised remediation*
	Winter			Course 5	Recruit STs & mentors			
	Spring-Sum			Course 6 Yr4 PD	ST pilot yr2			

¹ position starts; ²PD - professional development for instructors; *this action continues from this quarter on

CWUTeach: An Innovative Undergraduate STEM Teacher Preparation Program to Increase the Number of STEM Teaching Graduates in Washington State

In order to successfully meet our proposed outcomes, CWUTeach must fulfill Washington State requirements in the context of the UTeach Elements of Success (EoS), which are: (1) Distinctive Program Identity, (2) Cross-College and School District Collaboration, (3) Long-term Institutional and Community Support, (4) Compact and Flexible Degree Plans, (5) Active Student Recruitment and Support, (6) Dedicated Master Teachers, (7) Rigorous, Research-Based Instruction, (8) Early and Intensive Field Experiences, and (9) Continuous Program Improvement.⁷

Hiring, Advising-Recruiting, and Administration. Two Program Directors, one each housed in COTS and CEPS, will be hired to oversee program administration. Their duties will include: overseeing marketing and recruiting (EoS1), maintaining collaborative relationships across colleges and with outside partners (EoS2), fundraising for the program and endowment (EoS3), overseeing curriculum and its alignment to state standards (EoS4, 7, 8), program evaluation (EoS9), dissemination, and supervising staff. One Master Teacher per year (three total) with excellent K-12 classroom teaching experience in math, science, and/or computer science will be hired to teach selected courses, lead clinical practice experiences, and develop student teaching and induction programs (EoS6). An Administrative Assistant will manage budgets and program tasks. At least one Program Director, the first Master Teacher, and the Administrative Assistant will start in spring 2017, and the second Master Teacher and Program Director will start by fall 2017.

An Advisor-Recruiter will be hired to focus on student recruiting and support (EoS5). This position will start in fall 2016 in order to immediately work with CWU Public Affairs and the UTeach Institute to draft a long-term recruiting plan, generate promotional materials, and launch the CWUTeach website by the end of 2016. For the remainder of the year, the Advisor-Recruiter will recruit the first class of CWUTeach students by visiting high schools, attending recruitment events, and contacting interested students. From then on, the Advisor-Recruiter will continue to lead recruiting efforts and act as the personal advisor to all CWUTeach students, guiding them on courses, career, and how to finance their education through scholarships, internships, and tuition reimbursement programs for teachers.

CWUTeach will also be advised by an Advisory Board consisting of CWU administration and faculty representatives, K-12 alumni teachers, K-12 district administrators, representatives from governmental and nonprofit partners, and STEM employers. The Advisory Board will meet at least biannually to view program assessment and revise the CWUTeach strategic plan as needed. Members of the Advisory Board will also be invited to sit on special committees, such as awarding student internships. The Advisory Board will ensure that CWUTeach continues to meet the long-term needs of Washington State.

Curriculum. Starting in August 2016, a Planning Team of expert CWU science, math, computer science, and education faculty and K-12 school district representatives (working teachers and administrators) will collaboratively work with CWU administration and UTeach Institute staff to modify the UTeach curriculum for WA. The Planning Team will lead the design of effective, efficient, and flexible degree plans that allow undergraduate students to complete a STEM major and teaching certification in four years, starting certification as late as their junior year (EoS 2, 4, 7, 8). The Planning Team will present a draft curriculum proposal to stakeholders by the end of October 2016, revise the proposal based on feedback, and submit the final proposal to the CWU approval process by the end of the year.

The first class of CWUTeach students will start in fall of 2017 by taking the “recruitment” courses. These large enrollment courses will meet CWU General Education requirements and allow students to “try-out” teaching in a supportive environment by teaching STEM lessons in local K-12 classrooms. STEM-interested students will be enticed to take these courses with a tuition reimbursement. Students may not choose to go into teaching if they cannot pay their student loans on a teacher’s salary, so these courses will also aid students in applying for scholarships (e.g., WSOS). One to two new CWUTeach courses and course repeats as needed will be offered each quarter over a four-year implementation period. Each winter and spring, the next year’s CWUTeach courses will be scheduled and, during the initial implementation, instructors will receive release time and professional development to prepare for these.

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The majority of CWU students work outside of school. Although formal data is spotty, we have observed STEM teaching majors working up to 30 hours/week when going to school full time at a detriment to their education. CWUTeach will alleviate some of this burden by offering **Internships** that build relevant experience. Students who have completed recruitment courses and enroll in the first major course will be invited to apply for STEM education, research, or professional internships. Internships will pay \$12/hour to the student for up to 100 hours (10hrs/week) per quarter; more hours may be approved for summer.

The Project Directors will work with CWU organizations (e.g., CESME), partner K-12 school districts, nonprofit groups, and private employers to create internships with the goal of the first ones being offered in spring 2018. Students will apply for internships and will be selected primarily based on interest (fit to the position) and aptitude. Examples of possible internships include: teaching basic computer programming at the Excel High School located on CWU's campus, co-leading the Ellensburg elementary math circle, working on the new Microsoft/CWU GAME ON! program, or research with CWU's Interstate 90 Snoqualmie Pass East wildlife crossing project. Applications for interns and internships will be recommended for funding by a committee that includes the Project Directors, the Advisor-Recruiter, and members of the Advisory Board.

Pilot Programs. UTeach provides support through student teaching and the first two years of employment (induction). Induction support has been recognized as an essential element of retaining quality STEM teachers by PCAST.¹ Because new CWUTeach students will not have begun student teaching in the next three years, the student teaching and induction programs will be piloted in granting years 2 and 3 with science and math students who graduate from our current teacher preparation programs. The Program Directors and Master Teachers will work with collaborating K-12 school districts to develop a mentorship program and pilot it with 10-15 spring 2018 student teachers and their mentors. The pilot will be assessed and a revised program will be piloted with all spring 2019 student teachers and their mentors. The Program Directors and Master Teachers will work with K-12 teacher alumni to develop an induction program in year 2 that will be piloted with 10-15 recent STEM teacher graduates over year 3. UTeach provides materials and support for student teaching and induction programs, but few current UTeach schools are rural or on a quarter system, so CWUTeach pilots will focus heavily on testing technology for virtual observation and collaboration (e.g., IRIS Connect – www.irisconnect.com). This will allow us to sustain the student teaching and induction programs after the grant has ended using minimal funds.

Dissemination. CWU Science Education currently has a National Science Foundation proposal in review that supports the NextGen-WA consortium, a statewide effort to increase recruitment and improve retention of strong and diverse STEM teachers.⁸ NextGen-WA participants are interested in UTeach; UTeach presented at a NextGen-WA conference in 2015. Despite interest, no WA IHE has implemented a UTeach model for the reasons discussed above. The successes and challenges (determined through evaluation) of CWUTeach will be repeatedly disseminated through NextGen-WA and other statewide organizations [e.g., WA STEM, South Central STEM Network, and the CWU led, Teachers Of Teachers Of Science organization (TOTOS)] to all WA IHE with STEM teaching programs. This has the potential to have an unprecedented positive impact on increasing STEM teaching graduates in Washington State.

Computer Science Endorsement. The Dean of COTS has committed to funding a computer science education faculty position (CSed in Timeline) to start in fall 2017. Preliminary curriculum for a Computer Science Endorsement program aligned to the newly approved (as of January 2016) WA competencies will be co-developed with CWUTeach prior to the new faculty member's arrival and finalized by him/her by the end of 2017. Principal staff members, Kurtz, Montgomery, and Bartel, will work with the Department of Computer Science on this effort, and members of the Advisory Board interested in Computer Science will also be invited to contribute. Students will officially start this program in fall 2018.

Math Competency. Math competency reform will further aid in graduating more STEM teachers (and other STEM students) by decreasing the barriers created by collegiate math requirements while ensuring adequate math preparation. We will approach this problem from two separate, but related, directions:

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placement and curriculum. First, the grant will fund the purchase of placement exams (e.g., ALEKS, www.aleks.com) that will be administered to all students (~2000) in 2016-2018 when they complete each of several math courses that are gateways to STEM majors, including: Intermediate Algebra, Precalculus I and II, and Calculus. We will use these data to examine the degree to which the placement cut-off scores match post-course expectations, better align course content and placement exams, and adjust prerequisite course grade and placement test scores requirements for STEM majors. Collecting and analyzing data over the three years will allow us to evaluate our initial changes and further adjust them. Completing this alignment will allow us to sustain it with a much less expensive system of spot-checking into the future.

In addition, the grant will support the creation of courses designed for self-paced math study. Many students who are placed into gateway math courses are proficient in topics included in the course, but have deficiencies that make placement into a higher course problematic. Careful study of the placement tests, as described above, may allow us to identify these students and to direct them to a new self-paced learning course. For example, a student who placed into Intermediate Algebra but has significant, but spotty, skills will use the self-study course to cover the material he is missing in both Intermediate Algebra and Precalculus I, thereby reducing his coursework by one course. For this to be successful, placement scores must be understood well enough to allow for identification of candidate students and some objective standard must be established that allows us to determine how the self-paced curriculum compares to the standard curriculum. Careful analysis of the placement exams should address both of these issues. The new curriculum will be developed primarily during summer 2017 in conjunction with the analysis of the post-course score data; continued adjustments will be made during summer 2018. Principal staff member, A. Montgomery, will lead the math competency reform.

Summary. CWUTeach will support undergraduate STEM teaching students from when they take the first recruiting course (ideally as a first year student) through their first two years of professional teaching. Over half of current STEM teaching majors meet WSOS residency and income requirements (see Metrics), so CWUTeach will greatly benefit **WSOS** and **WSOS-like** students. The focus on scholarships and financial coaching by early CWUTeach courses and the Advisor-Recruiter will also likely increase the number of CWU students receiving the WSOS. Furthermore, our proposed math competency reform will also benefit WSOS and WSOS-like students in numerous non-teaching STEM majors. Finally, CWUTeach's clinical model puts students and accompanying resources out in the schools, thus strengthening relationships with K-12 school districts and supporting effective K-12 STEM learning.

CWUTeach is ambitious but necessary to increase the number of qualified STEM teachers in WA. CWU is best positioned in the state to take on STEM education reform. We graduate more teachers than any other WA institution.⁹ Our STEM teaching programs are the largest undergraduate programs in the state and have a notably strong reputation. For example, our science educators direct TOTOS, and the 2013 National Teacher of the Year, Jeff Charbonneau, is a CWU science education graduate. If CWUTeach grows on par with the UTeach-Austin program, it would exceed our proposed outcome to double the number of STEM teaching graduates in the next 5-7 years. If CWUTeach is successful in increasing enrollment it is likely to be implemented at other Washington institutions, leading to an unprecedented increase in Washington State STEM teaching graduates 10+ years of this investment.

Budget and Justification (4)

We request an **Aug 1, 2016** start date and prefer to receive **all funds in year 1** for ease of accounting. CWU has heavy teaching loads and academic year (AY) teaching release or summer salary must be provided for faculty to design and implement new curricula. Salaries reflect true salaries where personnel have been identified (e.g., Planning Team) and average or median salaries for other positions based on the expected rank of the personnel in those positions. Student salaries reflect standard salaries for skilled undergraduate student positions. Most administrative costs, including mentor teacher and induction participant stipends, observer travel, recruiting materials/travel, and UTeach licensing reflect estimates provided by UTeach¹⁰ and pertinent departments at CWU. Travel and meeting costs are calculated based on Washington State per diem rates. Most salaries and costs include 3% yearly inflation increases.

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CWU Faculty/Staff Salary	Year 1	Year 2	Year 3	Total	Details*
Planning Team	60000	-	-	60000	1m/ea for 6 & 2wks/ea for 2-3
Program Directors	33778	67751	69784	171313	Half time AY & 1m sum for 2
Administrative Assistant	40000	41200	42436	123636	Full time all years
Advisor/Recruiter	55000	56650	58350	170000	Full time all years
Master Teachers	55556	114444	176817	346817	Full time AY & 1m sum, adding 1/yr
Observer	-	25000	51500	101500	Full time for pilots
Instructor PD	20000	20600	21218	61818	1m/ea for 3 faculty per year
Website-Marketing	20000	2000	2000	24000	4m yr1, 1-2wks yrs2-3
Computer Science	9333	9613	-	18946	1.2m split among faculty
Math Competency	8229	16951	8723	33903	1m, 2m, 1m
Subtotal	301895	354209	430827	1086931	
CWU Student Salary					
Student Worker	3600	3600	3600	10800	\$12/hr, 300hrs/yr (10hrs/wk/quarter)
Student Internships	-	7200	43200	50400	\$1200/quarter x 6 (yr2); x 36 (yr3)
Subtotal	3600	10800	46800	61200	
Fringe Benefits					
Faculty/staff	99625	116889	142173	358687	standard 33%
Undergrad Students	108	324	1404	1836	standard 3%
Subtotal	99733	117213	143577	360523	
Administration					
Advisory Board Stipends	5000	3000	3000	11000	\$500 x 10 (yr1); \$250-\$500 yrs2-3
Advisory Board Mileage	600	600	600	1800	mileage for biannual mtgs
Tuition Reimbursement	-	81576	84023	165599	\$1133, 4cr tuition for 72 students/yr
Mentor Teacher Stipends	-	2500	5000	7500	\$250/lead teacher
New CWU Teach Equipment	6000	2000	2000	10000	Kits for new courses
Recruiting Printing/Mailing	6000	4000	4000	14000	UTeach/Public Affairs estimate
Recruiting Outreach/Travel	6000	4000	4000	14000	UTeach/Admissions estimate
Student Organization	-	2000	4000	6000	Club activities & travel to conferences
Travel/Dissemination	6000	6000	6000	18000	Travel to 2-3mtgs/yr for 2-3 people
Biannual meeting sustenance	1500	1545	1591	4636	\$15 x 50 people x 2 mtgs
UTeach licensing and support	400000	-	-	400000	One time UTeach Institute fee
Computer Science Equipment	-	30000	20000	50000	Robotics kits, software, computers
Math Competency	50000	50000	25000	125000	\$25/student x 2000/yr, test ½ in yr3
Subtotal	481100	187221	159215	827536	
Student Teaching Pilot					
Mentor teacher stipend	-	7500	15000	22500	\$500/teacher for 15 and 30
Sat workshop	-	5000	12000	17000	Mileage & meals for 35 and 65
PD providers	-	1500	3000	4500	\$750/day/instructor
Observer Technology	-	40000	100000	140000	IRIS Connect, \$6000/school
Observer Travel	-	2000	4000	6000	10 trips/quarter/student teacher
Subtotal	0	56000	134000	190000	
Induction Pilot					
Participant stipend	-	-	15000	15000	\$1000 x 15 participants
Summer workshop	-	-	12000	12000	3d/2n workshop for 20
PD providers	-	-	5000	5000	\$750/day/instructor & tech
Subtotal	0	0	32000	32000	
Total direct	886328	725443	946418	2558190	*Abbreviations: m (month), AY (academic year), sum (summer), PD (professional development), mtg (meeting)
Indirect (15%)	132949	108817	141963	383729	
Total direct + indirect	1019278	834260	1088381	2941919	

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Sustainability Plan and Administrative Support (5) - *also see attached CWU letter of commitment*

CWU administration has committed to sustaining the proposed programs by indefinitely maintaining all faculty and staff salaries and associated fringe benefits. Course equipment will be maintained by CWUTeach, CESME, and the Computer Science Department, and supplemented through standard CWU procedures. Recruitment and marketing will be maintained by the program, the Office of Public Affairs, and the Office of Admissions. These sustainability efforts will maintain the core elements of CWUTeach indefinitely. One of the Project Directors' primary responsibilities will be to apply for grants and work with the CWU Foundation and University Advancement to acquire additional funding and amass an endowment for continued support of aspects of the program that are difficult to support using state funds or student tuition, including tuition reimbursements for recruiting courses, internships, and stipends. Moreover, if funded, CWU will immediately commit at least \$300K to a CWUTeach Sustainability Fund that will be used to maintain program expenses after conclusion of the WSOS grant, as needed. This amount could sustain a number of internships, stipends, and professional development for several years.

The program will also work to develop sustainable program practices that minimize long-term costs. For example, some internships may be sustained by partnerships with private employers or nonprofit groups. After the grant ends, we will have many students who have had positive experiences in the recruitment courses and can help us promote those courses even if we are unable to offer tuition waivers. Pilot programs will develop technology and practices that can be sustained for low costs (e.g., online professional development modules, math placement-course alignment, etc.). Finally, extensive program evaluation, as well as immediate involvement of and continual feedback from employers, partners, and alumni on the Advisory Board will result in clinical practice, student teaching, and induction experiences that teachers and alumni will want to participate in regardless of stipend amounts. Overall, the WSOS funds will catalyze the development of an excellent program that can be sustained long-term.

Timeline. To date, the principal staff members and others have: met with UTeach Institute representatives, scheduled travel to the UTeach 2016 conference (May 26-28) for one representative each from COTS and CEPS, recruited partner K-12 school districts for clinical practice experiences and the student teaching mentorship pilot, recruited advisory K-12 teachers and administrators, assembled the CWUTeach Planning Team, begun developing the CWUTeach curriculum, and developed a sustainability plan, including potential future funding sources. WSOS dollars will fund CWUTeach for the first three years of program implementation, during which time, the Project Directors will work to acquire additional funding, build the endowment, and develop programs that minimize costs. At the conclusion of funding, CWU will immediately sustain all salaries and begin using the Sustainability Fund as needed.

Employer Commitment (6) - *See attached letters of commitment for details*

CWUTeach is a clinically based program requiring significant and continual commitment from K-12 schools. Employers will be immediately involved in the planning process; our budget includes stipends for K-12 STEM teachers and school administrators to work with the Planning Team to develop the CWUTeach curriculum (Advisory Board stipends year 1 in Budget). After planning, at least this same number of teachers and administrators will be compensated to serve on the Advisory Board and will thus continually help direct the CWUTeach program, including: planning clinical practice, choosing interns/internships, creating professional development, and developing student teaching and induction pilot programs. Within the CWUTeach curriculum, students work with mentor teachers in K-12 classrooms beginning in the first quarter (recruitment courses) and continuing through several STEM education courses and student teaching. To date, we have discussed the proposal and obtained enthusiastic commitments from six school districts, including: all major districts within 10 miles of CWU (Ellensburg, Kittitas, and Thorp) and three districts that regularly host our student teachers and have excellent STEM education programs/STEM teachers working with different student demographics (Selah, Wahluke, and West Valley). These schools have more than enough interested and skilled teachers to mentor diverse clinical practice experiences for our CWUTeach courses and the student teaching pilot program, and demonstrate that CWUTeach will be able to obtain further employer commitments as needed. Moreover,

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CWUTeach has obtained letters of support from major Washington State STEM employers, Microsoft and The Boeing Company, as well as the M.J. Murdock Charitable Trust and the Directors of Science and Mathematics Teaching and Learning at Washington's Office of the Superintendent of Public Instruction.

Evaluation and Improvement (7)

The UTeach support fee includes extensive program evaluation. UTeach collects enrollment, graduation, and demographic data on STEM teaching students prior to, during, and after program implementation. Surveys of enrolled students are conducted annually, and alumni are surveyed after induction and periodically from then on. UTeach representatives review program curriculum and course syllabi and interview students, faculty, and administrators during a site visit conducted each year for the first 5 years of program implementation. UTeach uses these data to provide support and remediation as needed. The CWUTeach Program Directors will work with UTeach to evaluate and continually improve the program. In order to ensure that UTeach and CWUTeach outcomes are evaluated, data on middle and secondary science and math teaching programs prior to CWUTeach launch and these programs plus the new Computer Science Endorsement post- CWUTeach launch will minimally include:

- A 3yr average of student enrollment prior to launch (2013-2017) vs. post-launch (2017-2020)
- Demographics*, graduating major(s) and minor(s), teaching endorsements received, time to graduation, scholarships received, and number of math credits taken prior to starting major courses, for all students who graduated with STEM teaching majors each year in the 5 years prior to CWUTeach launch and each year post-launch
- Starting in 2017-18, all data in the bullet above for students who complete a recruitment course; these data will allow us to assess retention and its potential causal factors for recruitment courses to major courses to student teaching to graduation
- Pre and post student surveys in the recruitment courses on [pre] how they heard about the course, why they are taking the course, what they already know about being a teacher, [post] what they now know about being a teacher, what they liked and didn't like about the course, and if they are planning to pursue teaching in the future
- Portfolios assessing knowledge and skills in teaching pedagogy and STEM content relevant to their endorsement(s) for each student, including video and observations from clinical practice experiences and student teaching; portfolios will be evaluated by multiple reviewers pre student teaching, after student teaching, and after induction
- Post induction surveys on alumni's current positions and reasons for leaving the teaching profession if they did so
- Ongoing numbers of science, math, and computer science teachers graduating from CWU, statewide, and future WA IHE that adopt aspects of the CWUTeach model; these are publically available in WA Professional Educator Standards Board Annual Report (<http://data.pesb.wa.gov/>)

*It is important for students to have teachers with which they identify. Our evaluation of diversity will thus be broad and demographics will include: self-identified gender, racial and ethnic background, high school of graduation (allows us to include geographic origin and 9-12 education-related variables, such as the school's ethnic and economic makeup), WA residency, and family income.

Challenges (8)

I. Recruiting. Recruiting significantly more students into STEM teaching is a formidable challenge. CWUTeach will use a multifaceted approach to address this challenge that has been demonstrated to be effective by UTeach. This approach includes: a heavy focus on recruiting through marketing, dedicated program outreach by a knowledgeable and passionate Advisor-Recruiter, and recruiting courses with tuition waivers; strong student support through personal advising, scholarship assistance, internships, and a student club; and a flexible, desirable program. CWUTeach will be more desirable to STEM students than our current programs, because they will receive both a STEM degree and teaching certification, leaving

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them the option of pursuing teaching or another STEM career after graduation. This flexibility will appeal to undergraduates who often do not decide what they want to do until late in their college career.

II. Cross-college collaboration. Successful long-term cross-college collaboration between COTS and CEPS could be challenged by future changes in administration or faculty. CWUTeach addresses this challenge by sharing program administration equally between COTS and CEPS Program Directors. Ongoing evaluation and Advisory Board meetings will also help maintain CWUTeach priorities.

III. Long-term sustainability. Long-term sustainability of CWUTeach requires a deep commitment from CWU and (at least some) continual funding. CWU's commitment to funding staff salaries and a Sustainability Fund demonstrates that CWUTeach is a University priority. If funded, we will also work to establish a \$2M endowment for this program, which would indefinitely cover program expenses.

Graduation Rates and Job Placement (9)

Job placement rates for our graduates are very high. Of our 2014-2015 math and science teaching major graduates, 90% are working as science or math teachers, 5% are substitute teachers, and 5% are enrolled in Masters programs. The graduation rate for STEM teaching-interested students (who may not have declared a major) and STEM-teaching majors and minors averaged over 2008-2010 is 62.5%; average time to graduation for the same group was 11 quarters (3-4 years). Our graduation rate is higher than the CWU average of 50% but still too low. Time to graduation is too slow (as discussed above) since several of these students are transfers. CWUTeach's focus on personal student support will better serve students at risk for drop out and improve graduation rates and time to graduation.

Principal Staff Members, all CWU

Jennifer Dechaine, Associate Professor of Biology and Science Education, has worked in science education for six years (at CWU) and leads the NextGen-WA project described above for CWU. **Martha Kurtz**, Associate Dean of COTS, served as chair of Science Education programs for twelve years and director of CESME for seven years. She has a long history of WA science education leadership and leads TOTOS. **Ian Loverro**, Chair of the Department of Educational Foundations and Curriculum and Interim Director of Field Experiences, has a Doctorate in Educational Technology, was a former science teacher, and has worked in education for over seventeen years. **Mark Oursland**, Director of Math Education, has worked in math education for over twenty years and leads its reform in WA and at CWU. **Aaron Montgomery**, Chair of Computer Science and Professor of Mathematics, served on the WA committee that created the 2016 Computer Science Endorsement criteria and has significant past experience in math competency reform. **Bruce Palmquist**, Chair of the Departments of Science Education and Physics, a former secondary science teacher, has worked in science education at CWU for over twenty years and leads the Physics/Math Teaching Dual Degree Program at CWU. **Kimberlee Bartel**, Associate Professor of Business and Marketing Education, has a Ph.D. in Information Technologies and directs CWU Career and Technical Education (CTE) programs. **Ethan Bergman**, Associate Dean of CEPS, is a former secondary science, math, and computer science teacher and oversees educational reform at CWU.

References

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⁸ Collaborative Research: The Next Generation of STEM Teacher Preparation in Washington State. Proposal 1625176, C. WA U., Dechaine. In Review.

⁹ PESB Annual Report; <http://data.pesb.wa.gov/production>

¹⁰ UTeach Institute, 2015; <https://institute.uteach.utexas.edu/sites/institute.uteach.utexas.edu/files/uteach-operations-ch02-budgeting-2015.pdf>

April 10, 2016

Dear Ms. Santa Lucia,

We are very excited about and completely committed to Central Washington University's (CWU) proposal to the Washington State Opportunity Scholarship Opportunity Expansion Fund to re-envision the science and mathematics teacher preparation program and to add a Computer Science Endorsement program at CWU. We are keenly aware of the need for more, better prepared STEM teachers and look forward to implementing and sustaining a nationally recognized program like UTeach. CWUTeach will adapt the UTeach model to meet Washington State endorsement standards and serve as a model for other universities and colleges in Washington State. We are also very interested in the research results from this project that will help us better support students in mathematical placement and remediation to reduce their time to graduation and increase the number of future STEM teachers and STEM graduates overall.

Teacher preparation is one of the premier programs at CWU and one of the largest. Our administration, faculty and staff are dedicated to providing cutting edge programs for the preparation of 21st Century K-12 educators. A recent decision to create a School of Education at CWU will provide the enhanced infrastructure necessary to support the interdisciplinary nature of the CWUTeach program.

We are firmly committed to the sustainability of CWUTeach at the end of the funding period. If we are awarded funding for CWUTeach from the WSOS Opportunity Expansion fund, we (University Advancement and CWU administrators) commit to pursuing fundraising efforts for at least a \$2M endowment that would provide ongoing program support. The University will set aside at least \$300K for a CWUTeach Sustainability Fund that will be used to maintain program expenses after conclusion of the WSOS grant. We have already committed to hiring a computer science education faculty member to begin in fall of 2017. We commit to continuing the Director, Master Teacher, Administrative Assistant, and Advisor-Recruiter positions following the end of the grant cycle. We recognize the importance of marketing, publicity, and recruiting and have dedicated staff ready to support these aspects of the initiative.

The principal faculty on this proposal are leaders across the state and in the nation in science and mathematics education. We fully support them in the design and implementation of CWUTeach.

Sincerely,



Dr. James Gaudino
President



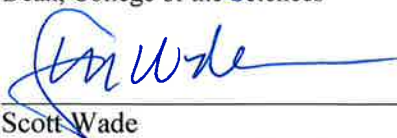
Dr. Stephen Hulbert
Provost/Vice President, Academic and Student Life



Dr. Timothy England
Dean, College of the Sciences



Dr. Paul Ballard
Dean, College of Education and Professional Studies



Scott Wade
Vice President, University Advancement



Martha J. Kurtz
Director, Center for Excellence in Science and Math Education

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April 11, 2016

Dr. Jennifer Dechaine
Department of Science Education
Central Washington University

Dear Dr. Dechaine,

The Ellensburg School District is excited to partner with Central Washington University's proposed CWU Teach program on providing innovative K-12 STEM clinical practice and student teaching experiences for CWU Teach students.

The Ellensburg School District serves approximately 3,200 K-12 students and employees around 200 certificated teachers. Our students have benefitted from the partnerships that have been developed with CWU science, math and education departments and we hope to deepen that partnership if the CWU Teach proposal is accepted.

We support the goals of CWU Teach to provide efficient, flexible, and effective degree plans that allow undergraduate students to complete a STEM major and science, math, and/or computer science teaching certification in four years. We recognize the importance of integrating content and pedagogy with clinical practice in K-12 STEM classrooms. Moreover, we appreciate the great value in continuous mentoring of CWU Teach students through student teaching by skilled mentor teachers who are actively working in the field.

We understand and are committed to:

- a.) Providing and professionally supporting mentor teachers who will collaboratively work with CWU Teach instructors to mentor CWU Teach students and student teachers in planning, teaching and evaluating STEM lessons to K-12 students in the mentor teachers' classrooms
- b.) Mentor/student teacher teams attending CWU Teach professional development
- c.) Serving on the CWU Teach Advisory Board

In return, CWU Teach is committed to:

- a.) Collaboratively working with mentor teachers and district representatives to design and deliver clinical practice experiences, student teacher mentorship, and professional development that benefits all parties
- b.) Supporting mentor teachers with monetary stipends and funded professional development
- c.) Providing equipment to support CWU Teach courses and associated mentor teacher classrooms
- d.) Compensating teachers and administrators who serve on the CWU Teach Advisory Board

The Ellensburg School District believes that partnerships with CWU are valuable and we support them whenever reasonably possible. I believe the proposed partnership with CWU Teach will result in better prepared STEM teachers, a stronger relationship between CWU and our schools and excellent STEM experiences for our K-12 students. Because of this, we are excited and look forward to partnering with CWU Teach.

Sincerely,

Michael Nollan
Assistant Superintendent
Ellensburg School District



SCHOOL DISTRICT
Cultivating life-long learners

316 West Naches Avenue • Selah, Washington 98942-1328
509.698.8000 • Fax: 509.698.8099

March 18, 2016

Dr. Jennifer Dechaine
Department of Science Education
Central Washington University

Dear Dr. Dechaine,

Selah School District is excited to partner with Central Washington University's proposed CWU Teach program on providing innovative K-12 STEM clinical practice experiences for CWU Teach students.

We have dedicated staff in our district assigned to support professional development for math and sciences. They are enthusiastic about the program and would be great liaisons for helping make it a success in our district. In addition, we continue to struggle with finding highly qualified STEM based educators because of the high demand and hope that this partnership helps alleviate that issue.

We support the goals of CWU Teach to provide efficient, flexible, and effective degree plans that allow undergraduate students to complete a STEM major and science, math, and/or computer science teaching certification in four years. We recognize the importance of integrating content and pedagogy with clinical practice in K-12 STEM classrooms. Moreover, we appreciate the great value in early and continuous mentoring of CWU Teach students by skilled mentor teachers who are actively working in the field.

We understand and are committed to:

- a) Providing and professionally supporting mentor teachers who will collaboratively work with CWU Teach instructors to mentor CWU Teach students in planning, teaching, and evaluating inquiry-based STEM lessons to K-12 students in the mentor teachers' classrooms
- b) Mentor teachers attending CWU Teach professional development
- c) Providing classroom-based internship experiences for CWU students training to be teachers

In return, CWU Teach is committed to:

- a) Collaboratively working with mentor teachers and district representatives to design and deliver clinical practice experiences and professional development that benefits all parties
- b) Supporting mentor teachers with monetary stipends and funded professional development
- c) Paying CWU student interns to work with teachers
- d) Providing equipment to support CWU Teach courses and associated mentor teacher classrooms

We believe that a partnership with CWU Teach as proposed will result in more, better-prepared STEM teachers, a stronger relationship between CWU and our schools, and excellent STEM experiences for our K-12 students and; therefore, we are excited to partner with CWU Teach.

Sincerely,

Shane Backlund, Superintendent



THORP SCHOOL DISTRICT NO. 400

Post Office Box 150 · 10831 N. Thorp Highway · Thorp, Washington 98946
Phone 509-964-2107 Fax 509-964-2313
www.thorpschools.org

April 6, 2016

Dr. Jennifer Dechaine
Department of Science Education
Central Washington University

Dear Dr. Dechaine,

Our district is excited to partner with Central Washington University's proposed CWU Teach program on providing innovative K-12 STEM clinical practice experiences for CWU Teach students.

As a small and rural school district, we rely on such partnerships to help us ensure that our students are afforded the very best education possible. We are often looking for ways to enhance our students' education, whether it is with after school programs, special STEAM events facilitated by the Center for Excellence in Science and Mathematics Education (CESME) at Central Washington University, or by providing a K-12 robotics program for all of our students. We also realize the primary importance of recruiting and developing our brightest college students to become educators, particularly in the fields of mathematics and science. This grant proposal appears to address these needs and more.

We support the goals of CWU Teach to provide efficient, flexible, and effective degree plans that allow undergraduate students to complete a STEM major and science, math, and/or computer science teaching certification in four years. We recognize the importance of integrating content and pedagogy with clinical practice in K-12 STEM classrooms. Moreover, we appreciate the great value in early and continuous mentoring of CWU Teach students by skilled mentor teachers who are actively working in the field.

We understand and are committed to:

- a) Providing and professionally supporting mentor teachers who will collaboratively work with CWU Teach instructors to mentor CWU Teach students in planning, teaching, and evaluating inquiry-based STEM lessons to K-12 students in the mentor teachers' classrooms
- b) Mentor teachers attending CWU Teach professional development
- c) Providing classroom-based internship experiences for CWU students training to be teachers

In return, CWU Teach is committed to:

- a) Collaboratively working with mentor teachers and district representatives to design and deliver clinical practice experiences and professional development that benefits all parties
- b) Supporting mentor teachers with monetary stipends and funded professional development
- c) Paying CWU student interns to work with teachers
- d) Providing equipment to support CWU Teach courses and associated mentor teacher classrooms

We are excited about the possibilities that this partnership will present for our students and staff members. Thank you for taking the initiative to envision such a forward-thinking and research-based program.

Sincerely,

A handwritten signature in blue ink that reads "Linda Martin". The signature is written in a cursive, flowing style.

Linda Martin, Ed. D.
Superintendent/Principal



Kittitas Public Schools

MIKE MESSENGER, Superintendent

Directors:
Patricia Clerf
Brian Stickney
Jeff Wallace
Paul Johnson
Mike Lowe

March 17, 2016

Dr. Jennifer Dechaine
Department of Science Education
Central Washington University

Dear Dr. Dechaine,

Kittitas School District is excited to partner with Central Washington University's proposed CWU Teach program on providing innovative K-12 STEM clinical practice experiences for CWU Teach students.

We support the goals of CWU Teach to provide efficient, flexible, and effective degree plans that allow undergraduate students to complete a STEM major and science, math, and/or computer science teaching certification in four years. We recognize the importance of integrating content and pedagogy with clinical practice in K-12 STEM classrooms. Moreover, we appreciate the great value in early and continuous mentoring of CWU Teach students by skilled mentor teachers who are actively working in the field.

We understand and are committed to:

- a) Providing and professionally supporting mentor teachers who will collaboratively work with CWU Teach instructors to mentor CWU Teach students in planning, teaching, and evaluating inquiry-based STEM lessons to K-12 students in the mentor teachers' classrooms
- b) Mentor teachers attending CWU Teach professional development
- c) Providing classroom-based internship experiences for CWU students training to be teachers

In return, CWU Teach is committed to:

- a) Collaboratively working with mentor teachers and district representatives to design and deliver clinical practice experiences and professional development that benefits all parties
- b) Supporting mentor teachers with monetary stipends and funded professional development
- c) Paying CWU student interns to work with teachers
- d) Providing equipment to support CWU Teach courses and associated mentor teacher classrooms

We believe that a partnership with CWU Teach as proposed will result in more, better-prepared STEM teachers, a stronger relationship between CWU and our schools, and excellent STEM experiences for our K-12 students and; therefore, we are excited to partner with CWU Teach.

Sincerely,

Mike Messenger, Superintendent
Kittitas School District

P.O Box 599 - Kittitas Washington 98934 - (509) 968-3115 - (509) 968-4730 (Fax)

Wahluke Junior High

502 N Boundary Ave
Mattawa, WA 99349
(509) 932-4455

***Home of the Warriors***

April 15, 2016

Dr. Jennifer Dechaine
Department of Science Education
Central Washington University

Dear Dr. Dechaine,

Wahluke Junior High excited to partner with Central Washington University's proposed CWUteach program on providing innovative K-12 STEM clinical practice and student teaching experiences for CWUteach students.

Some quick demographic information on Wahluke Junior High is we are located along the Columbia River in Mattawa, Washington. We are made-up of nearly 500 students, 97% Hispanic, 100% free or reduced lunch and 31% migrant students.

We support the goals of CWUteach to provide efficient, flexible, and effective degree plans that allow undergraduate students to complete a STEM major and science, math, and/or computer science teaching certification in four years. We recognize the importance of integrating content and pedagogy with clinical practice in K-12 STEM classrooms. Moreover, we appreciate the great value in continuous mentoring of CWUteach students through student teaching by skilled mentor teachers who are actively working in the field.

We understand and are committed to:

- a) Providing and professionally supporting mentor teachers who will collaboratively work with CWUteach instructors to mentor CWUteach students and student teachers in planning, teaching, and evaluating STEM lessons to K-12 students in the mentor teachers' classrooms
- b) Mentor/student teacher teams attending CWUteach professional development
- c) Serving on the CWUteach Advisory Board

In return, CWUteach is committed to:

- a) Collaboratively working with mentor teachers and district representatives to design and deliver clinical practice experiences, student teacher mentorship, and professional development that benefits all parties
- b) Supporting mentor teachers with monetary stipends and funded professional development
- c) Providing equipment to support CWUteach courses and associated mentor teacher classrooms
- d) Compensating teachers and administrators who serve on the CWUteach Advisory Board

We believe that a partnership with CWUteach as proposed will result in more, better-prepared STEM teachers, a stronger relationship between CWU and our schools, and excellent STEM experiences for our K-12 students, and we are thus excited to partner with CWUteach.

Sincerely,

Andrew Harlow
Wahluke Junior High Principal
W: (509) 932-4455
M: (509) 831-4037



April 4, 2016

Dr. Jennifer Dechaine
Department of Science Education
Central Washington University

Dear Dr. Dechaine,

West Valley School District is excited to partner with Central Washington University's proposed CWUteach program on providing innovative K-12 STEM clinical practice and student teaching experiences for CWUteach students.

West Valley has the honor of being a Washington STEM Lighthouse School with all Science programs taught through CTE/STEM. West Valley has the honor of teacher leaders serving as 2016-2019 National Science Teachers Association District XVII, 2015 Washington State Science and Engineering Fair Teacher of the Year, and 2014 Washington E3 Middle Level Environmental Educator of the Year.

Additionally, we prioritize our partnerships with education and industry to utilize STEM education to prepare students for the most in demand careers. West Valley Junior High was selected as the Microsoft Model School with one of three teachers selected state wide for MS Office Certification and one of five teachers selected nationally for MS Computer Coding and App Development. We were also selected as a Boeing Partner School with our pre-engineering programs at the Junior High leading to our manufacturing program at the High School.

We support the goals of CWUteach to provide efficient, flexible, and effective degree plans that allow undergraduate students to complete a STEM major and science, math, and/or computer science teaching certification in four years. We recognize the importance of integrating content and pedagogy with clinical practice in K-12 STEM classrooms. Moreover, we appreciate the great value in continuous mentoring of CWUteach students through student teaching by skilled mentor teachers who are actively working in the field.

We understand and are committed to:

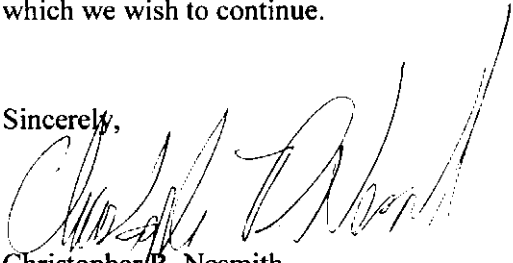
- a) Providing and professionally supporting mentor teachers who will collaboratively work with CWUteach instructors to mentor CWUteach students and student teachers in planning, teaching, and evaluating STEM lessons to K-12 students in the mentor teachers' classrooms
- b) Mentor/student teacher teams attending CWUteach professional development
- c) Serving on the CWUteach Advisory Board

In return, CWU Teach is committed to:

- a) Collaboratively working with mentor teachers and district representatives to design and deliver clinical practice experiences, student teacher mentorship, and professional development that benefits all parties
- b) Supporting mentor teachers with monetary stipends and funded professional development
- c) Providing equipment to support CWU Teach courses and associated mentor teacher classrooms
- d) Compensating teachers and administrators who serve on the CWU Teach Advisory Board

With current industry needs driving STEM program decisions at West Valley, we feel that a partnership with CWUT will better help align our need in educators so that our students meet the needs of their future employers. West Valley School District and CWUT have had a long standing partnership with STEM which we wish to continue.

Sincerely,



Christopher R. Nesmith
CTE Director



Jim Ockerman
Vice President
Manufacturing | Safety
Fabrication
Commercial Airplanes

The Boeing Company
P.O. Box 3707 MC 5E-51
Everett, WA 98124-2207

April 7, 2016

James Gaudino, President
Central Washington University
400 East University Way
Ellensburg, WA 98926

Dear Jim:

As a Vice President of The Boeing Company and the executive focal responsible for the company's partnership with CWU, I enthusiastically support your application to the Washington State Opportunity Scholarship (WSOS) Opportunity Expansion Fund (OEF). Your proposed project, "CWU Teach: An Innovative Undergraduate STEM Teacher Preparation Program to Increase the Number of STEM Teaching Graduates in Washington State," addresses a major challenge to the future of the technology and science industries in our state.

In order to create a more robust pipeline of highly-skilled workers, we need more STEM teachers in the K-12 system who can inspire their students to study and pursue STEM careers. Your proposal will go a long way towards addressing the K-12 STEM teacher shortage by more than doubling the number of STEM teachers graduating from CWU within the next five years.

As the state's largest employer, Boeing has a vested interest in STEM education. Through our support of the WSOS program, we are collaborating with other major employers and the State of Washington to provide scholarships to low- to moderate-income STEM students attending universities in Washington, including CWU. Boeing has also directly invested in STEM education at CWU for many years through our annual support of scholarships in engineering, computer science, aviation, and information technology.

As The Boeing Company continues to invest in STEM education in Washington State, we look forward to collaborating with CWU as you move forward on this innovative effort to increase the number of STEM teachers.

Sincerely,



James P. Ockerman



April 13, 2016

James Gaudino, President
Central Washington University
400 East University Way
Ellensburg, WA 98926

Dear Dr. Gaudino:

I am writing in support of Central Washington University's application to the Washington State Opportunity Scholarship (WSOS) Opportunity Expansion Fund (OEF). Your proposed project, "CWU Teach: An Innovative Undergraduate STEM Teacher Preparation Program to Increase the Number of STEM Teaching Graduates in Washington State," addresses a major challenge to the future of the technology and science industries in our state.

In order to create a more robust pipeline of highly-skilled workers, we need more STEM teachers in the K-12 system who can inspire their students to study and pursue STEM careers. Your proposal will go a long way towards addressing the K-12 STEM teacher shortage in Washington State by more than doubling the number of certified STEM teachers graduating from Central Washington University (CWU) within the next five years.

As you know, Microsoft Corporation (Microsoft) has and will continue to invest in building the capacity for STEM education in Washington State. Through our support of the WSOS program, we are collaborating with other major employers and the State of Washington to provide scholarships to low-to moderate-income STEM students attending universities in Washington, including CWU. Microsoft also provided major funding for this one-time OEF grant program.

We are particularly excited that you have included the co-development of a new computer science teaching endorsement as part of the CWU Teach proposal. Since 2011, Microsoft has been actively engaged in promoting computer science education in K-12 schools throughout the United States. The Microsoft Technology Education and Literacy in Schools (TEALS) initiative is helping to build sustainable computer science programs in high schools by pairing trained computer science professionals with classroom teachers to team-teach computer science.

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399

Tel 425 882 8080
Fax 425 936 7329
<http://www.microsoft.com/>



We look forward to exploring potential collaborations between CWU and Microsoft as you move forward on this innovative effort to increase the number of STEM teachers in Washington State.

Sincerely,

A handwritten signature in blue ink, appearing to read "Orlando Ayala".

Orlando Ayala
Chairman & Corporate Vice President
Emerging Businesses



M.J. Murdock
Charitable Trust

Mailing Address
Post Office Box 1618
Vancouver, WA 98668

M.J. Murdock Executive Plaza
703 Broadway, Suite 710
Vancouver, Washington 98660
Phone: 360.694.8415
Facsimile: 360.694.1819
www.murdock-trust.org

April 13, 2016

James Gaudino, President
Central Washington University
Ellensburg, WA 98926

Dear Jim:

As Program Director for Research and Science at the M. J. Murdock Charitable Trust (MCT), I enthusiastically support CWU's application to the Washington State Opportunity Scholarship (WSOS) Opportunity Expansion Fund (OEF). Your proposed project, "CWUTeach: An Innovative Undergraduate STEM Teacher Preparation Program to Increase the Number of STEM Teaching Graduates in Washington State," addresses a major challenge to the future of STEM education in our state. This challenge compounds the serious need for STEM college graduates to fill the otherwise projected unfilled 50,000 jobs in 2017 that require STEM skills.

Simply put, we need more highly-qualified STEM teachers in the K-12 system who can inspire their students to study and pursue STEM careers, and your proposal to more than double the number of STEM teachers graduating from CWU within five years will have substantial impact in meeting this crucial need.

MCT considers CWU a long-term partner in undergraduate science education and our investments in CWU over the past twenty years have been focused on enhancing the undergraduate learning experience. Recent grants from MCT to CWU include funds to purchase major research technologies including a flow cytometer and a scanning electron microscope.

One of the reasons MCT supports the purchase of state-of-the-art research technologies at universities such as CWU is to provide future K-12 science teachers with opportunities to conduct hands-on research as part of their undergraduate experience. We believe that K-12 STEM teachers who have experienced the thrill of discovery-based teaching and learning as undergraduates will be better prepared to inspire their students to pursue careers in STEM fields. In the same vein, in addition to supporting pre-service STEM teacher education, the Murdock Trust also values CWU's partnership in our Partners in Science program, whereby in-service high school science teachers are given the opportunity to conduct research with your faculty. The impact on the teachers has been enormous and that has translated into more effective and inspirational teaching in their classrooms.

MCT looks forward to continuing its partnership with CWU in the years ahead as we work together to expand and enhance undergraduate research opportunities in the STEM fields.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Moses Lee'.

Moses Lee, Ph.D.

Program Director, Research and Science



SUPERINTENDENT OF PUBLIC INSTRUCTION

Randy I. Dorn Old Capitol Building · PO BOX 47200 · Olympia, WA 98504-7200 · <http://www.k12.wa.us>

April 6, 2016

Dr. Jennifer Dechaine
Department of Science Education
Central Washington University

Dear Dr. Dechaine,

As the of Directors of Science and Mathematics in Teaching and Learning at Washington's Office of the Superintendent of Public Instruction (OSPI), we are in full support of Central Washington University's proposal to implement the UTeach program modified to meet state of Washington competencies for science, mathematics and computer science teachers. The demonstrated success of the UTeach model in attracting and retaining STEM teachers is impressive and we are excited to support CWU in adapting this model. CWUTeach will go a long way to mitigating the large STEM teacher shortage Washington State faces.

OSPI strongly supports teacher preparation with increased clinical practice and CWUTeach will serve as a model for other institutions of higher education in the state to include more clinical experience with trained mentors from both university faculty and outstanding science and mathematics K-12 teachers. We also feel strongly that the induction component of the CWUTeach program is critical to retaining STEM teachers early in their career.

The addition of a computer science teacher preparation pathway to meet the new competencies is an essential piece in the process of preparing a STEM literate citizenry and increasing the STEM pipeline especially for the high tech industries in our state. We are also very supportive of your initiative to streamline mathematics remediation for students which we know will support future STEM teachers as well as students preparing for other STEM careers.

Ultimately, CWUTeach has the potential to reform how teachers are prepared in our state to better serve our P-12 students. We look forward to working with you to implement CWUTeach.

Sincerely,

Anne Gallagher
Mathematics Director

Ellen K. Ebert, PhD
Science Director

CWU Teach: An Innovative Undergraduate STEM Teacher Preparation Program to Increase the
Number of STEM Teaching Graduates in Washington State

11. Metrics

Student Categories		2014-2015 Students ^a			NET Students Achieving Degrees with this Investment ^e		
		Computer Science ^b	Teaching STEM (K-12) ^c	Total	Computer Science ^f	Teaching STEM (K-12)	Total
1	Students achieving degrees in computer science, engineering, or teaching of STEM (K-12)	29	29	58	5	40	45
2	Students who earned associates degrees in WA state and transfer into computer science, engineering, or teaching of STEM (K-12) - <i>enrolled students</i>	21	44	65	N/A	N/A	N/A
3	Students who earned associates in WA state and transfer into computer science, engineering or teaching of STEM (K-12) and complete 4 year degrees	9	12	21	2	20	22
4	WSOS students achieving degrees in computer science, engineering, or teaching of STEM (K-12)	4	1	5	2	20 ^g	22
5	WSOS-like students achieving degrees in computer science, engineering, or teaching of STEM (K-12) ^d	12	22	34	3	30	33

^aNumber of **graduates** (not current enrollment, for all student categories except #2) for 2014-2015 for majors (excludes minors) in each program

^bDepartment of Computer Science majors. Although our proposal is about Teaching STEM, we have included this category because the new Computer Science Endorsement should also recruit more Computer Science Majors (also see f).

^cMajors in secondary Mathematics Teaching, middle-level Mathematics Teaching, middle-level Mathematics and Science Teaching, secondary Biology Teaching, secondary Chemistry Teaching, secondary Earth Science Teaching, and secondary General Science Teaching. Students also obtain middle and secondary teaching endorsements through minors, which are not included.

^dStudents in these majors with WSOS eligible income and GPA at graduation.

^eEstimates that current Teaching STEM major graduates would double and at least 10 new Computer Science teaching graduates would be added within **5-7 years** of receiving funding (this is realistic based on conservative UTeach-Austin growth; the first new students will not graduate until 2021). All STEM major graduates would also be likely to increase in the same time period due to math competency reform efforts.

^fMany students who pursue the Computer Science Endorsement will already be Department of Computer Science majors but we estimate that some students will be drawn to the major because they want to teach computer science.

^gEstimates that our emphasis on scholarships in early courses will greatly increase the overall percentage of eligible students receiving the WSOS, assuming that most eligible students who apply will receive the scholarship.

CWU Teach: An Innovative Undergraduate STEM Teacher Preparation Program to Increase the
Number of STEM Teaching Graduates in Washington State

11. Metrics
#

Student Categories		2014-2015 Students ^a			NET Students Achieving Degrees with this Investment ^e		
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1	Students achieving degrees in computer science, engineering, or teaching of STEM (K-12)	29	29	58	5	40	45
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^cMajors in secondary Mathematics Teaching, middle-level Mathematics Teaching, middle-level Mathematics and Science Teaching, secondary Biology Teaching, secondary Chemistry Teaching, secondary Earth Science Teaching, and secondary General Science Teaching. Students also obtain middle and secondary teaching endorsements through minors, which are not included.

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^gEstimates that our emphasis on scholarships in early courses will greatly increase the overall percentage of eligible students receiving the WSOS, assuming that most eligible students who apply will receive the scholarship.

CWUTeach Proposal - Revised Budget and Justification

Budget and Justification

We request an **Aug 1, 2016** start date and prefer to receive **all funds in year 1** for ease of accounting. CWU has heavy teaching loads and thus academic year (AY) teaching release or summer salary must be provided for faculty to design and implement new curricula. Salaries reflect true salaries where personnel have been identified (e.g., Planning Team) and average or median salaries for other positions based on the expected rank of the personnel in those positions. Student salaries reflect standard salaries for skilled undergraduate student positions. Most administrative costs, including mentor teacher and induction participant stipends, observer travel, recruiting materials/travel, and UTeach licensing reflect estimates provided by UTeach¹⁰ and pertinent departments at CWU. Travel and meeting costs are calculated based on Washington State per diem rates. Most salaries and costs include 3% yearly inflation increases.

Budget Revisions

We are ecstatic to report that CWU has committed to match key areas of the WSOS budget so that the proposed CWUTeach outcomes can still be met within the revised budget. Specifically, CWU has agreed to provide a 50% budget match for the COTS Program Director, Administrative Assistant, and Observer positions in all years, thus greatly reducing salary requests in these areas. We were also able to eliminate the CEPS Program Director salary, because we negotiated that this position will become part of the responsibilities of an existing full time twelve-month administrative position. Within salaries, we have also cut from three Master Teachers to two (the minimum required by UTeach for the proposed number of students¹⁰), reduced Observer hours, and slightly reduced the marketing and computer science planning team salaries. These reductions are expected to have only minor effects on CWUTeach development and implementation. Finally in salaries, we have made a small cut of 12 to 8 student internships in year 3; our intent will be to help students find additional paid external internships.

We have also made a large reduction in the student tuition reimbursement for the recruitment courses from full tuition to an \$800 tuition waiver per student. The \$800 tuition waiver will be standard practice for CWU COTS programs in 2016-2017 and will likely be enough incentive for curious students to take our proposed recruitment courses (which also meet General Education requirements). The other area of significant reduction was in technology, including CWUTeach equipment, computer science equipment, and observer technology. CWU recently announced an increase in technology support, which will be able to cover some equipment and technology for the new CWUTeach program. Some technology may also be funded with the new Samuelson STEM building project for Computer Science and Mathematics. Less expensive technology than originally proposed will also be chosen when possible. Finally, we reduced the math competency testing budget from \$25 to \$20 per student, which will still be enough to cover the costs of testing most students to achieve an adequate sample size.

Metrics Additional Information

The first students who begin CWUTeach as freshman in fall 2017 would graduate in spring 2021; thus, no new CWUTeach students will have graduated by the end of the three-year granting period. The Metrics table asks for graduates, so the projected “NET Students Achieving Degrees with this Investment” refers to **5-7** years from now (see footnote on Metrics table). Our primary outcomes remain unchanged from the initial full proposal and are: double the number of *enrolled* STEM teaching students at CWU (3 yrs, funding period), double the number of STEM teaching *graduates* at CWU (5-7 yrs), and through dissemination, increase STEM teaching graduates at other WA IHEs (10+ yrs).

CWU Faculty/Staff Salary	Year 1	Year 2	Year 3	Total	Details*
Planning Team	60000	-	-	54500	6 x 1m & collaboration stipends
Program Directors	18378	18929	19497	56805	½ time/50% match AY COTS & 1m sum for
Administrative Assistant	10000	20600	21218	51818	½ time yr1, full yrs2-3 – 50% match
Advisor/Recruiter	55000	56650	58350	170000	Full time all years
Master Teachers	55556	114444	117878	287878	Full time AY & 1m sum, adding 1 yr2
Observer	-	12500	25750	38250	½ time yr 2, full yr2 – 50% match
Instructor PD	20000	20600	21218	61818	1m/ea for 3 faculty per year
Website-Marketing	16000	2000	2000	24000	4m yr1, 1-2wks yrs2-3
Computer Science	6222	6409	-	12631	1m split among faculty
Math Competency	8229	16951	8723	33903	1m, 2m, 1m
Subtotal	249384	269083	274633	793101	
CWU Student Salary					
Student Worker	3600	3600	3600	10800	\$12/hr, 300hrs/yr (10hrs/wk/quarter)
Student Internships	-	7200	28800	36000	\$1200/quarter x 6 (yr2); x 24 (yr3)
Subtotal	3600	10800	32400	46800	
Fringe Benefits					
Faculty/staff	82297	88797	90629	261723	standard 33%
Undergrad Students	108	324	972	1404	standard 3%
Subtotal	82405	89121	91601	263127	
Administration					
Advisory Board Stipends	5000	3000	3000	11000	\$500 x 10 (yr1); \$250-\$500 yrs2-3
Advisory Board Mileage	600	600	600	1800	mileage for biannual mtgs
Student Tuition Reimburse	-	57600	57600	115200	\$800, tuition waiver for 72 students/yr
Mentor Teacher Stipends	-	2500	5000	7500	\$250/lead teacher
New CWU Teach Equipment	2000	500	500	3000	Kits for new courses
Recruiting Printing/Mailing	6000	4000	4000	14000	UTeach/Public Affairs estimate
Recruiting Outreach/Travel	6000	4000	4000	14000	UTeach/Admissions estimate
Student Organization	-	2000	4000	6000	Club activities & travel to conferences
Travel/Dissemination	6000	6000	6000	18000	Travel to 2-3mtgs/yr for 2-3 people
Meeting sustenance	2500	1550	1597	5647	\$15 x 50pp x 2 & collaboration mtgs yr1
UTeach licensing and support	400000	-	-	400000	One time UTeach Institute fee
Computer Science Equipment	-	-	20000	20000	Robotics kits, software
Math Competency	36000	36000	18000	90000	\$20/student x 1800/yr, test ½ in yr3
Subtotal	464100	117750	124297	706147	
Student Teaching Pilot					
Mentor teacher stipend	-	7500	15000	22500	\$500/teacher for 15 and 30
Sat workshop	-	5000	12000	17000	Mileage & meals for 35 and 65
PD providers	-	1500	3000	4500	\$750/day/instructor
Observer Technology	-	6000	8000	14000	Video cameras & wireless tripods
Observer Travel	-	2000	4000	6000	10 trips/quarter/student teacher
Subtotal	0	22000	42000	64000	
Induction Pilot					
Participant stipend	-	-	15000	15000	\$1000 x 15 participants
Summer workshop	-	-	12000	12000	3d/2n workshop for 20
PD providers/webinar tech	-	-	4000	4000	\$750/day/instructor & tech
Subtotal	0	0	31000	31000	
Total direct	799489	508755	595931	1904175	*Abbreviations: m (month), AY (academic year), sum (summer), PD (professional development), mtg (meeting)
Indirect (15%)	119923	76313	89390	285626	
Total direct + indirect	919413	585068	685320	2189801	

#



April 15, 2016

Ms. Naria K. Santa Lucia
Executive Director
Washington State Opportunity Scholarship
(submitted via email)

Dear Naria and Members of the Program Committee:

It is my pleasure to submit the enclosed application to the Washington State Opportunity Scholarship (WSOS) for consideration of program support by the Opportunity Expansion Fund.

I respectfully request consideration of support in the amount of \$2,189,987 to support a program partnership with WSOS that will significantly increase the number of low-income undergraduate engineering students attaining degrees over the next three years, and beyond.

UW's College of Engineering (UW Engineering) develops outstanding engineers and ideas that change the world. We are proud of our students and the ways they transform lives. UW Engineering's impact on our students, our state's economy, and our community could be greater, however, if we could graduate more engineering students. With the enclosed application, UW Engineering addresses this need through a program that provides students from low-income backgrounds the resources they need to pursue rewarding engineering careers.

We look forward to partnering with WSOS on behalf of the many promising students who deserve the opportunity to achieve their educational aspirations. Please do not hesitate to contact me if you have any questions or concerns about the enclosed. I look forward to hearing from you.

Regards,

Eve Riskin
Professor, Electrical Engineering
Associate Dean, Diversity & Access

Enclosures

April 5, 2016

Washington State Opportunity Scholarship
Naria K. Santa Lucia
1605 NW Sammamish Road, Suite 200
Issaquah, WA 98027

Dear Ms. Santa Lucia:

As Dean of the University of Washington's College of Engineering, I have come to understand many of the factors that prevent low-income students from pursuing academic degrees within the field of engineering and barriers that hinder their retention once enrolled. Consequently, I have set a goal of increasing low-income student enrollment, retention, and graduation rates within the College as one of my highest priorities during my tenure as dean, and believe that STARS is one of the most effective programs by which to achieve this goal.

I pledge my strongest support for the enclosed proposal to the Washington State Opportunity Scholarship. I am confident that an expansion of the STARS program would greatly enhance our ability to enroll, retain, and graduate talented low-income students from across Washington State.

Please do not hesitate to let me know if you have any questions during the review process.

Sincerely,



Michael Bragg, Ph.D.
Frank & Julie Jungers Dean of Engineering



University of Washington
OFFICE OF SPONSORED PROGRAMS

*Office of Research
Office of Sponsored Programs*

May 27, 2016

Naria K. Santa Lucia
Washington State Opportunity Scholarship
C/O College Success Foundation
1605 NW Sammamish Road Suite 200
Issaquah, WA 98027-5388

Dear Naria K. Santa Lucia:

The University of Washington is pleased to submit this letter in support of the application entitled "Opportunity Expansion Fund: Washington State Opportunity Scholarship: STARS." This application was prepared by Associate Dean Eve A Riskin, from the department of Dean Engineering.

We present this application for your review and request support in the amount of \$2,189,987 for the period July 01, 2016 through June 30, 2019.

The University of Washington reserves the right to negotiate the Terms and Conditions of the award should this application be funded.

Thank you for your consideration.

Sincerely,



Yordanos Michael
Grant and Contract Administrator
Office of Sponsored Programs

Please reference our **#A114687** on all correspondence concerning this application.



Supporting the next generation of STEM & health care leaders

**Invitation to Apply
Opportunity Expansion Fund
Cover Sheet**

Date of Application	April 15, 2016	
Name of Institution	University of Washington	
Department	College of Engineering Diversity & Access	
Address	PO Box 352180; 356A Loew Hall College of Engineering University of Washington Seattle, WA 98195	
Proposal Contact Person – include title, email, and telephone	Eve Riskin Professor of Electrical Engineering Associate Dean, Diversity & Access College of Engineering riskin@uw.edu 206-685-2313	
Total Dollars Requested	\$2,189,987	
Total Number of Students Who Will Directly Benefit From Investment By Year	2016-2017: 250 2017-2018: 250 2018-2019: 250	
Names of the college or university administrators or senior staff members who are responsible for committing the institution to this proposal	Michael B. Bragg, Ph.D. Frank & Julie Jungers Dean College of Engineering University of Washington	Eve A. Riskin, Ph.D. Associate Dean College of Engineering University of Washington
Signature of personnel responsible for committing the institution to this proposal		

1. Describe the specific problem your institution will address with these dollars and the intended impact of your program.

Historically, only 41 percent of University of Washington (UW) entering freshmen who plan to study engineering complete engineering degrees. The success rate is nearly 20 percent lower (33%) for students who have Federal Pell Grants. Typically these students have trouble gaining admission to Engineering departments due to having inadequate K-12 preparation to compete at a college level, needing to work during college, and/or being first-generation college students. UW Engineering and the science, technology, engineering, and math (STEM) business community have lost too many promising students to other majors at UW, due to a lack of advising support and of faculty. It is a moral imperative that economically- and educationally-disadvantaged students be given every opportunity to pursue high-value degrees at UW.

The Washington State Opportunity Scholarship (WSOS) program and the UW College of Engineering (UW Engineering) share a common concern: the urgent, state-wide need for more graduates to fill the growing number of high-demand jobs in STEM fields. Both WSOS and UW Engineering understand the need to give talented young people the opportunity to pursue the STEM degree they desire. Further, we recognize that a diverse workforce is stronger and more effective. Funded by a grant from the National Science Foundation (NSF) in 2013, UW Engineering's Washington State Academic RedShirt (STARS) program addresses all of these concerns. STARS is an intensive wraparound support program that annually serves 32 Year 1 Engineering students, with Federal Pell Grants, who come from high schools in Washington with at least 30 percent of their students on free or reduced-price lunch. Effectively, it is a "redshirt year" in the NCAA sense: STARS students spend five years at UW, using the first year to develop the learning skills to succeed in UW Engineering. Students are admitted directly to an Engineering department if they successfully complete STARS' first year requirements. STARS' goal is to increase the number of economically- and educationally-disadvantaged students who graduate from the UW with engineering degrees. Please see: (<http://www.engr.washington.edu/current/stars>)



As an example, Ewurama Karikari is both a STARS student and a WSOS Scholar. She is a first-generation college student and graduated from Bethel High School in Spanaway, Washington. She is an active member of the STARS community and works as a student assistant in the program. Ewurama is currently enrolled in Mechanical Engineering and aspires to obtain a PhD in the field. This summer she will intern at Boeing in their Alliances for Learning and Vision for Underrepresented Americans (ALVA) program.

The proposed WSOS-STARS program will improve the quality of education and increase graduation rates of current STARS students as well as hundreds of additional WSOS and WSOS-like students at UW annually. It will support students in all ten engineering departments, including Computer Science and Engineering (CSE).

2. Tell us why you are interested in these one-time dollars and why it is critical you obtain these dollars now.

Since 2007-08, UW Engineering has increased the number of B.S. degrees by 39 percent. By 2018-19, with additional state funding, the College expects to award 1250 degrees. (As part of this growth plan, the Computer Science and Engineering Department was awarded state funding in 2015 to increase their degree production from 230 to 400 B.S. degrees per year.) UW Engineering wants WSOS and WSOS-like students to benefit

proportionally, *at a minimum*, from the overall increase in degrees. Unfortunately, WSOS Scholars interested in Engineering have not fared well—from 2011-2013, 340 WSOS students, who were neither in STARS nor were direct freshman admits to Engineering, came to UW with plans to study engineering. Of these 340 students, 230 (68%) completed prerequisites and applied to an engineering major. Of the applicants, only 160 were admitted and enrolled in engineering. Thus 180 WSOS Scholars (53%) are no longer in the engineering or computer science pipeline. UW Engineering can and must do better!

Nearly three years old, STARS is well-positioned to significantly expand and support more WSOS and WSOS-like students at UW Engineering, thereby further increasing the retention rates of low-income students. An estimated 350 WSOS scholars study engineering at UW every year. Most of these students, as well as additional WSOS-like students, will benefit from an expansion of STARS' wraparound resources and strategic interventions. With a significant investment from the Opportunity Expansion Fund (OEF), UW Engineering will expand the STARS program to provide interested WSOS and WSOS-like engineering and computer science students with academic support and professional development. The level of support will depend on the needs of the students. The capacity of the current STARS intensive intervention program will be doubled to reach 64 lowest-income students from high poverty schools per year (Year 1 Intensive Intervention). Students who are less needy, come from high schools with more resources, or have more advanced math placements will be supported with supplemental instruction in math/chemistry/physics, culturally-aware advising, professional development, and career services (Year 2 and Years 3-5 programs). The timely combination of increasing demand for STARS; an outstanding STARS staff; supplemental funding from the state for additional engineering degrees; and high corporate demand for diverse recruits provides the case for a college-wide STARS program now.

3. Provide a detailed description of the following:

a. Program outcomes and timeline:

In partnership with WSOS, the STARS program's goal is to dramatically improve educational outcomes, increasing the engineering degree attainment rate of WSOS and WSOS-like students to as high as 75 percent. Since the original STARS proposal was submitted to the NSF in Fall 2012, the number of underrepresented minorities admitted to UW Engineering departments has increased by 93.5 percent, while the overall number of students enrolled in departments grew by only 30.5 percent.

Of the first two STARS Year 1 cohorts, 83.3 percent were successfully accepted into an engineering department. The most popular major is Computer Science and Engineering with 26 percent of the STARS students, followed by Mechanical, Electrical and Civil and Environmental Engineering. Notably, in 2014-2015, STARS students had a cumulative GPA that was, on average, 0.33 higher than their non-STARS peers. In Winter 2015, 11 out of 30 STARS students, and in Winter 2016, 11 out of 27 STARS students made the Dean's List.

The first STARS cohort is on track for a higher rate of degree completion than non-STARS participants when they graduate in 2018. Additional projected outcomes, to be achieved between 2016 and 2019, include:

- *Increased retention rate of engineering students from low-income communities by providing intensive wraparound and support services that improve learning skills and increase confidence.*
- *Increased diversity in engineering, both at UW and in the workforce.*
- *Establishment of a community of peers and advisors to support the needs of low-income students throughout their college careers.*
- *Exposure to career opportunities in engineering and computer science, including internships, industry visits, professional skills workshops, and development of a career pathway to Washington employers.*
- *Support for 183 net new WSOS and WSOS-like students to complete their degrees.*

- *The annual engagement of approximately 250 WSOS and WSOS-like students in STARS' programs, including the Year 1 Intensive Intervention, the Year 2 program, and, for Years 3-5 and community college transfer students, degree completion services such as workshops, industry visits and career services events.*

Timeline of progress toward achievement of outcomes by academic year:

2016-2017	Begin progress toward all outcomes through program and staff expansion
2017-2018	Full implementation of expanded STARS approximately 250 students per year Report outcomes data to WSOS
2018-2019	Graduation of first STARS student cohort (65 percent projected to receive engineering degrees)
2019-2020	75 percent of students of all WSOS and WSOS-like students receive degrees

b. Project activities and timeline; include when new staff will be hired, new programs or curriculum will be launched, etc.;

The proposed WSOS-STARS' program recognizes that one lens cannot be used to view the experience, talents and skills of all students. Therefore, the program is organized into four components that offer resources according to student achievement and year in college. Planned activities include:

Year 1 Intensive Intervention--

Beginning 2017-2018, the expanded WSOS-STARS Year 1 Intensive Intervention will establish two dual cohorts that receive the most intensive support, benefiting 64 students. New program and advising staff will be hired by Fall 2016 to ensure that all students receive targeted support—inside and outside the classroom—so that they persist through Year 1, and are accepted into an engineering department. The Year 1 program will encompass all current program elements, including:

- Transition Week, a one-week residential bridge program for Year 1 students held in September.
- A specialized curriculum aligned with comprehensive and individualized academic advising.
- A supportive community of peers, faculty, and staff.
- Career and professional development opportunities, including visits to industry, networking opportunities, professional development, and career and internship workshops.
- Supplemental tutoring and instructional support.
- Acceptance into an engineering department upon completion of all first-year STARS requirements.

All Year 1 students will have access to more than 30 academic, personal, career and professional development workshops in a weekly seminar. During several seminars, panels are held with industry professionals. In March, at the conclusion of the professional development module, students receive a STARS Career Success Certificate.

New WSOS and WSOS-like students who do not require the Year 1 Intensive Intervention will also be served. These include students who have high Math SAT scores and/or are ready for an advanced math placement. They will be eligible for the advising and academic resources available to WSOS-STARS upper classmen, including resources noted in the Year 2 program below.

Year 2 Program--

The WSOS-STARS program for Year 2 students includes continued academic and advising support and career development opportunities. All WSOS and WSOS-like students who do not need the Year 1 Intensive Intervention will be eligible for these services starting their first year at UW. (A one-time, major gift from The Seattle Foundation is providing Year 2 programming to STARS students during 2015-16.) Support will include:

- *An introductory physics course* prior to Physics 121.
- *Tutoring services* in math, chemistry, and physics.
- *Academic support services* such as tutoring and workshops through the Engineering Academic Center, a UW Engineering-based multi-service academic support center.
- *Career Development and community-building programming* such as industry visits, networking opportunities, career and internship workshops, tech talks, and faculty research presentations.

Years 3, 4, 5 Program--

Years 3 – 5 WSOS-STARS students are eligible for academic monitoring, advising support, and career services that help all engineering students complete their engineering degree. Support measures include:

- *Personalized engineering advising and close academic monitoring* of progress through the academic curriculum by advisors who are knowledgeable about underserved student populations.
- *Professional and career development programming* such as workshops, networking events, industry visits, internships, career fair preparation.
- *Assistance regarding scholarship opportunities* available at UW Engineering.
- *Community-building opportunities* through special events, and student organizations such as the UW Minority Scholars Engineering Program, Women in Science and Engineering (WiSE), Society of Hispanic Professional Engineers, National Society of Black Engineers, and the Society of Women Engineers.

Community College/Transfer Students:

As a highly motivated group, approximately 90 percent of community college transfers complete Engineering degrees at UW. However, many lack a sense of belonging when they arrive. Recognizing this need, UW Engineering has dedicated 30 percent of a position to work with community college students. UW Engineering just hired Ms. Cassandra Venneau, who was a Senior Admissions Counselor at Western Washington University (WWU). At WWU, she frequently engaged in outreach and recruitment activities with community college students to ensure them a smooth transition to WWU. The WSOS-STARS program's expansion will include additional advising and a transition program for community college students. Through the WSOS-STARS program, the following support measures will be provided to community college transfers:

- *A one-week Transition Week* for interested community college students, just prior to their first year at UW. Academic skills and community building will be emphasized. Information sessions about available advising, career, and study resources, campus orientation, and speakers from industry will be included.
- *Personalized academic advising* by culturally-competent advisers who are knowledgeable about community college transfer student populations.
- *All resources available* to Years 3-5 students listed above.

WSOS-STARS Program Timeline

To quickly and effectively implement the expanded WSOS-STARS program, staff hiring is planned for the summer of 2016 so that all program components are operational by Fall 2016. The expansion of the Year 1

program to 64 students will take place in Fall 2017. (The 2016 STARS student selection and program planning processes have already taken place.)

2016-2017 Academic Year:

Summer Quarter	Hiring of program staff, advisors, teaching assistants, academic instructors Transition Week for 32 Year 1 WSOS-STARS students Transition Week for interested community college transfers
Fall Quarter	Continue WSOS-STARS program for 32 Year 1 students Continue WSOS-STARS program for Year 2 students Launch WSOS-STARS program for Years 3-5 students Launch WSOS-STARS program for community college transfer students Career Trek (Industry Visits)
Winter Quarter	Workshops: Internships, Career, Professional Development Continue above programs Etiquette Dinner & Networking Breakfast WSOS and STARS applications due Career Services Certificate awarded to Year 1 students Career Trek
Spring Quarter	Workshops: Internships, Career, Professional Development, WiSE Conference Continue above programs Selection of 64 Year 1 WSOS-STARS students for 2017-2018 Academic Year Career Trek Workshops: Internships, Career, Professional Development Year 1 students notified of UW Engineering departmental acceptance

2017-2018 Academic Year: Continue all programs listed above, plus:

Summer Quarter	Report outcomes data to WSOS Selected Year 1 graduates participate in internships and research opportunities, including Boeing's ALVA program, UW research and NASA Space Grant internships. Selected Years 2, 3 & 4 students participate in internships and research opportunities, including Microsoft's Explorer program, UW research internships. Conduct annual program evaluation
Fall Quarter	Launch expanded WSOS-STARS program for 64 Year 1 students Hire Advancement Officer
Spring Quarter	Graduation of 1 st cohort of STARS students (entered UW in 2013-2014) Graduation of 1 st cohort of community college transfers to participate in WSOS-STARS

2018-2019 Academic Year: Continue all programs listed above

c. If your program includes internships, please describe whether the internship is required; if the internship is integrated into the curriculum; and how wages will be paid – to the student or the employer;

Internships during students' undergraduate years are highly recommended by UW Engineering, although they are not required. ENGR 321 (1-2 credit course) enrolls students for academic credit that can be applied to their graduation requirements under "Technical Electives." The cost is \$180 per credit, which is dependent on the number of hours/week worked. The course provides structure for students and employers through completion of assignments that enhance their professional development. Most students complete an internship between

Years 4 and 5, and many students, especially those who have completed the core courses in their major, also complete another internship between Years 3 and 4. The Career Center @ Engineering (CC@E) strongly encourages all employers hiring UW Engineering interns to pay their interns. (For private-sector employers who do not wish to pay interns, they are advised to speak with their own Corporate Counsel to determine if the Department of Labor's six-pronged test fully applies.)

d. Specific student populations who will benefit from the program and the benefit they will gain, including WSOS and WSOS-like students.

Currently, to qualify for the STARS Year 1 Intensive Intervention, students must graduate from a Washington high school with a high population of students receiving free or reduced-priced lunch and be Pell grant-eligible, which is a proxy for identifying low-income students at UW. However, financial eligibility for Pell grants is much more stringent than for WSOS; therefore, if funded, UW Engineering will work closely with WSOS to identify students who are eligible for the WSOS-STARS program, which will include all students receiving a WSOS scholarship. The program will include students enrolled in all ten departments, including Computer Science and Engineering, and in all undergraduate levels in UW Engineering. It is estimated that approximately 250 WSOS and WSOS-like students will access WSOS-STARS resources annually. All WSOS-STARS students will be required to apply for the WSOS (if they don't already have it). In fact, 19 of the 30 STARS students who will enter UW in Fall 2016 were selected for the WSOS.

Beyond the very important scholarships provided by WSOS, a college-wide WSOS-STARS program will benefit students by increasing their chances of receiving their engineering degree. In total, with the OEF investment, over the next three years UW Engineering would award 519 additional degrees in engineering and computer science. This includes 183 net new degrees to WSOS and WSOS-like students, an 84 percent increase over the 219 UW Engineering degrees awarded to WSOS and WSOS-like students in 2014-15.

Community college transfers are a very important student population to UW Engineering. UW Engineering enrolls nearly 20 percent of its undergraduates from community colleges. Currently, 46 percent of the Pell grant-eligible students and 30 percent of the underrepresented minority students enrolled in engineering departments are community college transfers. Most community college students who arrive at UW enroll directly in engineering departments and, hence, approximately 90 percent graduate with degrees. (Nationally, only 14 percent of community college transfers earn a four-year degree within a six-year period.)

WSOS-STARS will provide social and community support to ensure STARS students experience an inclusive college community that helps to integrate them into the University. By addressing their social well-being, and orienting them to the many academic resources available to upper division engineering students, WSOS-STARS will help ensure their continued academic achievement and social well-being through to degree completion.

e. Describe the full continuum of services that will be provided to WSOS and WSOS-like students 1) prior to college enrollment, 2) during college enrollment, and 3) post-graduation, if appropriate.

A fully expanded STARS program will leverage resources across the UW to provide a full continuum of services to all WSOS and WSOS-like students. These include the following:

Pre-college enrollment: UW and UW Engineering conduct several ongoing programs for Washington high school students to strengthen their academic pathway to college:

- Math Academy—a four-week intensive residential program that builds math and college-readiness skills for 32 high achieving, rising high school seniors from low-income communities.

- ALVA GenOM and Clean Tech internship and NASA Space Grant programs which are available to students who have been admitted to the UW.
- Outreach to high schools in low-income communities about UW Engineering programs.
- The annual Engineering Discovery Days, a UW Engineering-wide open house with 100+ exhibits, attended by 9,000 middle and high school students.
- STARS and WiSE transition programs for students enrolling at UW, held just prior to fall quarter.

During college enrollment: An expanded WSOS-STARS program will provide a full continuum of wraparound services (academic support, professional development, and community-building) which are described in detail in Appendix A and B.

Post-graduation: The UW central career services division provides career consultation, free-of-charge, for one year after graduation. All UW alumni may access HuskyJobs for a fee.

4. Submit a detailed budget (including staffing costs, materials, equipment, services, travel, other, and indirect of no more than 15%). Please include sources of leverage dollars. Provide a timeline and the preferred payment structure from the OEF. Payments should not extend beyond 3 years.

Please see the attached WSOS-STARS program budget for the period July 1, 2016-June 30, 2019. If awarded an OEF grant, UW Engineering would prefer an annual payment distribution from OEF. Not shown in project years 1 and 2 are expenses covered by a \$150,000 annual grant from the NSF, including the STARS Director's salary. NSF restricts inclusion in other proposals of NSF-funded expenses.

5. Describe the specific steps you will take to sustain the program beyond the one-time OEF investment dollars. Please include a timeline.

In the current strategic plan, Dean Michael Bragg has identified increasing diversity, inclusion and access as one of the UW Engineering's top five priorities. Leading this initiative is Dr. Eve Riskin, Associate Dean for Diversity & Access (D&A). Dean Bragg invested significant resources to create this new position. Under Dr. Riskin's direction, UW Engineering's D&A team develops and manages programs that support underserved engineering students, including underrepresented minorities (URM), women, and low-income and/or first-generation students. The Dean's office, corporations, foundations and individuals fund these programs. Within the D&A division, an expanded STARS program is a priority. UW Engineering is committed to sustaining the UW Engineering-wide STARS program after the OEF investment has expired. It will also provide the necessary resources to allow for the build-out of office and program space and assist with administrative support.

The NSF grant for STARS continues until 2018, providing \$150,000 per year in the first two years. Dr. Riskin is PI of a second NSF grant that is expected to begin in Fall 2016. The new grant will provide \$5 million in scholarship funds to six universities: University of Colorado-Boulder, UW, and Washington State University (WSU), Boise State University, University of California-San Diego, and the University of Illinois Urbana-Champaign. This grant will also establish UW as a leader in redshirt programming. (As part of this effort, WSU will require their STARS students to apply for the WSOS.)

As part of its sustainability plan, UW Engineering will request state funding to permanently institutionalize STARS beginning with the 2017-2019 biennium. A request for full funding of STARS will be submitted in UW Engineering's state funding request, with the anticipation that funds could be available prior to the conclusion of the WSOS grant. To strengthen this request, Engineering is building the case for engineering expansion both in enrollment and in diversity and access programs. This includes a partnership with a professional adviser to develop a comprehensive communications and positioning plan to elevate awareness of the capacity issue and

garner support. Legislative outreach and education will begin in 2016 in coordination with the UW's Government Relations Office. As part of this Dean Michael Bragg will begin meeting with key representatives in the state legislature to establish a presence for UW Engineering.

In addition, UW Engineering's Advancement office will initiate a focused campaign to seek corporate, foundation and individual donations and allow for enhanced programming and additional staff support. Already STARS is proving to be an attractive investment for corporate, foundation, and individual donors.

Program Sustainability Timeline:

2016-17	STARS office and classroom space expansion UW Engineering enrollment and STARS expansion request developed with a professional adviser
2017	Request made to Washington legislature Advancement Officer hire (50 percent time)

UW Engineering believes these are realistic, attainable goals that will ensure that the WSOS investment continues to serve all eligible engineering students beyond the OEF's one-time funds.

6. Tell us about specific employers and their commitment to your program. Please attach signed letters by employers that describes their partnership.

Boeing: UW Engineering works closely with many Boeing divisions to ensure that low-income, diverse, and/or URM students have the opportunity to become interns and/or employees. STARS students are well-represented in all of Boeing-provided opportunities. Thanks to Boeing, STARS students participate as ALVA interns each summer or as selectees for the Engineering Accelerated Hiring Initiative; have received company-funded scholarships; and are mentored through student design projects and diversity student organizations. Each year, all STARS students travel to Renton and experience the Boeing flight simulator. Six students from STARS Cohort 2 were selected to participate in ALVA in Summer 2016.

CH2M: The corporate foundation, CH2M Foundation, made a \$14,000 contribution to STARS which helped purchase needed textbooks for Chemistry, Math and Physics. Every year, Seattle Managing Partner, Amy Carlson, presents a 'soft skills' class and helps award Career Success Certificates to the STARS students. Ms. Carlson also participates in speed networking events attended by STARS students. While CH2M is not an internship prospect, the company hires UW Engineering students on an annual basis.

Intel: Intel engineer Bill Fishburn (B.S. AA, 1993) is a member of the STARS external advisory board. Bill is a strong advocate for the academic achievements of URM students and has participated in industry panels and networking events with STARS students. He also helps recruit Latina/Latino students to STARS.

Microsoft: Microsoft University Relations leads Becky Tucker and Jeremy Briggs will present information about the Explorer program to STARS students during a visit to Microsoft in the fall. Microsoft is also supporting the program by providing each Year 1 STARS student with a high-end Surface Tablet in the fall of 2016. In addition, the IMML and Visual Studio groups are especially interested in STARS students as interns.

7. Describe how you will integrate a continuous improvement process into your program. Tell us about the evaluation you intend to implement.

UW staff with database expertise and access to the UW Student Database will pull and report WSOS-STARS student participation, retention, and graduation rates. Besides reviewing outcomes data, as required by the

current NSF grant for STARS, the UW's Center for Workforce Development (CWD) conducts a thorough, data-driven program assessment and evaluation of STARS every year, a process that drives program improvement. While CWD will not be evaluating the full WSOS program, we can use lessons learned from the NSF evaluations to improve the WSOS program. The assessment and evaluation process includes the following:

- Incoming students complete a baseline survey prior to the start of the school year and follow-up surveys at the end of their first and second years of school. These surveys investigate the internal and external factors and challenges related to the students' persistence in engineering.
- Institutional data (total and target population degrees and enrollments by grade level) are monitored.
- Captured data are analyzed to evaluate the impact/value of various program components.
- Deliverables include annual reports, including recommendations for program improvement.

To ensure that individual students are on track, each quarter a UW Engineering advisor downloads a cumulative grade report and shares it with the relevant staff. Grades in math and science courses, in particular, are closely monitored. Low grades in these courses serve as an early warning system for potential struggles in higher level coursework. Close communication between advisors and academic instructors contributes to successful, timely interventions while there is still an opportunity to improve learning. In some cases, advisors meet with a student to discuss goals and study habits.

8. Describe the top three challenges you may face in implementing the program.

Student Finances: As a five-year long program, STARS represents a significant investment of time and funding from students and their families. In reality, many engineering students already take five years to complete their degrees, but low-income and first-generation students and their families often view a five-year commitment as a financial burden. In conversation with these families, STARS staff provides information that outlines the program's many advantages, including the opportunity to be directly admitted into a department after Year 1. Fortunately, the WSOS grants scholarships for five years which helps ease the financial burden of the fifth year.

Student Commitment to STARS: STARS students understand STARS' enormous value, as do their professors and instructors. However, many incoming students do not understand how badly they need STARS to succeed in engineering. Many STARS-eligible students have done well in high school math and science classes and are confident about their abilities; however, the difficulty of college-level courses is a reality many discover too late, only after they begin their freshmen year and do poorly in prerequisite courses. Over time, STARS' reputation will help secure students' commitment to the program both for incoming Year 1 students and Years 2-5 students. UW Engineering hopes to partner with WSOS to communicate the STARS opportunities to WSOS students and would especially appreciate help recruiting 64 low-income students for the Year 1 Intervention.

Institutionalization of STARS: UW Engineering is deeply committed to diversifying the undergraduate population and plans to fully institutionalize STARS so that it is an integral part of the college. As part of its sustainability plan, UW Engineering will request state funding to permanently institutionalize STARS beginning with the 2017-2019 biennium. If STARS is included in the UW's state funding request and approved by the legislature, we anticipate that funds could be available prior to the conclusion of the WSOS grant. Legislative outreach and education will begin in 2016 in coordination with the UW's Government Relations Office. (A letter from House Representative Gerry Pollet is included with the support letters.) Our goal is that STARS is fully embedded throughout UW Engineering by mid-2019. Fortunately, STARS' successful placement of high achieving diverse students in the academic departments is already establishing a culture of inclusion for the program.

9. Tell us about the graduation and job placement rates for the 2014-2015 graduates of the program areas (computer science, engineering and/or K-12 STEM Teaching) you are seeking funding for with this request.

UW Engineering can admit only half of the eligible applicants to its academic departments, whether the students are enrolled at UW or are transfers from Washington state community colleges. However, due to capacity-building funding from the State, UW Engineering has increased the number of B.S. degrees by 39 percent since 2007-2008, to 968 degrees awarded in 2014-2015. (Unfortunately, due to the staggered admission system, UW Engineering is unable to report an exact graduation rate.)

Regarding job placement rates, the UW Career Center is currently working with the Office of Educational Assessment to survey 2015 graduates. The UW Career Center's 2014 survey indicated that major employers of engineering graduates included Boeing, Google, and Microsoft. Since the response rate to the survey was low (11 percent), an overall job placement rate is unavailable. UW Engineering reports that approximately 75 percent of graduates are employed in Washington.

Please attach signed letters of commitments from other key partners beyond employers.

Please find letters from the following key partners:

- National Action Coalition for Minorities in Engineering (NACME)
- Seattle Central Community College
- UW Office of Minority & Diversity (OMAD)
- Washington State Representative Gerry Pollet
- Washington Council for Engineering and Related Technical Education (WCERTE)

10. Describe the number of students who will directly benefit from the program.

UW Engineering estimates that approximately 250 WSOS and WSOS-like students will access STARS programs and resources annually. When fully operational in steady state, UW Engineering projects the following breakdown of active STARS students by year:

- Year 1: 64 students enrolled in intensive program.
- Year 2: 64 students enrolled in Year 2 academic program; approximately 50 additional students access STARS' academic, advising, and career services resources.
- Years 3 – 5: approximately 75 students, including community college transfers, access STARS' academic, advising, and career services resources each year.

With the one-time OEF support, UW Engineering predicts that it will be able to award an additional 519 degrees, which includes 183 net new degrees to WSOS and WSOS-like students.

It is a privilege to present this partnership proposal for WSOS consideration. Thank you for this wonderful opportunity to advocate for our students. We look forward to addressing our shared goal of helping economically-disadvantaged engineering students achieve their educational aspirations.

11. Please provide the following metrics **only for the program area** you are seeking funding from the OEF.

NOTE: Please include **By Year** the Net New Students who will Achieve Degrees with this Investment:

Student Categories		2014-2015 Students				Net New Students Who Will Achieve Degrees with this Investment - Include By Year (2016-2019)			
		Computer Science	Engineering	Teaching STEM (K-12)	Total	Computer Science	Engineering	Teaching STEM (K-12)	Total
1	Students achieving degrees in computer science, engineering, or teaching of STEM (K-12)	231	746	0	977	33 (16-17)	40 (16-17)	0	73 (16-17)
						94 (17-18)	79 (17-18)		173 (17-18)
						119 (18-19)	154 (18-19)		273 (18-19)
2	Students who earned associates degrees in WA state and transfer into computer science, engineering or teaching of STEM (K-12)	83	495	0	578	10 (16-17)	15 (16-17)	0	25 (16-17)
						32 (17-18)	35 (17-18)		67 (17-18)
						45 (18-19)	83 (18-19)		128 (18-19)
3	Students who earned associates in WA state and transfer into computer science, engineering or teaching of STEM (K-12) and complete 4 year degrees	24	208	0	232	4 (16-17)	5 (16-17)	0	9 (16-17)
						9 (17-18)	18 (17-18)		27 (17-18)
						19 (18-19)	31 (18-19)		50 (18-19)
4	WSOS students achieving degrees in computer science, engineering, or teaching of STEM (K-12)	13	63	0	76	4 (16-17)	7 (16-17)	0	11 (16-17)
						8 (17-18)	18 (17-18)		26 (17-18)
						14 (18-19)	18 (18-19)		32 (18-19)
5	WSOS-like students achieving degrees in computer science, engineering, or teaching of STEM (K-12)	29	114	0	143	4 (16-17)	6 (16-17)	0	10 (16-17)
						14 (17-18)	20 (17-18)		34 (17-18)
						25 (18-19)	45 (18-19)		70 (18-19)

**Washington State Opportunity Scholarship: STARS
7/1/16-6/30/19**

DIRECT COSTS					Year 1	Year 2	Year 3	Total
					7/1/16-6/30/17	7/1/17-6/30/18	7/1/18-6/30/19	
a. Personnel								
Director	No of Months	12 Effort	100% Sal/mo	\$ 6,300			\$ 75,600	\$ 75,600
Program Manager	No of Months	12 Effort	100% Sal/mo	\$ 5,000	\$ 45,000	\$ 61,800	\$ 63,654	\$ 170,454
Advisor/Counselor #1	No of Months	12 Effort	100% Sal/mo	\$ 3,750	\$ 39,750	\$ 54,591	\$ 56,228	\$ 150,569
Advisor/Counselor #2	No of Months	12	100% Sal/mo	\$ 3,750	\$ 39,750	\$ 54,591	\$ 56,228	\$ 150,569
Academic Instructor #1 (Math)	No of Months	12 Effort	100% Sal/mo	\$ 5,250	\$ 62,688	\$ 64,569	\$ 66,506	\$ 193,763
Academic Instructor #2 (Physics)	No of Months	9 Effort	100% Sal/mo	\$ 5,250	\$ 47,250	\$ 48,668	\$ 50,128	\$ 146,046
Academic Instructor #3 (Chemistry)	No of Months	9 Effort	100% Sal/mo	\$ 5,250	\$ 47,250	\$ 48,668	\$ 50,128	\$ 146,046
Advancement Officer		12	50%	\$ 6,250		\$ 37,500	\$ 38,625	\$ 76,125
Teaching Assistant #1-Chemistry	No of Months	9 Effort	50% Sal/mo	\$ 4,120	\$ 18,540	\$ 19,096	\$ 19,669	\$ 57,305
Teaching Assistant #2-Chemistry	No of Months	9 Effort	50% Sal/mo	\$ 4,120	\$ 18,540	\$ 19,096	\$ 19,669	\$ 57,305
Teaching Assistant #1-Math	No of Months	9 Effort	50% Sal/mo	\$ 4,120	\$ 18,540	\$ 19,096	\$ 19,669	\$ 57,305
Teaching Assistant #2-Math	No of Months	9 Effort	50% Sal/mo	\$ 4,120	\$ 18,540	\$ 19,096	\$ 19,669	\$ 57,305
Teaching Assistant #3-Math	No of Months	9 Effort	50% Sal/mo	\$ 4,120	\$ 18,540	\$ 19,096	\$ 19,669	\$ 57,305
Teaching Assistant #1-Physics	No of Months	9 Effort	50% Sal/mo	\$ 4,120	\$ 18,540	\$ 19,096	\$ 19,669	\$ 57,305
Graduate Student Assistant	No of Months	9 Effort	50% Sal/mo	\$ 4,120	\$ 18,540	\$ 19,096	\$ 19,669	\$ 57,305
<i>Note: 3% salary increase estimated per year for staff & faculty, and graduate students.</i>								
Total Personnel Costs					\$ 411,468	\$ 504,058	\$ 594,780	\$ 1,510,306 (01)
b. Fringe Benefits								
	Graduate Students	17.7%			\$ 22,971	\$ 23,660	\$ 24,370	\$ 71,001
	Professional Staff (WSOS-funded)	30.5%			\$ 52,384	\$ 66,993	\$ 92,061	\$ 211,438
	Professional Staff (UW-funded)	30.5%			\$ 33,531	\$ 34,537	\$ 35,573	\$ 103,641
Total Benefit Costs					\$ 108,886	\$ 125,190	\$ 152,004	\$ 386,080 (07)
c. Travel								
	Domestic	4 per year @ \$2000			\$ 8,000	\$ 8,000	\$ 8,000	\$ 24,000
Total Travel Costs					\$ 8,000	\$ 8,000	\$ 8,000	\$ 24,000 (04)
f. Graduate Operating Fees								
	College of Engineering Tuition (7)	\$5,156			\$ -	\$ -	\$ -	\$ -
Total Graduate Operating Fees					\$ 108,276	\$ 112,607	\$ 117,111	\$ 337,994 (08)
<i>Note: 4.0% increase estimated per year effective 2015</i>								
g. Services								
	Tutors	\$4,500			\$ 18,000	\$ 36,000	\$ 36,000	\$ 90,000
	Programming-community building				\$ 7,900	\$ 8,000	\$ 8,000	\$ 23,900
	Transition Week-Year 1				\$ 30,000	\$ 60,000	\$ 60,000	\$ 150,000
	Transition Week-Community College				\$ 20,000	\$ 20,000	\$ 20,000	\$ 60,000
	Career Services				\$ 34,500	\$ 34,500	\$ 34,500	\$ 103,500
Total Other Services Costs					\$ 110,400	\$ 158,500	\$ 158,500	\$ 427,400 (03)
h. Participant Support								
Total Participant Support					\$ -	\$ -	\$ -	\$ -
TOTAL DIRECT COSTS					\$ 747,030	\$ 908,355	\$ 1,030,395	\$ 2,685,781 (TDC)
TOTAL INDIRECT COST BASE FOR WSOS FUNDING					\$ 495,285	\$ 647,974	\$ 761,077	\$ 1,904,336
TOTAL INDIRECT COSTS ON WSOS FUNDING (15%)					\$ 74,293	\$ 97,196	\$ 114,162	\$ 285,650
TOTAL DIRECT & INDIRECT COSTS					\$ 821,323	\$ 1,005,552	\$ 1,144,557	\$ 2,971,431
REVENUE								
College of Engineering Contribution (all charges in yellow)					\$ (251,745)	\$ (260,381)	\$ (269,318)	\$ (781,444)
k. TOTAL REQUESTED					\$ 569,578	\$ 745,170	\$ 875,239	\$ 2,189,987 (TC)



The Boeing Company
P.O. Box 3707
Seattle, WA 98124-2207

March 16, 2016

Naria K. Santa Lucia
Executive Director
Washington State Opportunity Scholarship (WSOS)
1605 NW Sammamish Road, Suite 200
Issaquah, WA 98027

Dear Ms. Santa Lucia:

I am pleased to submit a letter of support to WSOS for the excellent STARS program at the University of Washington's College of Engineering.

For the past two years, Boeing has supported the STARS program with a \$50,000 gift that is directed to the annual Transition Week. Transition Week provides incoming freshmen STARS students with a residential campus experience packed with academic, social, and community-building activities that are designed to prepare them for rigorous academic coursework and campus life. This crucial program component establishes in STARS students a strong sense of community and provides them with an understanding of advising and academic resources that help ensure their success. Boeing is very proud that its funding provides a significant advantage to STARS students as they begin their college careers.

Well beyond Transition Week, however, STARS students benefit from the broad reach of Boeing funding and expertise that annually enriches the college experience for all UW Engineering students. Every year, scores of Boeing engineers participate as speakers, panelists, and mentors to UW Engineering students and much of its annual philanthropic funding is directed to diverse and low-income student retention and scholarship programs, which are Boeing priorities.

Boeing's financial support of and employee participation in undergraduate programs such as the Alliance for Learning and Vision for Americans (ALVA), ten student design projects, the Engineering Academic Center, and support of student diversity organizations—American Indian Science and Engineering Society, National Society for Black Engineers, Society of Hispanic Professional Engineers, Society of Women Engineers—returns great dividends to Boeing in terms of influencing students in positive ways and contributing to the perception of Boeing as an 'employer of choice.'

Boeing's partnership with UW Engineering is nearly a century-old and extends to virtually every aspect of the College. Undoubtedly, this inextricable linkage will continue far into the future. I urge WSOS to approve UW Engineering's request for support of STARS. It is an investment that will have a very significant, positive impact on the number of well-educated engineering candidates available to the corporate community in the Puget Sound region. Many thanks for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Todd Zarfos", with a long, sweeping flourish extending to the right.

Todd Zarfos
Vice President
Engineering Functions
Washington State Design Center



CH2M

1100 112th Ave NE Suite 500
Bellevue Washington 98004
O +1 425-233-3184
www.ch2m.com

Naria K. Santa Lucia
Executive Director
Washington State Opportunity Scholarship (WSOS)
1605 NW Sammamish Road, Suite 200
Issaquah, WA 98027

March 9, 2016

Dear Ms. Santa Lucia,

It is my pleasure to advocate for the application to WSOS from the University of Washington's College of Engineering on behalf of its vital and valuable STARS program.

For the past couple of years, CH2M has contributed both funds and expertise to the STARS program and its students. The CH2M Foundation, which prioritizes quality educational programming for underrepresented student populations, made a sizeable contribution to STARS to ensure that low-income students receive the support needed to obtain their degrees.

The STARS Career Services Success Certificate program prioritizes the development of career skills in seven critical areas that are necessary for success in the workplace. The STARS students are uniformly accomplished, eager to improve their skills (networking, presentation, public speaking), and personable. As part of the STARS program, I have the opportunity to conduct a 'soft skills' seminar for the students to provide context on the necessity of these skill sets both within and outside of the academic realm.

The more I participate in College of Engineering activities, the more I learn about the strategic resources that are available to diverse, underrepresented, and low-income students, all designed to provide the support needed to pursue engineering degrees. I participated in a related speed-networking event with low-income high school students—many of whom will be eligible for STARS—in which I was able to talk and answer questions about my work, the civil engineering field, and work-life balance.

The STARS program is top notch, provides an essential ingredient in their education, and director Sonya Cunningham makes sure that all the students are well-prepared. In all, the experience with STARS has been extremely positive and I am very happy that CH2M is an active partner in this endeavor. It is my sincere hope that WSOS fully acknowledges this high value program as we have at CH2M. Please feel free to contact me by phone (425-213-7134) or by email (amy.carlson@ch2m.com) to discuss further.

Regards,

A handwritten signature in blue ink, appearing to read 'Amy M. Carlson'.

Amy M. Carlson, P.E.
Vice President and Puget Sound Area Manager, CH2M HILL

March 17, 2016

Naria K. Santa Lucia
Executive Director
Washington State Opportunity Scholarship (WSOS)
1605 NW Sammamish Road, Suite 200
Issaquah, WA 98027

Dear Ms. Santa Lucia,

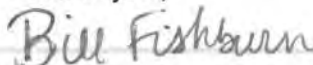
I am a Senior Technical Program Manager at Intel Corporation's Washington site and have been with Intel since 1995. I am a 1993 graduate of the UW Department of Aeronautical and Astronautical Engineering and have a Master's Degree in Mechanical Engineering from the University of California, Berkeley. I also am active with the Hispanic Roundtable of South Sound and currently serve as its President. I was really glad to hear that the University of Washington's STARS program is being considered for funding by the WSOS.

I am familiar with STARS because I serve on its external advisory board. I strongly support its goals to provide extra support to low-income students from underserved high schools. Many of the high schools in my area have such students and they can struggle being admitted to UW Engineering programs. At the same time, we all would like to see more diverse engineers graduating from UW. STARS provides a solution that increases diversity in UW Engineering which will, in turn, improve the educational experiences of all UW Engineering students.

As you know, the Intel Corporation is strongly committed to diversity and recently announced its \$300M pledge in support of its diversity and inclusion goals. One of Intel's corporate values is being an asset to the community. In support of those Intel goals and values, I actively advocate for those University of Washington students studying Electrical Engineering and Computer Science and Engineering. I look forward to the time when STARS students begin to graduate from UW so that I can advocate for them as potential Intel employees, because they are individuals who clearly demonstrate that hard work and intelligence can overcome a lack of privilege. I believe they will bring a diverse perspective to any company, and I hope that company can be Intel.

I hope the STARS proposal will be selected by the WSOS for funding.

Thank you,

A handwritten signature in blue ink that reads "Bill Fishburn". The signature is written in a cursive style and is positioned above a horizontal line.

Bill Fishburn



3/22/2016

Ms. Naria K. Santa Lucia
Executive Director
Washington State Opportunity Scholarship (WSOS)
1605 NW Sammamish Road, Suite 200
Issaquah, WA 98027

Dear Ms. Santa Lucia,

It is my pleasure to submit a letter of support for the University of Washington College of Engineering's STARS proposal to WSOS.

Microsoft has a strong partnership with the College of Engineering, which has been a consistent source of high performing interns and employees at Microsoft. While Microsoft has a robust and productive history with the Computer Science and Engineering department, I have recently begun to engage in the fine work of the Diversity & Access division, led by Associate Dean Eve Riskin. One of the standout programs she oversees is the STARS program.

STARS is helping to diversify the workforce by supporting high-achieving, hard-working engineering students from low-income communities with academic interventions that ensure they persist through college. In my view, STARS has the potential to become an excellent source of candidates for Microsoft's Explorer program and, we hope, beyond.

As an immediate investment, Microsoft is donating thirty-two Surface Tablets for use by Year 1 STARS students beginning in the Fall, 2016. I have also pledged to meet with STARS students to present information about the Explorer program, participate in career development workshops for internship-eligible students and promote Microsoft as an outstanding option for a STEM career.

I was very interested to learn that STARS may expand to support all WSOS and WSOS-like students at the College of Engineering. With the potential to expand and include hundreds of well-educated, diverse candidates enrolled in its program, STARS is of great interest to Microsoft's recruiting division. I strongly encourage WSOS to approve UW Engineering's grant request to enable the expansion of STARS to help ensure that even more outstanding graduates will emerge from the UW College of Engineering.

Sincerely,

A handwritten signature in black ink, appearing to read "Rebecca A. Tucker". Below the signature is the date "3/22/16" written in the same ink.

Rebecca A. Tucker, Microsoft University Recruiter



March 25, 2016

Naria K. Santa Lucia
Executive Director
Washington State Opportunity Scholarship (WSOS)
1605 NW Sammamish Road, Suite 200
Issaquah, WA 98027

Dear Ms. Santa Lucia,

I am happy to write this letter of support for the Washington State Academic RedShirt (STARS) program in the University of Washington's College of Engineering.

I am the Chief of Staff in the Data Group at Microsoft Corporation. Our team is building the next generation Cloud Data Platform and Machine Learning services and tools for transforming data at scale into intelligence. I have been at Microsoft since 2003 and my PhD is from Washington State University.

I learned about STARS through Professor Eve Riskin. I met her last summer when I attended a parent orientation for incoming UW freshmen.

As part of this, she led the session with a UW faculty member that I attended. I learned that she has run the UW's ADVANCE program and that they have a very high percentage of female faculty in the College of Engineering.

At Microsoft, I have been recognized as recruiting a high number of women to my group. However, we still wish to increase the diversity of our organization.

We have met several times with Professor Riskin and her colleagues to learn about ADVANCE's success in recruiting women to UW and to discuss the possibility of starting an internship program at Microsoft for diverse students towards the start of their education.

We are excited to hear that STARS may expand to serve all WSOS Scholars and that the first-year STARS program may double in size. Microsoft is very interested in recruiting diverse talent and I understand that the STARS students are diverse, hard-working, and will bring new perspectives to our workforce.

We are also teaming up with Professor Riskin and Microsoft recruiting to include STARS program as a part of the explorer internship program

I hope that the UW proposal will be selected by WSOS for funding.

Thank you,

A handwritten signature in black ink, appearing to read "A. Raman".

Anand Raman, PhD
Chief of Staff, Data Group
1 Microsoft Way,
Redmond, WA 98052



**National Action Council for
Minorities in Engineering, Inc.**

One North Broadway
Suite 601
White Plains, NY 10601-2318
914-539-4010
914-539-4032 fax

nacme.org

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Xerox Corporation

March 10, 2016

Ms. Naria K. Santa Lucia
Executive Director
Washington State Opportunity Scholarship (WSOS)
1605 NW Sammamish Road, Suite 200
Issaquah, WA 98027

Dear Ms. Santa Lucia,

On behalf of the National Action Council for Minorities in Engineering (NACME), it is my pleasure to submit a letter of support to WSOS regarding our partnership with the University of Washington's College of Engineering (UW Engineering).

NACME is a national consortium that provides scholarship support for undergraduate minority engineering students. NACME's corporate board and contributors include 3M, Exxon, GM, Hewlett Packard, Intel, among others. NACME's supporters reflect the United States' strong corporate interest in growing a diverse engineering employee base. Last year, NACME was recognized as a UW Laureate, an honor reserved for donors who have contributed more than \$1 million to the University.

Since 1978, NACME has provided significant scholarship support to undergraduate minority engineering students at the University of Washington. Currently, twenty-one UW Engineering students are NACME Scholars; of these, nine are STARS students as well. Due to the impressive results achieved by UW and its engineering students, UW Engineering is a designated Partner Institution and one of ten national Big Study universities. As such, UW Engineering annually collects student data on NACME scholars that help NACME conduct research on student success indicators.

NACME and STARS share a target student population. They also share a common goal: to provide the support needed for minority, including low-income, engineering undergraduates to persist through to degree completion. NACME understands minority students' need for exceptional support in the pursuit of an engineering degree. We have a strong partnership with UW Engineering, which provides complementary student programming and interventions that ensure a high degree of success among minority engineering students.

NACME looks forward to continuing our partnership with UW Engineering as we work together on behalf of minority engineering students. Many thanks for your consideration.

Sincerely,

Irving Pressley McPhail, Ed.D.
President and Chief Executive Officer



SEATTLE CENTRAL COLLEGE

One of the Seattle Colleges

OFFICE OF THE PRESIDENT

1701 Broadway, Seattle, WA 98122
Main 206.934.5417 • Fax 206.934.4390
seattlecentral.edu

April 5, 2016

Naria K. Santa Lucia
Executive Director
Washington State Opportunity Scholarship (WSOS)
1605 NW Sammamish Road, Suite 200
Issaquah, WA 98027

Dear Ms. Santa Lucia,

I am delighted to write this letter of support for the University of Washington's STARS proposal to the WSOS. I am Interim President of Seattle Central College. Before taking this position, I was Vice President for Minority Affairs and Vice Provost for Diversity at the University of Washington for nine years. I have been a longtime advocate for broadening participation in STEM, and the College of Engineering (COE) has been a consistent and diligent partner.

Since arriving at Seattle Central in August 2015, I have been focusing on creating more opportunities for my students. Many want to transfer to UW and I am working with UW leadership on a special project to improve transfer between the Seattle Colleges and the UW Seattle campus. Seattle Central has had a long history of working with UW STEM departments on promoting transfer through two National Science Foundation STEP grants.

I am very familiar with the STARS program and served on the UW's internal advisory board for the program since its inception. My office collaborated with COE and I ensured that all STARS students were eligible for the services of UW OMAD's Educational Opportunity Program. STARS has had a significant impact on increasing the number of economically and educationally disadvantaged students who enter UW as freshmen and successfully gain admission to a UW College of Engineering department. The program has also resulted in increasing the number of underrepresented minorities in the College.

From my perspective, I am particularly excited about the College's plans to increase its support for new transfer students. Dr. Eve Riskin told me that she is dedicating a part of her new Math Academy hire for this purpose. I understand that part of their request to WSOS is to fund a transition week for new transfer students. I strongly support this idea and would be very glad to see my Seattle Central students, who transfer to UW Engineering, participate in the transition week.

It is critical to provide community to students and help them build supportive networks. I am confident that this partnership with UW will strengthen community and support for student success. Please give the UW College of Engineering proposal serious consideration as I look forward to positive outcomes if they are selected for funding.

Sincerely,

A handwritten signature in black ink, reading "Sheila Edwards Lange".

Sheila Edwards Lange, Ph.D.
Interim President



February 10, 2016

Washington State Opportunity Scholarship (WSOS)

Dear WSOS Committee Members:

I am happy to support the letter of interest submitted to WSOS for a College of Engineering-wide Washington State Academic RedShirt (STARS) program. As a member of the STARS advisory board, I am delighted to hear of the focus on significantly increasing the number of economically and educationally disadvantaged (EED) students in Washington who graduate with engineering degrees.

Through our work in the University of Washington (UW) Office of Minority Affairs & Diversity (OMA&D) with diverse and low-income students, it is clear that there is a gap in retention and graduation rates of EED students, especially in engineering. To help these students succeed, it is necessary to develop a multi-pronged approach that includes intensive instructional support, strong advising, community-building, and internship opportunities. The proposed plan to target EED students provides these measures and more in a program that is strategic and effective; one that is made more so with the scholarship support provided by WSOS.

I have very much valued my collaboration with the College of Engineering in support of EED students. We are strong partners on a host of programs that benefit diverse students in engineering including the Pacific Northwest Louis Stokes Alliance for Minority Participation (PNW LSAMP), the TRIO Student Support Services, study abroad programs, the Education Opportunity Program, and a College Assistance Migrant Program (CAMP). In addition, staff from these programs work collaboratively with the STARS staff in the selection and support of the students.

I hope that the College of Engineering's letter of interest is selected for further consideration so that we can work together to increase the number of economically and educationally disadvantaged students receiving Engineering degrees in Washington State.

Sincerely,

A handwritten signature in black ink, appearing to read 'G. Gallardo'.

Gabriel E. Gallardo, Ph.D.
Interim Vice President for Minority Affairs
and Vice Provost for Diversity

April 8, 2016

Ms. Naria Santa Lucia
Executive Director
Washington State Opportunity Scholarship
1605 NW Sammamish Road Suite 200
Issaquah, WA 98027-5388

Dear Ms. Santa Lucia,

As engineering educators and members of the Washington Council for Engineering and Related Technology Education (WCERTE), we are pleased to support the University of Washington's College of Engineering (UW Engineering) submission to WSOS. WCERTE is a grass roots organization composed of representatives from the two-year and four-year engineering programs in the state of Washington. For over 30 years, WCERTE members have worked to enhance the transfer experience of engineering students.


In its service to transfer students, WCERTE is a key partner of UW Engineering. Transfer students have unique needs which, when addressed, result in high retention and degree attainment rates. As outlined, the STARS program will provide an important intervention for transfer students, especially during the beginning of their first upper division year, a critical time for the degree attainment path of this student population.

We applaud UW Engineering's proposal to provide special programming for transfer students and we endorse their application for support. Thank you very much for the opportunity to advocate for the STARS program's support of our all-important transfer students.

Sincerely,



Phillip Andrist
Engineering Instructor
Green River College



Eric Bashan
Professor of Engineering
& Computer Science
Shoreline Community College



Jeff Braun
Engineering Faculty
Olympic College



Eric Davishahl
Engineering Faculty
Everett Community College



Joseph Graber
Engineering Faculty
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Izad Khormae
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Frank Lee
Engineering Chair
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Jeff McCauley
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Charles Mueller
Engineering & Physics Instructor
Edmonds Community College



Su Nelson
STEM Division Outreach, Recruitment,
& Operations Management
Edmonds Community College



Renuka Prabhakar
Part-Time Associate Faculty
Everett Community College



Naria K. Santa Lucia
Executive Director
Washington State Opportunity Scholarship (WSOS)
1605 NW Sammamish Road, Suite 200
Issaquah, WA 98027

Dear Ms. Santa Lucia,

I am delighted to provide this letter of support for the University of Washington's STARS program.

I first learned of the UW's STARS program when I met Dr. Eve Riskin, the College of Engineering's Associate Dean for Diversity and Access, at a WSOS roundtable discussion led by WSOS Board Chair Brad Smith in May 2013. Professor Riskin had just been awarded the National Science Foundation grant to fund STARS and spoke up about the need to support low-income students to gain admission to Engineering at UW. I later ran into her when our sons played against each other in a soccer game.

I am very supportive of STARS because it is providing the wraparound support that complements the financial and academic support of the WSOS. The results to date have been impressive, with STARS students outperforming more affluent students in the classroom. I am delighted to hear that STARS is being considered for WSOS's Opportunity Expansion Fund to increase the numbers of students receiving STARS interventions and graduating with engineering and computer science degrees from UW.

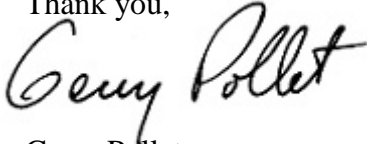
I have been deeply involved in promoting state investment in the academic success of low income and first generation students, both in the state budget and in collaboration with the Washington Student Achievement Council (WSAC) and our higher education institutions. Recent data show we continue to have a very wide gap between Pell recipient graduation rates and graduation rates at our state's colleges and universities. Research elsewhere shows significant improvements when the types of support and advising services which are part of STARS are provided students, adding to the importance of continuing STARS as a model which we may replicate in other programs statewide.

When the WSOS and NSF funding concludes, it is important that STARS continue. I believe there is a significant case to be made for the Legislature to consider providing long-term support. The Higher Education Committee has expressed strong interest in improving student success support in Washington and has supported related legislation for this in the past. I intend to pursue new legislation for additional student support services for college students in Washington

and plan to include STARS, both at UW and Washington State University, due to its proven record of providing effective support to the lowest-income students in Washington.

I encourage you to strongly consider Professor Riskin's proposal. I am confident that if it is selected for funding by WSOS, our state's students will be better enabled to achieve their potential as a result of your investment.

Thank you,

A handwritten signature in black ink that reads "Gerry Pollet". The signature is written in a cursive, flowing style.

Gerry Pollet
Washington State Representative, 46th District
Vice-Chair of the House Higher Education Committee;
Commissioner for WA, Western Interstate Commission on Higher Education (WICHE)

WSOS-STARS' WRAPAROUND SUPPORT ITEMS

Year 1 Students

Personal Growth & Personal Development

- Mindset of a Champion (Importance that grit and hard work play in success)
- Making Good Choices (Importance that daily and moment-by-moment choices play in success. Stories around: "Have you made good choices today?")
- Strengths & Skills (Dependable Strengths Workshop)
- Self-Exploration (MBTI and Dependable Strengths Workshop)
- Reflection: Defining and utilizing as a decision-making tool
- Personal Growth and Student Development: Self-Assessment and How Am I Doing?
- Differences Between High School & College
- General Health and Wellness
- Stress and the College Student
- Utilizing the counseling center and disability resources when needed

Study Skills Development

- How to Strive to Become a Master Student
- Metacognition and the Teaching/Learning Process
- The Importance of Learning How To Learn
- Creating and Utilizing a Weekly Schedule
- How to manage your time So it does not manage you
- Starting and Maintaining an Effective Study Group
- Understanding and Overcoming Procrastination
- Effective Listening and Note-Taking
- How to Read a Textbook
- Utilizing The UW Writing Center
- Rules for Classroom Success in College
- Academic Misconduct
- How to Find the Perfect Study Space(s)
- Utilizing Tutoring Services on Campus (The EAC, IC, C.L.U.E., etc.)

Professional Development

Completion of UW Career Center's Career Success Certificate- Components of certificate:

- ✓ Creating A Resume
- ✓ Strengths and Skills
- ✓ Self-Exploration
- ✓ Finding Jobs and Internships
- ✓ Career Exploration
- ✓ Networking
- ✓ Exploring Research Opportunities
- "Soft Skills" presentation by CH2M HILL and presentation of certificates to students by UW Career Center and CH2M HILL representative.
- What is Engineering?
- Interdisciplinary-ness of Engineering
- Broadening Your Education: Participation In Student Organizations, Study Abroad, more
- Etiquette Dinner
- Giving Back (Volunteering at Discovery Days)

- Navigating Career Fairs
- Students are introduced to student societies and organizations
- Microsoft visit in the fall quarter during transition week
- Boeing visit to flight simulator in the spring
- All College of Engineering Departments visit the STARS seminar in the winter quarter
- Special session, outside of class with at least one department each year; includes student and faculty panel (this year was Electrical Engineering)

Academic Support and Development

- Meet with STARS adviser at least twice per quarter for the first year and most students meet with adviser more than this minimum.
- Meet with pre-engineering adviser in spring to develop a 5 year plan and transition into 2nd year
- Meet with department adviser in spring to develop 5 year plan and if available attend department info session
- Making the Most of Your RedShirt Year: The 5 Year Academic Plan (presentation by pre-engineering advisers)
- What Works is Work: There Is No Math Gene

Grades and progress are regularly monitored:

- ✓ Students taking workshops must submit quiz and midterm grades (math, chemistry and physics) to workshop instructors
- ✓ STARS math and chemistry instructors have close relationships with math and chemistry department faculty and work closely with them to monitor grades.
- ✓ STARS adviser works very closely with STARS instructors in monitoring grades and determining what academic or personal support individual students may need, at any given point in time during the first year (grades are reported regularly to adviser in both the prep courses and all workshops).
- ✓ At the end of each quarter, STARS adviser checks grades for students and when necessary works with individual students to improve in the coming quarter.
- Required tutoring for math, all three quarters; typically two sessions per week, two hours per session. Tutors also work very closely with adviser to assist in monitoring student progress and making changes as needed for individual and group advancement.

Academic Prep Courses

- STARS Problem Solving Math Prep Course (FALL)
- Math Workshops: Complete Calculus series (Math 120—126; Math 307/308)
- STARS Chemistry Prep Course (WINTER)
- Chemistry Workshops: Complete General Chemistry Series (Chem 142; 152)

Community Building

- A parent meeting is held on the Sunday when students arrive to begin transition week.
- Transition Week Activities (including working together and getting to know each other through: forming study groups, a downtown Seattle outing, a ropes course, collaborative time management exercises, and introduction to math problem-solving)
- Annual “Bowling With The STARS” event in which the previous cohort plans in honor of the incoming cohort and all cohorts attend.
- Community-wide Etiquette.
- STARS Facebook page: maintained by the students and periodically checked by the STARS Graduate Student Assistant.
- Students must live on campus for the first two years and all live in the Engineering Community.
- Students are cohort-ed for all classes during the first quarter and then also for the regular (non-STARS) math and chemistry courses and corresponding workshops.

Year 2 Students

Study Skills Development

- Students are strongly encouraged to attend College of Engineering study skills development workshops. Four workshops are offered per quarter:
 - ✓ Learning how to learn
 - ✓ Time management
 - ✓ Test taking strategies
 - ✓ Managing stress and test anxiety
- “Intensive” students are regularly encouraged, by advisers, to revisit study skills info from STARS seminars; especially the book “Studying Engineering” by Raymond Landis.
- Students are provided with info on available study resources (EX: tutoring, writing center, EAC, IC, etc.) [Study Skills Resources List].
- Students are strongly encouraged to attend professor office hours and develop genuine relationships with faculty.

Professional Development

- Students are encouraged by adviser to effectively utilize the College of Engineering Career Center on a regular basis to update resumes, search for internship opportunities, conduct mock interviews, etc.
- Students are encouraged by adviser to attend College of Engineering Internship Fairs and explore opportunities by utilizing the Research Undergraduate Program Office.
- Annual Etiquette Dinner
- College of Engineering Career Center local industry visits just for STARS/WSOS students.
- College of Engineering Career Center career related workshops just for STARS/WSOS
- College of Engineering Career Center internship-related workshops just for STARS/WSOS

Academic Support and Development

- Meet with STARS adviser at least twice per year during the second year; fall and spring.
- Any student, who falls below a 3.00 quarter or a 3.00 cumulative GPA, may be required to meet more frequently with the adviser and may have other additional requirements.
- Students are encouraged to meet with department adviser at least once per year to go over their 4 or 5 year plan and make sure they are on track for graduation.
- Grades and progress are regularly monitored
 - ✓ Students taking workshops must submit quiz and midterm grades (math, chemistry and physics) to workshop instructors
 - ✓ STARS adviser works very closely with STARS workshop instructors in monitoring grades and determining what academic or personal support individual students may need (grades are reported regularly to adviser all workshops).
 - ✓ At the end of each quarter, STARS adviser checks grades for all students and when necessary works with individual students to improve in the coming quarter.

Academic Prep Courses

- Students will continue through the 2nd year to take all appropriate and/or required academic workshops:
 - ✓ Math Workshops: Complete Calculus series (Math 120—126; Math 307/308; Math 301)
 - ✓ Chemistry Workshops: Complete General Chemistry Series (Chem 142; 152; 162)
- Students on the “intensive-track” will take the STARS/WSOS Physics Prep Course and related physics workshops.

- Other students will take the physics workshops: Physics 121; 122 as needed.
- Additional Workshops Offered But Not Required: AA 210 and ME 230

Community Building

- Annual “Bowling With The STARS”
 - Community-wide Etiquette.
 - STARS Facebook page: maintained by the students and periodically checked by the STARS Graduate Student Assistant.
 - Students must live on campus for the second year and must live in the Engineering Community.
 - Students are cohort-ed for the STARS Physics Prep course and then also for the regular (non-STARS) math and chemistry courses and corresponding workshops.
-

Years 3-5 & Community College Students

Study Skills Development

- Students are strongly encouraged to attend College of Engineering study skills development workshops. Four workshops are offered per quarter:
 - ✓ Learning how to learn
 - ✓ Time management
 - ✓ Test taking strategies
 - ✓ Managing stress and test anxiety
- Students are regularly reminded to refer to Study Skills Resources
- Students are reminded of importance of seriously cultivating relationships with faculty

Professional Development

- Students are encouraged by adviser to effectively utilize the College of Engineering Career Center on a regular basis to update resumes, search for jobs, internship opportunities, conduct mock interviews, etc.
- Students are strongly encouraged to explore and obtain research opportunities
- Students are supported by College of Engineering Career Center in attending and utilizing Engineering Career and Internship Fairs
- Students are strongly encouraged to become actively involved in engineering societies and organizations
- College of Engineering Career Center local industry visits just for STARS/WSOS students.
- College of Engineering Career Center career- related workshops just for STARS/WSOS
- College of Engineering Career Center internship-related workshops just for STARS/WSOS

Academic Support and Development

- Students are reminded and encouraged to develop and maintain a strong relationship with their department advisor.
- Students are encouraged to meet with department adviser at least once per year to go over their 4 or 5 year plan and make sure they are on track for graduation.
- Any student, who falls below a 3.00 quarter or a 3.00 cumulative GPA, may be required to meet with the WSOS/STARS adviser and may have other additional requirements.
- Grades and progress will continue to be regularly monitored
 - ✓ Students taking workshops must submit quiz and midterm grades (Math 307/308, AA 210) to workshop instructors
 - ✓ At the end of each quarter, STARS adviser checks grades for all students and when necessary works with individual students to improve in the coming quarter

Academic Prep Courses

- Students will continue through the 3rd year to take all appropriate and/or required workshops (Math 307/308, AA 210)
- STARS Intensive students will take physics 122 and the corresponding workshop in the fall of the 3rd year

Community Building


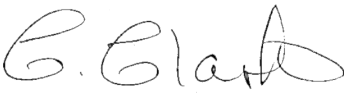
- Annual “Bowling With The STARS” event in which the previous cohort plans in honor of the incoming cohort and all cohorts attend
- STARS Facebook page: maintained by the students and periodically checked by the STARS Graduate Student Assistant.
- Students are cohort-ed for physics 122 in the 3rd year

STARS PROPOSAL: Services offered with "Career Center @ Engineering" (revised 05/18/2016)

	EVENT	DESCRIPTION	TARGET YEAR	# OF STARS STUDENTS SERVED	AUT	WIN	SPR	SUB	TOTAL
ETIQUETTE / NETWORKING	Etiquette Dinner	Opportunity for 80 students to network with 12 sponsors/alumni while learning proper etiquette via a keynote speaker over a three-course meal at the UW Club. Costs covered include dinner, parking for mentors.	Years 1-2	80		\$ 3,500		\$ 3,500	\$ 10,000
	Networking Breakfast	An informal breakfast where alumni can share career information and advice to current students. A keynote speaker and/or panel will also speak about a pertinent & timely topic.	Years 1-5	150	\$ 6,500			\$ 6,500	
INDUSTRY VISITS	Career Trek - Seattle	(x6) Single-day corporate visits. Group size of 12 students (w/ two chaperones). Costs include lunch, transportation, planning time.	Years 2-4	72	\$ 1,500	\$ 1,500	\$ 1,500	\$ 4,500	\$ 6,000
	Career Trek - Tacoma	(x2) Single-day corporate visits. Group size of 12 students (w/ two chaperones). Costs include lunch, transportation, planning time.	Years 2-4	24	\$ 1,500			\$ 1,500	
INTERNSHIP PROGRAMMING	Internship workshop #1	Two-hour workshop geared towards FINDING an internship (e.g., resumes, cover letters, search techniques). Cost includes panel of previous interns (current students & new hires, cover guest parking), planning (~5% of Associate Director's time) & refreshments	Year 3	50	\$ 3,300			\$ 3,300	\$ 6,500
	Internship workshop #2	Two-hour workshop geared towards SUCCESS DURING an internship (e.g., 12-week plan, informational interviews, performance management). Cost includes planning (~5% of Associate Director's time) & refreshments	Year 3	50			\$ 3,200	\$ 3,200	
CAREER PROGRAMMING	STARS workshop #1	One-hour workshop geared towards RESUMES & COVER LETTERS. Part of Winter Quarter course & "Career Success Certificate" for current redshirt (Year 1) cohort. Cost includes presentation planning & two appointments per student	Year 1	30		\$ 3,500		\$ 3,500	\$ 12,000
	STARS workshop #2	One-hour workshop geared towards NETWORKING. Part of Winter Quarter course & "Career Success Certificate" for current redshirt (Year 1) cohort. Cost includes presentation planning	Year 1	30		\$ 2,000		\$ 2,000	
	Career workshop #3	One-hour workshop geared towards CAREER & MAJOR EXPLORATION ("Dependable Strengths," MBTI, job search, post-graduation options, grants/scholarships)	Years 2-3	50	\$ 2,000			\$ 2,000	
	Career workshop #4	One-hour workshop geared towards INTERVIEWING (structure, sample questions)	Years 3-4	50		\$ 2,000		\$ 2,000	
	Career workshop #5	One-hour workshop geared towards FINANCIAL SAVVINESS (offer negotiation, finances after college, paying for grad school). Cost includes potential consultation/fee for speaker	Years 4-5	50			\$ 2,500	\$ 2,500	
								TOTAL	\$ 34,500



Opportunity Expansion Fund
Cover Sheet

Date of Application	April 15, 2016
Name of Institution	Western Washington University
Department	Computer Science
Address	WWU - Computer Science Dept 516 High Street Mail Stop 9165 Bellingham, WA 98225
Proposal Contact Person	Perry Fizzano Chair, Computer Science Department perry.fizzano@wwu.edu 360.650.3807
Total Dollars Requested	\$2,000,000
Names of university administrators or senior staff members who are responsible for committing the institution to this proposal	Dr. Brent Carbajal, Provost Dr. Catherine Clark, Dean
Signatures of personnel responsible for committing the institution to this proposal	 

1. Describe the Problem and Intended Impact of WSOS Funds

The Computer Science Department at WWU is requesting funds to handle the continued increase in the number of students interested in majoring in computer science. Our increase in capacity will ultimately add 35 graduates per year (26% growth). Further, the funds requested will also support the creation of a pathway for future teachers to obtain the new K-12 CS endorsement and the continued production of K-12 teachers with CS endorsements.

We have grown from an average of 45 graduates per year (2004-2011) to a projected 115 graduates in 2015-16 and 135 graduates in 2016-17. Our ability to handle this increase was a direct result of a decision package that WWU received from the state of Washington in 2013 that enabled us to hire five new tenure-track faculty members. In our proposal to the state that year, we promised we would triple the number of CS graduates per year to a total of 135 – a goal we should reach next year. However, there is continued increasing demand from both native WWU freshmen and transfer students that could easily take us up to 170 graduates per year.

Last fall we received a record number of 72 transfer students interested in CS up from an average of 25 per year. These extra students have created a traffic jam in the pipeline this year causing many first and second year students to be unable to take the CS classes they needed for at least one quarter. There was also a record number of 209 first year students who selected computer science as a major interest when they enrolled last year (this year's numbers are not yet complete). We also accommodated a record number of 400 students in our introductory CS course over the past year. No matter how we look at it we're capable of growing beyond 135 graduates without any special recruiting efforts.

This influx of growth creates several problems if not properly managed. The main problem is that current students compete for limited seats in introductory classes which has a cascading effect. If the students unable to take introductory classes this year choose to take them next year then that will force more students next year to wait to take introductory classes. Another problem is that all of this eventually leads to a greater time-to-degree for our students which leads to more student debt.

The **immediate impact** (under 1 year) of receiving money from the Opportunity Expansion Fund (OEF) is that we will be able to hire four new faculty within a year and make modest capital improvements to our facilities within a year to handle the growth proposed herein. One **short term impact** (1-2 years) of the funds is that we will be able to better handle the increased interest especially at the introductory level. Finally, the **medium term and long term impacts** (2 years and beyond) are that we will begin graduating more students with a degree in CS, and we will begin graduating pre-service teachers who are endorsed to teach computer science in high school.

All of these impacts will be sustained because WWU administration has agreed to pick up the funding for all of these new faculty positions after three years of support from OEF. This commitment will let us immediately search for new permanent tenure-track faculty members (for which we have been very successful in hiring over the past few years) instead of temporary faculty (for which we have found very few good candidates in this competitive job market).

2. Interest in OEF and Importance of Receiving Funds Now

We are interested in funding from OEF to handle the steadily increasing student demand for CS degrees

by hiring four new faculty and making modest capital improvements to accommodate this growth in our current building.

The funds are important to receive now for several reasons. First, the promises that we make in this document regarding growth are not hypothetical, the projected growth is made up of students already on campus or planning to come to campus next year. Also, Washington's new CS K-12 endorsement is approved and WWU's Center for Science Math and Technology Education (SMATE) needs help in commencing work with pre-service teachers to get them prepared to teach computer science in Washington high schools. In turn, this effort will add capable computer science students to the high school to university pipeline.

If we do not receive funds now, current and soon-to-be WWU students will be driven towards other majors, or they will see a significant increase in their time-to-degree, or they will choose a school other than WWU which is recognized as an excellent CS program. When this academic year is complete we will have turned away about 10% of the students who applied to enter the CS major this year as sophomores because of space limitations in the major (in effect reducing the graduating class of 2018 by about 20 students). We planned for growth up to 135 graduates per year which we will reach next year but we can't expand beyond that without more faculty.

Given continued growth, our current cap of 135 graduates per year will lead to a greater percentage of students denied entry to the major in subsequent years. Continued growth will also create a vicious cycle of increased wait lists and longer time-to degree creating even larger wait lists and so on.

A similar thing happened with WWU's Kinesiology program. A few years ago they had tremendous enrollment pressure and thus had to restrict access to their major. Native students were delayed in taking required courses. Transfer students were told that they would suffer long delays if they came to WWU. The program eventually addressed their shortage of faculty and space. But the word got out that the program had developed incredibly competitive entry requirements and time-to-degree had substantially increased. This past year they were under-enrolled as a backlash of the slow response to addressing the situation. We do not want to repeat history in computer science and are thus in need of this money now to address the looming enrollment issues swiftly before we suffer negative impacts.

3. Program Description

The basic elements of the proposed expansion program are to (1) make modest capital improvements to increase faculty office space and lab space for students, (2) hire two new CS faculty specializing in CS education which will help with the endorsement of future K-12 teachers as well as improving the introductory CS curriculum at WWU, (3) hire two other new CS faculty at least one who specializes in computer systems or security.

This proposal, if funded, will lead to:

- an increase in CS faculty office space, CS conference room space, and CS student lab space;
- an increase of CS faculty to address state-wide, university and departmental needs;
- an increase in CS graduates from a high-quality program;
- a first wave (and continuing waves) of CS-endorsed K-12 teachers;
- continued improvement of our introductory CS sequence to benefit WSOS-like students

3.a. Program Outcomes and Time Line

3.b. Program Activities and Time Line

If the CS Department at WWU is awarded funding for this proposal in June 2016, the following outcomes, in bold, will be achieved in the given time frame.

i. Make minor capital improvements to increase space for: faculty offices, conference room, student labs	
Planning begins	July 2016
Completion by	July 2017
ii. Hire four new tenure-track faculty	
Advertisement	July 2016
On-campus interviews	Jan – Mar 2017
Start date	June – Sept 2017
iii. Increase capacity / graduation rates	
Add extra capacity in courses for CS major	Sept 2017
Increase of 35 CS graduates (to 170 total)	June 2019
iv. Prepare pre-service teachers for K-12 CS endorsement	
Begin working on pathway to endorsement	Sept 2017
Begin graduating pre-service teachers endorsed for CS	June 2019
Graduate 10 pre-service teachers per year endorsed for CS	June 2020

The proposal outlined in the table above is discussed in greater detail below.

i. Minor capital improvements

The modest capital improvement project for which we request funds is **absolutely required** to enact this proposal. We currently have no empty faculty offices. Our lab space is becoming inadequate for our current students. Our conference room is undersized for the current number of faculty and staff. We're scraping by with our current facilities but could not possibly accommodate growth without the renovation of space described in this proposal.

These are not new issues. We've been trying to address them for a while through the university's channels where we can request funds for minor capital improvements but money has not been allocated to this request. We will go over our minor capital request in more detail in the budget section.

ii. Hire faculty

We plan to hire four new faculty, two who specialize in CS Education and two others, at least one of whom will specialize in Computer Systems or Security.

The two new CS Education faculty will have a joint appointment with the CS Department and WWU's Center for Science Math and Technology Education (SMATE). This arrangement of two faculty

holding joint appointments in a WWU science department and in SMATE has successfully worked in Physics, Biology and Chemistry. We will be mimicking that model in Computer Science.

As part of their SMATE duties the two new CS/SMATE faculty will work with SMATE leadership to develop pathways to the new CS K-12 endorsement. They will also prepare pre-service teachers in WWU's Woodring College of Education for obtaining a CS endorsement.

As part of their CS duties the two new CS/SMATE faculty will primarily help us continue to refine and assess our introductory sequence of courses. Active learning techniques, paired programming, flipped classrooms and structured group work are all being employed currently in our intro courses. However we are excited to continue to refine and assess our pedagogical methods and two new faculty specializing in CS education would provide additional expertise in this process.

The other two new CS faculty will include at least one who specializes in computer systems or security which is an area of great student interest and industry need and would allow us to build on our existing faculty expertise in this area.

We have been very successful over the past three years hiring excellent tenure-track faculty. Last year when we successfully hired three new faculty, we had a very deep pool and brought fifteen highly-qualified candidates to campus for interviews. We are confident in our ability to recruit excellent faculty who will maintain the high standards we have set.

iii. Increase course capacity and CS graduates

Once we hire new faculty we will immediately address wait list issues in our sophomore courses by offering more sections of the courses needed to declare the CS major. The following year we will offer more upper division courses. This plan will enable us to bring 35 more students into the major soon after hiring new faculty and we will graduate those extra students within two years.

iv. Prepare pre-service and in-service teachers for K-12 CS endorsement

As stated above, the two new CS/SMATE faculty will be instrumental in the creation of pathways to a K-12 CS endorsement. Once hired, the new faculty will work with SMATE leadership to establish pathways to endorsement then they will start preparing current students in our school of education to obtain this endorsement leading to 10 new pre-service teachers per year with the K-12 CS endorsement.

Beyond the pre-service teachers there will also be a need for professional development workshops for in-service teachers. We are not asking for support from the OEF to run such professional development workshops. However, we will definitely be pursuing funds from other sources to provide workshops so that current teachers can begin incorporating computational thinking and applying computer science principles in their current classes.

All of this will lead to an enhanced pipeline of high school students who are interested in and prepared for studying computer science in college. This is sorely needed in our state as everyone who is reading this proposal already knows.

3.c. Internships

There are no internships required for a CS degree at WWU. However, several representatives from local tech companies have submitted letters regarding their desire to see more WWU CS graduates and their success in employing graduates from WWU. Time was my only obstacle to having twice as many letters of support.

3.d. Who will benefit – student demographics

This proposal, if funded, will benefit all students at WWU who pursue CS degrees. However, we want to point out the specific actions we've taken over the past several years to increase the participation and success of WSOS-like students.

We have almost a year left on a \$590K National Science Foundation (NSF) S-STEM grant aimed at graduating more women with financial need in CS and Math for which I am the principal investigator. This S-STEM grant has enabled us to implement some best practices and develop a few new practices of our own to address issues related to underrepresented groups in CS. This grant enabled us to start offering a first year seminar course. This course has resulted in several women pursuing a CS degree who initially came to WWU to pursue a different degree. We also started having monthly events focusing specifically on issues related to diversity, professional development, internship opportunities, and career guidance. We are planning to submit a new proposal to the NSF S-STEM program for \$1M. This grant will be focused on removing barriers to success for financially needy students. If funded the grant will have an educational researcher on staff who will employ a mixed methods assessment to determine the effectiveness of departmental curriculum and activities in the success of underrepresented and financially needy students. Both the current NSF grant and the proposed grant, if funded, will enable us to better serve WSOS-like students.

Over the past few years we have strengthened a free, drop-in tutoring program run by advanced CS students for less experienced students. The Dean of the College of Science and Engineering has just committed to fund our tutoring program when the grant currently supporting the program is set to expire. This tutoring program serves hundreds of students each quarter and is especially helpful to close the “experience gap”. The experience gap refers to the knowledge gap that develops between high school students from different economic and educational backgrounds. Closing this gap is essential to promote success of WSOS-like students and we have many efforts in place and can implement more research-proven approaches if funded by OEF that will help WSOS-like students succeed.

Several of our faculty have participated in teaching workshops over the years. Three of our newer faculty have been participating in a multi-year program run by WWU's SMATE which was awarded a multimillion dollar NSF grant three years ago. The program funded by this grant is focused on employing student-centered learning activities in our courses and increasing diversity in STEM. Students are commenting positively on their evaluations with regards to active learning. Some techniques are now permeating through the department to other faculty. Research shows that student-centered learning will increase the retention and ultimate success of WSOS-like students.

All of the above has led to an increase in retention from CS 1 to CS 2 to CS 3. It has also led to an increase in the representation of women in our department. Five years ago 10% of our graduates were women, this year over 20% of our new majors are women.

But we're not satisfied yet. WWU's CS Department was recently accepted into the National Center for Women in Information Technology's (NCWIT) Pacesetters program. Our acceptance this year (in the most competitive applicant pool NCWIT has ever had) is a testament to our past work and our desire to improve. Through the Pacesetters program we will work with social scientists at NCWIT and colleagues from other universities and industry to take measurable steps toward greater representation and success of women in the major. Research says that the techniques that lead to an increase in women will also lead to an increase in minority and first-generation students as well. Our involvement in Pacesetters will only increase our ability to effectively serve WSOS-like students.

3.e. Services for WSOS and WSOS-like Students

Note that we are not requesting funds for anything in this section. This section is simply a statement of the extensive supporting services that we already provide in the department which benefit all students but especially WSOS-like students.

We have a very effective advising program in place for all of our students. Mary Hall serves as our full-time academic advisor solely for students interested in computer science prior to their declaration of a major. She is very engaged with students early in their academic career and has been an instrumental part in our recent growth spurt by reaching out to students at risk of failing and helping them get back on the path to success. Once students declare the major they are assigned a faculty advisor who works with the student through graduation. Our retention rate is almost 90% from the time when students enter the major through graduation.

As stated above our free drop-in tutoring program is highly utilized by students. Next year the college has committed funds to creating and administering a yearly training course for our tutors and teaching assistants. We are constantly assessing the effectiveness of our tutors and teaching assistants and will begin to assess the training course as well.

Another element of our department that has been especially important in helping underrepresented groups thrive is our Association for Women in Computing (AWC) club. This club has been very active in advocating for and supporting departmental change aimed at making the climate more welcoming and inclusive to all students. The AWC runs many professional development events, they regularly encourage students to participate in conferences and networking events, and they perform considerable outreach with local middle and high school students. The AWC leadership and membership is always composed of several WSOS scholars and does a great job of promoting WSOS scholarship to others.

As part of a department initiative three years ago we ran a focus group with women in the department. As a result of that, the faculty instituted a "new major orientation" for all new majors in the department. This orientation has done wonders for elevating the level of discourse in the department around diversity issues. Over the last two years I've personally been part of a conference presentation, the publication of a research paper and three poster presentations on the topic of increasing diversity. While our department has successfully employed some standard best practices we have also developed novel approaches and shared those new ideas with the CS, engineering and math education communities through these publications and presentations. One of our novel developments that has received the most attention is our new major orientation.

In our experience the students who benefit the most from these services are those with little prior

experience in computer science and these are generally students from underrepresented backgrounds. Thus, while none of the efforts listed in this section will be services funded by the OEF they will still be instrumental in serving WSOS-like students.

4. Budget for proposed projected

Hire four new tenure-track faculty (3 years)	
a. Salary (4 fac for 3 yrs)	\$80K * 4 * 3 = \$960K
b. Fringe (4 fac for 3 yrs)	\$80K * 35% * 4 * 3 = \$336K
c. Library funds (4 fac for 3 yrs)	\$10K * 4 * 3 = \$120K
d. Recruiting costs for 4 faculty positions	= \$24K
e. Start-up funds for 4 new faculty	\$45K * 4 = \$180K
TOTAL FACULTY	\$1.62M
Minor capital improvements	
f. Renovation of conference room into 3 offices	= \$150K
g. Renovation of lab into conference room	= \$40K
h. Expansion into new space for new CS lab	= \$190K
TOTAL CAPITAL	\$380K
TOTAL BUDGET	\$2M

Budget Justification:

a, b) These lines are for faculty salary and fringe benefits. This salary is just below the median level for new CS faculty nationwide at Masters granting institutions similar to WWU but it is in-line with our recent faculty hires in CS at WWU.

c) This line supports library acquisitions and the ongoing costs for digital subscriptions to research publications that all faculty make use of. This dollar amount is consistent with how much we allocated from the decision package money in 2013 to library funds for each new faculty hire for the last three years. We are satisfied with this level of allocation because it is effectively supporting faculty needs for access to publications and provides support for undergraduate students, for instance, by allowing us to purchase language corpora for natural language processing courses and projects.

d) Recruiting costs include 90 day ad placements in national publications and websites. More significantly it also includes transportation and lodging for two-day, on-campus interviews for each finalist. On average we have interviewed 5 finalists per open faculty position in our recent searches.

e) Start-up funds for new faculty allow faculty to purchase equipment to advance their research program (and all of our recent faculty hires regularly engage undergraduates in research). Start-up funds are essential to recruiting great faculty and \$45K is comparable to what we've awarded to recent hires. I expect the total allocation requested will not be divided equally among all faculty hires since the computer systems faculty will likely need more start-up funds than education-focused faculty to support their research.

f) This money is to convert our current conference room into three windowless offices. These offices will be used by temporary faculty, some of whom are in windowed offices currently (their current windowed offices will be used for the new permanent faculty). The cost estimate comes from our Director of Space Administration (DSA) and includes soft costs, permitting, design and the installation of a couple walls and doors in our current conference room.

g) Our current conference room is not serving our needs because it's just too small for our department. It comfortably seats 18 but we have 23 faculty and staff (and will grow to 27 if this

proposal is funded) and many times we have visitors attend department meetings which results in people sitting on cabinets or standing. Thus, item (f) above sacrifices our conference room to turn it into three offices. In turn, we will remodel a current lab space and make it a functional conference room for our department. Our current conference room is currently used over 20 hours per week for events such as: biweekly departmental faculty/staff meetings, monthly club meetings, weekly research group meetings, weekly graduate seminar, weekly senior project group meetings, yearly advisory board meetings, monthly group advising sessions, and a weekly technical seminar often with virtual attendees interacting with WWU students and faculty. This room is highly-utilized and is an essential hub of scholarly activity in our department. Relocating our conference room will allow us to size it to our current needs (and have some room for expansion) and meet our needs better. The cost estimate comes from our Director of Space Administration and includes soft costs, permitting, design, and new carpet.

h) This is our expansion space (to be clear, items (f) and (g) are repurposing rooms we already use). The CS Department at WWU is on a separate network from the rest of campus for pedagogical reasons. Thus, the process of converting a current general-purpose computer lab to a CS-specific computer lab requires running wire as well as purchasing and installing new network switches and computers. This lab space is the easiest and cheapest to convert of any on campus because it is right across the hall from one of our current labs. Thus, cabling will be relatively cheap and simple. Hardware for the network infrastructure and new computers are covered in this line item along with some new furniture. The new lab will have 50 seats / computers and will result in an increase of 22% in CS dedicated lab space. Beyond just the net increase in CS lab seats, this new space will actually be our most effective teaching space that allows students to sit in front of computers during a class (a technique that some faculty employ regularly for hands-on activities in certain classes). Thus, this new lab space will not only increase the number of seats for CS students to work on projects and assignments but will allow us to implement more hands-on activities in several classes. All of this will positively impact our students' educational experience.

Our preferred time line for distribution of funds is as follows:

July 2016	June 2017	June 2018	June 2019
\$404K	\$652K	\$472K	\$472K
For items d, f, g, h	For 1/3 of items a, b, c and all of item e.	For 1/3 of items a, b, c	For 1/3 of items a, b, c

Leverage Dollars from within WWU: The Dean of the College of Science and Engineering has pledged the following additional support if we obtain funds from OEF: (1) one full-time office support staff to supplement our current staff and (2) one new permanent technical staff position which is currently filled by temporary staff and (3) funding a small renovation to move our current mail room into a smaller room to allow our current mail room to serve as a windowless faculty office. This amounts to almost \$150K in salary plus fringe benefits per year for the two staff positions plus \$20K in one time funds for the renovation.

5. Sustaining the proposed project

All of the activities proposed will be sustained because the Provost has agreed to fund our new faculty positions after OEF funds them for three years. The reason these funds are so helpful to us now is that they create a bridge to the time when the Provost can allocate permanent resources to aid in the growth of the CS Department.

6. Employer commitment

Several employers have stated support for our expansion and these are attached.

7. Continuous assessment and improvement

Because WWU's CS Department is ABET-accredited we have a continuous assessment and improvement plan in place for our department. The CS Department is regularly used as an example at the university level when we have discussions about university-wide accreditation. The CS Department's continuous improvement plan includes evaluation of student success, consideration of student course evaluations, feedback from our industrial advisory board, focus groups with students, exit interviews with graduates, surveys of recent graduates, and assessment of all levels of the curriculum on a six year rotating cycle.

We have also recently improved our department's evaluation plan for new faculty. We have a much more clear and robust plan for new faculty evaluation, mentoring and continuous improvement.

Thus, we believe we can incorporate four new faculty into our department because we have a strong mentoring program and established evaluation processes in place. Funds from the OEF would lead to a long-term and high-quality expansion of WWU's CS Department.

8. Top three challenges

The influx of students seems infinite. Last year at this time we thought we were sitting pretty. We were going to have three new faculty starting in the following September and would have more offerings of core and elective classes in 2015-16 than ever before. Then we got a record number of 72 new transfer students for fall quarter. There were 400 first-year students who took our introductory programming course for CS majors this year, which is more than ever before. A record number of 209 incoming freshmen last year selected computer science as a preferred major. Moreover, a higher percentage than years' past of those students taking an introductory programming class want to major or minor in CS. Thus, we are now in a similar position with wait lists and student demand as we were four years ago, before we hired 6 new faculty. It's overwhelming. So the biggest challenge just seems to be managing the increasing student demand. At least we now have all the processes in place to manage growth if we need to restrict our number of majors.

Recruiting new faculty is not so much of a challenge as it is a labor intensive effort. We have been extremely successful over the past three years in hiring high-quality faculty. Bellingham and Western are great draws for quality of life and reputation of the university. Being close to Seattle helps recruiting CS faculty in terms of the wealth of potential professional contacts (we have several faculty who regularly collaborate with Seattle-area colleagues and this is very appealing to many new faculty). However, we have lost some great candidates to industry because of the competitive job market. Recent surveys by the Computing Research Association shows that a majority of PhD's in CS are going into industry instead of academics. In fact the difference between the percentage of CS PhD's who go into industry and the percentage who go into academics is at an all time high and rapidly increasing. While we are confident in our ability to recruit quality faculty, it is not easy by any stretch and takes hundreds of hours of collective effort on the part of our faculty and staff.

The final challenge we want to briefly mention is that we are extremely conscious that setting an increasingly high bar for admission to the major (based on performance in introductory classes) can negatively impact diversity and WSOS-like students. This is not to say that students from diverse or underprivileged backgrounds are weaker students. It simply says that the criteria we use to admit students is based on performance in early CS courses and students with some prior experience often have a slight advantage using that criteria. We are asking for expansion funds so that we do not have to turn away capable students who are still “getting their feet under them”. There have been many students over the years who have graduated with a C average who are highly successful in industry. If we had imposed our current bar for admittance to the major we would have turned those students away and denied them the chance for economic upward mobility because of their weaker performance in early courses. We want to serve those students and help them succeed and fulfill our mission.

9. Graduation and job placement rates

Once students are accepted into the CS major over 80% of them obtain a CS degree within 2 years, under 10% require longer than 2 years to complete (often times these students take time off for personal or family reasons), and under 10% end up completing a different degree at WWU or leave WWU permanently.

Alumni surveys show that over 90% of our CS graduates are employed in a job related to their degree or are pursuing graduate studies in computer science. Most of our graduates remain in Washington.

10. Letters of support – see attached

11. Student metric sheet – see attached

Summary – In simple terms, the growth that we're seeing in the CS Department at WWU is unprecedented in our history and is outpacing the university's ability to address it. The decision package we received from the state in 2013 created a much needed significant influx of base funds for CS and we have been good stewards of that money by hiring new faculty and tripling our number of majors and graduates as we promised. However, we continue to see increased student demand so we are once again in need of an injection of funds. WWU can't quickly solve this problem internally (e.g. there is internal money for only one new additional faculty position in our entire College of Science and Engineering this year). We are excited at the potential of receiving funding from OEF so we can continue to carry out our mission by meeting the needs of our students and the state's tech industry.

We know that that funding capital improvements is probably not as appealing as funding items that impact students more directly. However, we have been planning ahead and have been requesting funds for minor capital improvements for the last three years but tight budgets have amounted to no funding for these necessary (albeit somewhat boring) building blocks for expansion. The reason the OEF funds are so appealing is because it allows us, the CS Department, to formulate and initiate the most effective plan for our expansion by addressing the most immediate obstacles to expansion (space and people) which ultimately helps us carry out our mission. While budgets for renovations may seem high they have been estimated by our Director of Space Administration and have been shaved by us as much as reasonably possible. Thank you for your consideration.

10. Letters of support:

I manage a team of 280 engineers who build the services that power Microsoft's customer support solutions, including all the backend services, middle-tier services, support agent webapps, and customer facing websites. I am supportive of WWU's efforts to increase the number of students earning computer science degrees, as there are currently not near enough computer science graduates in general, and in particular from Washington state. WWU provides a great source of candidates for Microsoft, and the WWU computer science graduates that I have worked with at Microsoft have been very successful here. I look forward to WWU continuing to support Microsoft's need for more computer science graduates.

Reid Kuhn

Director of Engineering, Microsoft

Reid.Kuhn@microsoft.com

I am writing in continued support of the Washington State Opportunity Scholarship Expansion Grant being submitted by Dr. Perry Fizzano. I'm writing as an employer of WWU students, a member of the WWU Computer Science Industrial Advisory Board, and an alumnae of Computer Science at WWU.

I am the IT Development Manager at SPIE, a not-for-profit society advancing an interdisciplinary approach to the science and application of light. Out of our 180 employees, our IT Department is one of the largest with approximately 30 members. As the (software) Development Manager, I have hired many CS students and graduates, and can attest that the students earning a BS in CSCI at WWU are well qualified and in demand regionally and nationally. We regularly compete with Amazon, Microsoft and other technology giants to hire WWU students. We have hired 17 WWU students as interns over the past few years, 6 of whom have become full-time software engineers with us since graduation.

Best Regards,

Jill Stanton

IT Development Manager

SPIE

+1 360 685 5504 (office)

+1 360-708-8983 (mobile)

jills@spie.org

We currently have 7 Full Time employees who are WWU CS Alumni and 1 current Dev Intern who is an enrolled CS Masters student. We've also had recent success with WWU CS Summer internships and hope to replicate that success in the future.

Gabe Martin

gabe.martin@emergencyreporting.com

Development Manager

Emergency Reporting

Several others have expressed support for an increased number of graduates and regularly recruit interns and full-time employees from WWU. The following all expressed support to me via email but did not supply me with a personalized letter.

Pankaj (PH) Bhatt, Chief Technology Officer, Alpha Technologies Inc. pbhatt@alpha.com

Danny Mason, Director of Development, Expedia, damason@expedia.com

Phillip Nordwall, Principal Sustaining Engineer, EMC Isilon Storage Division, phillip.nordwall@gmail.com

Jim Reavis, Chief Executive Office, Cloud Security Alliance, jim@reavis.org

Kable Wilmoth, Product Development Manager, MicroFocus, kable.wilmoth@microfocus.com

Dave Parsons, Software Engineer, Google, daveparsons@google.com

11. Please provide the following metrics for your institution:

Student Categories		Current Number of Students				Students Achieving Degrees with this Investment			
		Computer Science	Engineering	Teaching STEM (K-12)	Total	Computer Science	Engineering	Teaching STEM (K-12)	Total
1	Students achieving degrees in computer science, engineering, or teaching of STEM (K-12)	85 (2015) 115* (2016) 135* (2017) *projected	97 (2015)	50 (2015)	232	+35 add'l per year reaching 170 grads by 2020	No change	+10 new teachers per year in CS by 2020	+45
2	Students who earned associates degrees in WA state and transfer into computer science, engineering or teaching of STEM (K-12)	N/A	N/A	N/A		N/A	N/A	N/A	N/A
3	Students who earned associates in WA state and transfer into computer science, engineering or teaching of STEM (K-12) and complete 4 year degrees	N/A	N/A	N/A		N/A	N/A	N/A	N/A
4	WA residents achieving degrees in computer science, engineering, or teaching of STEM (K-12)	82 (96%)	92 (95%)	47 (95%)	221	Estimated +33	No change	Estimated +9	+42
5	WSOS students achieving degrees in computer science, engineering, or teaching of STEM (K-12)	6 grads 10 enrolled	2 grads 23 enrolled	2 grads 4 enrolled	10 gr 37 enr	Estimated +10	No change	Estimated +2	+12
6	WSOS-like students achieving degrees in computer science, engineering, or teaching of STEM (K-12)	45 (53%)	55 (57%)	28 (55%)	128	Estimated +18	No change	Estimated +6	+24

1. Describe the Problem and Intended Impact of WSOS Funds

The Computer Science Department at WWU is requesting funds to handle the continued increase in the number of students interested in majoring in computer science. Our increase in capacity will ultimately add 35 graduates per year (26% growth). Further, the funds requested will also support the creation of a pathway for future teachers to obtain the new K-12 CS endorsement and the continued production of K-12 teachers with CS endorsements.

We have grown from an average of 45 graduates per year (2004-2011) to 115 graduates in 2015-16 and a projected 135 graduates in 2016-17. Our ability to handle this increase was a direct result of a decision package that WWU received from the state of Washington in 2013 that enabled us to hire five new tenure-track faculty members. In our proposal to the state that year, we promised we would triple the number of CS graduates per year to a total of 135 – a goal we should reach next year. However, there is continued increasing demand from both native WWU freshmen and transfer students that could easily take us up to 170 graduates per year.

Last fall we received a record number of 72 transfer students interested in CS up from an average of 25 per year. These extra students have created a traffic jam in the pipeline this year causing many first and second year students to be unable to take the CS classes they needed for at least one quarter. There was also a record number of 209 first year students who selected computer science as a major interest when they enrolled last year (this year's numbers are not yet complete). We also accommodated a record number of 400 students in our introductory CS course over the past year. No matter how we look at it we're capable of growing beyond 135 graduates without any special recruiting efforts.

This influx of growth creates several problems if not properly managed. The main problem is that current students compete for limited seats in introductory classes which has a cascading effect. If the students unable to take introductory classes this year choose to take them next year then that will force more students next year to wait to take introductory classes. All of this eventually leads to a greater time-to-degree for our students which leads to more student debt both of which are problematic for WSOS-like students.

The **immediate impact** (under 1 year) of receiving money from the Opportunity Expansion Fund (OEF) is that we will be able to hire four new faculty within a year. The university will provide additional funds to hire supporting staff and make modest capital improvements to our facilities within a year to handle the growth proposed herein. One **short term impact** (1-2 years) of the funds is that we will be able to better handle the increased student interest in CS especially at the introductory level. Finally, the **medium term and long term impacts** (2 years and beyond) are that we will begin graduating more students with a degree in CS, and we will begin graduating pre-service teachers who are endorsed to teach computer science in high school.

All of these impacts will be sustained because WWU administration has agreed to pick up the funding for all of these new faculty positions after three years of support from OEF. This commitment will let us immediately search for new permanent tenure-track faculty members (for which we have been very successful in hiring over the past few years) instead of temporary faculty (for which we have found very few good candidates in this competitive job market).

2. Interest in OEF and Importance of Receiving Funds Now

We are interested in funding from OEF to handle the steadily increasing student demand for CS degrees by hiring four new faculty. WWU's administration has pledged to make capital improvements to accommodate this growth in our current building as well as hire supporting staff to the CS department.

The funds are important to receive now for several reasons. First, the promises that we make in this document regarding growth are not hypothetical, the projected growth is made up of students already on campus or planning to come to campus next year. Also, Washington's new CS K-12 endorsement is approved and WWU's Center for Science Math and Technology Education (SMATE) needs help in commencing work with pre-service teachers to get them prepared to teach computer science in Washington high schools. In turn, this effort will add capable computer science students to the high school to university pipeline.

If we do not receive funds now, current and soon-to-be WWU students will be driven towards other majors, or they will see a significant increase in their time-to-degree, or they will choose a school other than WWU which is recognized as having an excellent CS program. In the proposal for the 2013 funding from the state, we planned for growth up to 135 graduates per year which we will reach next year but we can't expand beyond that without more faculty.

Given continued growth, our current cap of 135 graduates per year will lead to a greater percentage of students denied entry to the major in subsequent years. Continued growth will also create a vicious cycle of increased wait lists and longer time-to degree creating even larger wait lists and so on.

A similar thing happened with WWU's Kinesiology program. A few years ago they had tremendous enrollment pressure and thus had to restrict access to their major. Native students were delayed in taking required courses. Transfer students were told that they would suffer long delays if they came to WWU. The program eventually addressed their shortage of faculty and space. But the word got out that the program had developed incredibly competitive entry requirements and time-to-degree had substantially increased. This past year they were under-enrolled as a backlash of the slow response to addressing the situation. We do not want to repeat history in computer science and are thus in need of this money now to address the looming enrollment issues swiftly before we suffer negative impacts.

It would certainly be less work for us to not grow any further and instead raise our bar for admittance to the CS major and turn away more and more students in subsequent years. However, this goes against several of our core beliefs. First, our primary goal is to educate the students of Washington. These students are choosing to major in computer science in ever-increasing numbers and we have an obligation to support them in their choice. Second, by raising the bar for admittance to the major we would be turning away students who would be successful in the major (based on past data). Raising the bar is especially problematic from a WSOS perspective in that students with little to no background / exposure to computing in K-12 are slightly disadvantaged in the early CS classes and since we use students' GPA in these early classes as one criteria to admit students to the major it means that fewer WSOS-like students would enter the major. This is a subtle point, the issue is not that WSOS-like students are ultimately weaker, it's that they are in competition for limited seats in the major and students from more privileged backgrounds are starting with a leg up. While we are taking measures

from a pedagogical perspective to balance this playing field we know it is not level yet. We also know that some of our best graduates have been first generation students or students with financial need who came from disadvantaged backgrounds but in many cases it took them a while to “warm up”. This is the primary reason we're seeking funds from OEF. We want to support these first-generation students and students from underprivileged backgrounds because we know they can be successful, enter a lucrative and challenging profession and ultimately change their family's economic standing. Our goal is to admit every student into the major who has achieved the indicators of success we have set from careful analysis of past students. Raising the bar any further would result in students who have met these success indicators being denied entry to the major.

3. Program Description

The basic elements of the proposed expansion program are to (1) hire two new CS faculty specializing in CS education which will help with the endorsement of future K-12 teachers as well as improving the introductory CS curriculum at WWU, (2) hire two other new CS faculty at least one who specializes in computer systems or security.

This proposal, if funded, will lead to:

- an increase of CS faculty to address state-wide, university and departmental needs;
- an increase in CS graduates from a high-quality program;
- a first wave (and continuing waves) of CS-endorsed K-12 teachers;
- continued improvement of our introductory CS sequence to benefit WSOS-like students

3.a. Program Outcomes and Time Line

3.b. Program Activities and Time Line

If the CS Department at WWU is awarded funding for this proposal in June 2016, the following outcomes, in bold, will be achieved in the given time frame.

i. Hire four new tenure-track faculty	
Advertisement	July 2016
On-campus interviews	Jan-Mar 2017
Start date for four new faculty	Sept 2017
ii. Increase capacity/graduation totals	
Add extra capacity in CS courses	Sept 2017
Increase of 35 graduates per year to reach 170 total per year	June 2019 and beyond
iii. Prepare pre-service teachers for K-12 CS endorsement	
Begin working on pathway to CS K-12 endorsement	Sept 2017
Begin graduating pre-service teachers endorsed for CS (3 new teachers)	June 2019
Continue graduating pre-service teachers endorsed for CS (10 per year)	June 2020 and beyond

The proposal outlined in the table above is discussed in greater detail below.

i. Hire faculty

We plan to hire four new faculty, two who specialize in CS Education and two others specializing in Computer Systems, Embedded Systems or Security.

The two new CS Education faculty will have a joint appointment with the CS Department and WWU's Center for Science Math and Technology Education (SMATE). This arrangement of two faculty holding joint appointments in a WWU science department and in SMATE has successfully worked in Physics, Biology and Chemistry. We will be mimicking that model in Computer Science.

As part of their SMATE duties the two new CS/SMATE faculty will work with SMATE leadership to develop pathways to the new CS K-12 endorsement. They will also prepare pre-service teachers in WWU's Woodring College of Education for obtaining a CS endorsement.

As part of their CS duties the two new CS/SMATE faculty will primarily help us continue to refine and assess our introductory sequence of courses. Active learning techniques, paired programming, flipped classrooms and structured group work are all being employed currently in our intro courses. However, we are excited to continue to refine and assess our pedagogical methods and two new faculty specializing in CS education would provide additional expertise in this process.

The other two new CS faculty will include at least one who specializes in computer systems or security which is an area of great student interest and industry need and would allow us to build on our existing faculty expertise in this area.

We have been very successful over the past three years hiring excellent tenure-track faculty. Last year when we successfully hired three new faculty, we had a very deep pool and brought fifteen highly-qualified candidates to campus for interviews. We are confident in our ability to recruit excellent faculty who will maintain the high standards we have set.

ii. Increase course capacity and CS graduates

Once we hire new faculty we will immediately address wait list issues in our sophomore courses by offering more sections of the courses needed to declare the CS major. The following year we will offer more upper division courses. This plan will enable us to bring 35 more students into the major soon after hiring new faculty and we will graduate those extra students within two years.

iii. Prepare pre-service and in-service teachers for K-12 CS endorsement

As stated above, the two new CS/SMATE faculty will be instrumental in the creation of pathways to a K-12 CS endorsement. Once hired, the new faculty will work with SMATE leadership to establish pathways to endorsement then they will start preparing current students in our school of education to obtain this endorsement leading to 10 new pre-service teachers per year with the K-12 CS endorsement by 2020.

Beyond the pre-service teachers there will also be a need for professional development workshops for in-service teachers. We are not asking for support from the OEF to run such professional development workshops. However, we will definitely be pursuing funds from other sources to provide workshops so that current teachers can begin incorporating computational thinking and applying computer science

principles in their current classes.

All of this will lead to an enhanced pipeline of high school students who are interested in and prepared for studying computer science in college. This is sorely needed in our state as everyone who is reading this proposal already knows.

3.c. Internships

There are no internships required for a CS degree at WWU. However, several representatives from local tech companies have submitted letters regarding their desire to see more WWU CS graduates and their success in employing graduates from WWU. Time was my only obstacle to having twice as many letters of support.

3.d. Who will benefit – student demographics

This proposal, if funded, will benefit all students at WWU who pursue CS degrees. However, we want to point out the specific actions we've taken over the past several years to increase the participation and success of WSOS-like students.

We have almost a year left on a \$590K National Science Foundation (NSF) S-STEM grant aimed at graduating more women with financial need in CS and Math for which I am the principal investigator. This S-STEM grant has enabled us to implement some best practices and develop a few new practices of our own to address issues related to underrepresented groups in CS. This grant enabled us to start offering a first year seminar course. This course has resulted in several financially-needy students pursuing a CS degree who initially came to WWU to pursue a different degree. We also started having monthly events focusing specifically on issues related to diversity, professional development, internship opportunities, and career guidance. The support network we've developed as part of this grant is important to first-generation and underprivileged students. We are planning to submit a new proposal to the NSF S-STEM program for \$1M. This grant will be focused on removing barriers to success for a wider audience of financially-needy students. If funded, the grant will have an educational researcher on staff who will employ a mixed methods assessment to determine the effectiveness of departmental curriculum and activities in the success of first generation and financially needy students. Both the current NSF grant and the proposed grant, if funded, will enable us to better serve WSOS-like students.

Over the past few years we have strengthened a free, drop-in tutoring program run by advanced CS students for less experienced students. The Dean of the College of Science and Engineering has just committed to fund our tutoring program when the grant currently supporting the program is set to expire. This tutoring program serves hundreds of students each quarter and is especially helpful to close the “experience gap”. The experience gap refers to the knowledge gap that develops between high school students from different economic and educational backgrounds. Closing this gap is essential to promote success of WSOS-like students and we have many efforts in place and can implement more research-proven approaches if funded by OEF that will help WSOS-like students succeed.

Several of our faculty have participated in teaching workshops over the years. Three of our newer faculty have been participating in a multi-year program run by WWU's SMATE which was awarded a multimillion dollar NSF grant three years ago. “Change at the Core”, the program funded by this grant,

is focused on employing student-centered learning activities in our courses and increasing diversity and the representation of financially-needy and underprivileged students in STEM. Students are commenting positively on course evaluations with regards to active learning and these student-centered teaching techniques are now permeating through the department to other faculty. Research shows that student-centered teaching will increase the retention and ultimate success of WSOS-like students.

All of the above has led to an increase in retention from CS 1 to CS 2 to CS 3. It has also led to an increase in the representation of women in our department. Five years ago 10% of our graduates were women, this year over 20% of our new majors are women.

But we're not satisfied yet. WWU's CS Department was recently accepted into the National Center for Women in Information Technology (NCWIT) Pacesetters program. Our acceptance this year (in the most competitive applicant pool NCWIT has ever had) is a testament to our past work and our desire to improve. Many Pacesetter institutions focus solely on the goal of increasing the representation of women. Showing our department's core values, we have also included the goal of increasing the representation and graduation rates of first-generation students. Through the Pacesetters program we will work with social scientists at NCWIT and colleagues from other universities and industry to take measurable steps towards our goals. This is a multi-year program in which our involvement will further increase our ability to effectively serve WSOS-like students.

3.e. Services for WSOS and WSOS-like Students

Note that we are not requesting funds for anything in this section. This section is simply a statement of the extensive supporting services that we already provide in the department which benefit all students but especially WSOS-like students.

We have a very effective advising program in place for all of our students. Mary Hall serves as our full-time academic advisor solely for students interested in computer science prior to their declaration of a major. She is very engaged with students early in their academic career and has been an instrumental part in our recent growth spurt by reaching out to at-risk students and helping them get back on the path to success. Once a student declares the major he is assigned a faculty advisor who works with the student through graduation. Our retention rate is almost 90% from the time when students enter the major through graduation. The Dean of the College of Science and Engineering has pledged to add an extra staff member to our department to further help with our advising efforts as we grow. We've seen that early, active advising and personal contact is especially valuable for first-generation students who are less aware of the ins and outs of university bureaucracy and keeps those students on a four-year path to graduation.

As stated above our free drop-in tutoring program is highly utilized by students. Next year the college has committed funds to creating and administering a yearly training course for our tutors and teaching assistants. We are constantly assessing the effectiveness of our tutors and teaching assistants and will begin to assess the training course as well.

Another element of our department that has been especially important in helping underrepresented groups thrive is our Association for Women in Computing (AWC) club. This club has been very active in advocating for and supporting departmental change aimed at making the climate more welcoming and inclusive to all students. The AWC runs many professional development events (e.g. resume

building workshops before career fairs, mock interviews), they regularly encourage students to participate in conferences and networking events, and they perform considerable outreach with local middle and high school students. The AWC leadership and membership is always composed of several WSOS scholars and does a great job of promoting the WSOS scholarship and encouraging students to succeed.

As part of a department initiative three years ago we ran a focus group with women in the department. As a result of that, the faculty instituted a “new major orientation” for all new majors in the department. This orientation has done wonders for elevating the level of discourse in the department around diversity issues. Over the last two years I’ve personally been part of a conference presentation, the publication of a research paper and three poster presentations on the topic of increasing diversity. While our department has successfully employed some standard best practices we have also developed novel approaches and shared those new ideas with the CS, engineering and math education communities through these publications and presentations. One of our novel developments that has received the most attention is our new major orientation.

In our experience the students who benefit the most from these services are those with little prior experience in computer science and these are generally students from underrepresented and/or underprivileged backgrounds. Thus, while none of the efforts listed in this section will be services funded by the OEF they will still be instrumental in serving WSOS-like students.

4. Budget for proposed projected

Hire four new tenure-track faculty (3 years)	
a. Salary (4 fac for 3 yrs)	\$80K * 4 * 3 = \$960K
b. Fringe (4 fac for 3 yrs)	\$80K * 35% * 4 * 3 = \$336K
c. Library funds (4 fac for 3 yrs)	\$10K * 4 * 3 = \$120K
d. Recruiting costs for 4 faculty positions	= \$24K
e. Start-up funds for 4 new faculty	\$45K * 4 = \$180K
TOTAL	\$1.62M

Budget Justification:

a, b) These lines are for faculty salary and fringe benefits. This salary is just below the median level for new CS faculty nationwide at Masters granting institutions similar to WWU but it is in-line with our recent faculty hires in CS at WWU.

c) This line supports library acquisitions and the ongoing costs for digital subscriptions to research publications that all faculty make use of. This dollar amount is consistent with how much we allocated from the decision package money in 2013 to library funds for each new faculty hire for the last three years. We are satisfied with this level of allocation because it is effectively supporting faculty needs for access to publications and provides support for undergraduate students, for instance, by allowing us to purchase language corpora for natural language processing courses and projects.

d) Recruiting costs include 90 day ad placements in national publications and websites. More significantly it also includes transportation and lodging for two-day, on-campus interviews for each finalist. On average we have interviewed 5 finalists per open faculty position in our recent searches.

e) Start-up funds for new faculty allow faculty to purchase equipment to advance their research program (and all of our recent faculty hires regularly engage undergraduates in research). Start-up funds are essential to recruiting great faculty and \$45K is comparable to what we've awarded to recent hires. I expect the total allocation requested will not be divided equally among all faculty hires since the computer systems faculty will likely need more start-up funds than education-focused faculty to support their research.

Leverage Dollars from within WWU: The Dean of the College of Science and Engineering has pledged the following additional support if we obtain funds from OEF: (1) one full-time office support staff to supplement our current staff to help with increased advising load and office management load and (2) one new permanent technical staff position which is currently filled by temporary staff. This amounts to almost \$150K in salary plus fringe benefits per year for the two staff positions.

The Provost has agreed to fund capital improvement projects to help us renovate space in our current building for more faculty offices and CS specific lab space. The initial estimate for these improvements is upwards of \$300K. Note that our initial proposal included a line item for these minor capital improvements but the university has agreed to fund these internally so they have been pulled from this proposal.

5. Sustaining the proposed project

All of the activities proposed will be sustained because the Provost has agreed to fund our new faculty positions after OEF funds them for three years. The reason these funds are so helpful to us now is that they create a bridge to the time when the Provost can allocate permanent resources to aid in the growth of the CS Department.

6. Employer commitment

Several employers have stated support for our expansion and these are attached. \

7. Continuous assessment and improvement

Because WWU's CS Department is ABET-accredited we have a continuous assessment and improvement plan in place for our department. The CS Department is regularly used as an example at the university level when we have discussions about university-wide accreditation. The CS Department's continuous improvement plan includes evaluation of student success, consideration of student course evaluations, feedback from our industrial advisory board, focus groups with students, exit interviews with graduates, surveys of recent graduates, and assessment of all levels of the curriculum on a six year rotating cycle.

We have also recently improved our department's evaluation plan for new faculty. We have a much more clear and robust plan for new faculty evaluation, mentoring and continuous improvement.

Thus, we believe we can incorporate four new faculty into our department because we have a strong mentoring program and established evaluation processes in place. Funds from the OEF would lead to a long-term and high-quality expansion of WWU's CS Department.

8. Top three challenges

The influx of students seems infinite. Last year at this time we thought we were sitting pretty. We were going to have three new faculty starting in the following September and would have more offerings of core and elective classes in 2015-16 than ever before. Then we got a record number of 72 new transfer students for fall quarter. There were 400 first-year students who took our introductory programming course for CS majors this year, which is more than ever before. A record number of 209 incoming freshmen last year selected computer science as a preferred major. Moreover, a higher percentage than years' past of those students taking an introductory programming class want to major or minor in CS. Thus, we are now in a similar position with wait lists and student demand as we were four years ago, before we hired 6 new faculty. It's overwhelming. So the biggest challenge just seems to be managing the increasing student demand. **Update:** This year we asked our admissions office to cut down on the number of transfer students coming into computer science for Fall 2016 because we couldn't possibly handle another surge like last summer (and an article was written in the Seattle Times that discussed our increasing enrollments). Now that admission season has passed, it turns out that WWU turned away almost 100 highly qualified transfer students wanting to major in computer science. This is yet more evidence that the faculty expansion we're proposing is much needed and the student expansion we're proposing is easily attainable.

Recruiting new faculty is not so much of a challenge as it is a labor intensive effort. We have been extremely successful over the past three years in hiring high-quality faculty. Bellingham and Western are great draws for quality of life and reputation of the university. Being close to Seattle helps recruiting CS faculty in terms of the wealth of potential professional contacts (we have several faculty who regularly collaborate with Seattle-area colleagues and this is very appealing to many new faculty). However, we have lost some great candidates to industry because of the competitive job market. Recent surveys by the Computing Research Association shows that a majority of PhD's in CS are going into industry instead of academics. In fact the difference between the percentage of CS PhD's who go into industry and the percentage who go into academics is at an all time high and rapidly increasing. While we are confident in our ability to recruit quality faculty, it is not easy by any stretch and takes hundreds of hours of collective effort on the part of our faculty and staff.

The final challenge which we mentioned earlier but want to reinforce here is that we are extremely conscious that setting an increasingly high bar for admission to the major (based on performance in introductory classes) can negatively impact our inclusion of WSOS-like students. This is not to say that financially-needy students and those from underprivileged backgrounds are weaker students. It simply says that the criteria we use to admit students to the major is based on performance in early CS courses and students with some prior experience often have a slight advantage using that criteria. Further, prior experience in computing is correlated with a greater economic standing. We are asking for expansion funds so that we do not have to turn away capable students who could be excellent graduates but they just need some time to get their feet under them. We have carefully analyzed historical indicators to learn which ones correspond to successful graduates. We are admitting 100% of those students today.

However, if we don't continue to grow we will begin turning away some of these qualified students. There have been many “below average” (grade-wise) WWU CS graduates over the years who are highly successful in industry. If we had imposed a high bar for admittance to the major in the past we would have turned some of those students away and denied them the chance for economic upward mobility because of their slightly weaker performance in early courses. We want to serve those students by helping them succeed and thereby fulfill our mission.

9. Graduation and job placement rates

Once students are accepted into the CS major over 80% of them obtain a CS degree within 2 years, under 10% require longer than 2 years to complete (often times these students take time off for personal or family reasons), and under 10% end up completing a different degree at WWU or leave WWU permanently.

Alumni surveys show that over 90% of our CS graduates are employed in a job related to their degree or are pursuing graduate studies in computer science. Most of our graduates remain in Washington.

10. Letters of support – see attached

11. Student metric sheet – see attached

Summary – In simple terms, the growth that we're seeing in the CS Department at WWU is unprecedented in our history and is outpacing the university's ability to address it. The decision package we received from the state in 2013 created a much needed significant influx of base funds for CS and we have been good stewards of that money by hiring new faculty and tripling our number of majors and graduates as we promised. However, we continue to see increased student demand so we are once again in need of an injection of funds. WWU can't quickly solve this problem internally (e.g. there is internal money for only one new additional faculty position in our entire College of Science and Engineering this year). We are excited at the potential of receiving funding from OEF so we can continue to carry out our mission by meeting the needs of our students and the state's tech industry.

Thank you for your consideration.

10. Letters of support:

I manage a team of 280 engineers who build the services that power Microsoft's customer support solutions, including all the backend services, middle-tier services, support agent webapps, and customer facing websites. I am supportive of WWU's efforts to increase the number of students earning computer science degrees, as there are currently not near enough computer science graduates in general, and in particular from Washington state. WWU provides a great source of candidates for Microsoft, and the WWU computer science graduates that I have worked with at Microsoft have been very successful here. I look forward to WWU continuing to support Microsoft's need for more computer science graduates.

Reid Kuhn

Director of Engineering, Microsoft

Reid.Kuhn@microsoft.com

I am writing in continued support of the Washington State Opportunity Scholarship Expansion Grant being submitted by Dr. Perry Fizzano. I'm writing as an employer of WWU students, a member of the WWU Computer Science Industrial Advisory Board, and an alumnae of Computer Science at WWU.

I am the IT Development Manager at SPIE, a not-for-profit society advancing an interdisciplinary approach to the science and application of light. Out of our 180 employees, our IT Department is one of the largest with approximately 30 members. As the (software) Development Manager, I have hired many CS students and graduates, and can attest that the students earning a BS in CSCI at WWU are well qualified and in demand regionally and nationally. We regularly compete with Amazon, Microsoft and other technology giants to hire WWU students. We have hired 17 WWU students as interns over the past few years, 6 of whom have become full-time software engineers with us since graduation.

Best Regards,

Jill Stanton

IT Development Manager

SPIE

+1 360 685 5504 (office)

+1 360-708-8983 (mobile)

jills@spie.org

We currently have 7 Full Time employees who are WWU CS Alumni and 1 current Dev Intern who is an enrolled CS Masters student. We've also had recent success with WWU CS Summer internships and hope to replicate that success in the future.

Gabe Martin

gabe.martin@emergencyreporting.com

Development Manager

Emergency Reporting

Several others have expressed support for an increased number of graduates and regularly recruit interns and full-time employees from WWU. The following all expressed support to me via email but did not supply me with a personalized letter.

Pankaj (PH) Bhatt, Chief Technology Officer, Alpha Technologies Inc. pbhatt@alpha.com

Danny Mason, Director of Development, Expedia, damason@expedia.com

Phillip Nordwall, Principal Sustaining Engineer, EMC Isilon Storage Division, phillip.nordwall@gmail.com

Jim Reavis, Chief Executive Office, Cloud Security Alliance, jim@reavis.org

Kable Wilmoth, Product Development Manager, MicroFocus, kable.wilmoth@microfocus.com

Dave Parsons, Software Engineer, Google, daveparsons@google.com

11. Please provide the following metrics for your institution:

Student Categories		Current Number of Students				Students Achieving Degrees with this Investment			
		Computer Science	Engineering	Teaching STEM (K-12)	Total	Computer Science	Engineering	Teaching STEM (K-12)	Total
1	Students achieving degrees in computer science, engineering, or teaching of STEM (K-12)	85 (2015) 115* (2016) 135* (2017) *projected	97 (2015)	50 (2015)	232	+35 add'l per year reaching 170 grads by 2020	No change	+10 new teachers per year in CS by 2020	+45
2	Students who earned associates degrees in WA state and transfer into computer science, engineering or teaching of STEM (K-12)	N/A	N/A	N/A		N/A	N/A	N/A	N/A
3	Students who earned associates in WA state and transfer into computer science, engineering or teaching of STEM (K-12) and complete 4 year degrees\	N/A	N/A	N/A		N/A	N/A	N/A	N/A
4	WA residents achieving degrees in computer science, engineering, or teaching of STEM (K-12)	82 (96%)	92 (95%)	47 (95%)	221	Estimated +33	No change	Estimated +9	+42
5	WSOS students achieving degrees in computer science, engineering, or teaching of STEM (K-12)	6 grads 10 enrolled	2 grads 23 enrolled	2 grads 4 enrolled	10 gr 37 enr	Estimated +10	No change	Estimated +2	+12
6	WSOS-like students achieving degrees in computer science, engineering, or teaching of STEM (K-12)	45 (53%)	55 (57%)	28 (55%)	128	Estimated +18	No change	Estimated +6	+24

Tab E

Post-Graduation Survey

WSOS POST-GRADUATION EMPLOYMENT SURVEY REPORT: 2015 GRADUATES

June 2016

KEY HIGHLIGHTS

INTRODUCTION. In mid-March through early April 2016, the College Success Foundation's Research, Evaluation, Planning and Accountability Department administered the Post-Graduation Survey to the 443 Washington State Opportunity Scholarship recipients who earned their bachelor's degrees in calendar year 2015. In total, 186 out of 443 (42 percent) of the 2015 WSOS graduates responded to the survey. Survey respondents are representative of all 2015 WSOS graduates within 1 to 2 percent on cohort, gender, and race or ethnicity, and all findings are considered generalizable. *See Appendix A and B for details on representativeness.*

2015 GRADUATES DEMONSTRATE STRONG ACADEMIC SUCCESS. For the first time, WSOS graduates were asked to report their cumulative GPA at graduation. The mean GPA of 3.53 for 2015 WSOS graduates indicates strong academic performance.¹ Additionally, a vast majority (94%) of WSOS recipients ultimately graduated with their first degree in a STEM or health care field.² The first major category with the greatest proportion of graduates is engineering (28%) followed by biological and biomedical sciences (20%) and health care (18%).

EIGHTY-THREE PERCENT OF 2015 GRADUATES ARE EMPLOYED IN THEIR FIELD OF STUDY OR SEEKING AN ADVANCED DEGREE. WSOS 2015 graduates generally followed one of two pathways: 70 percent sought to join the workforce directly (started or completed their job search) while 27 percent pursued further education (graduate or professional school).³ *See Appendix C for post-graduation plans by first degree major.* Compared to last year's graduating class, this represents a 5 percent decrease in the proportion of graduates searching for employment and a 5 percent increase in the proportion attending graduate or professional school. *See Graphic 1 for trends⁴ in post-graduation plans for graduates from 2013 through 2015.*

Scholars graduating in certain fields of study are statistically more likely to pursue graduate school.⁵ The first field of study with the greatest proportion of Scholars pursuing graduate school is biology (55%). *See Appendix C for the proportion of graduates in each major field who pursue graduate school.*

¹ No statistically significant differences in GPA are present on field of study, under-represented minority status, or gender.

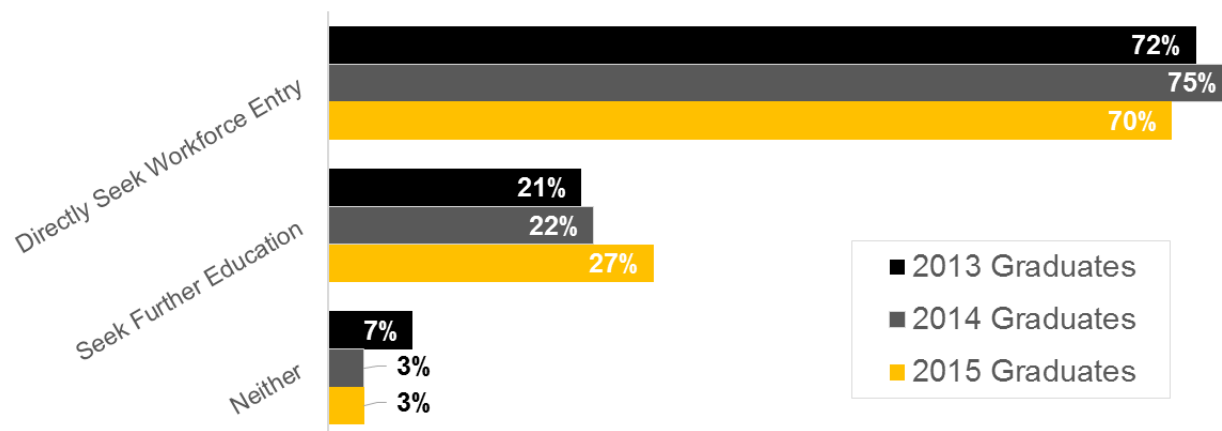
² While Scholars only receive funding while studying in eligible fields (STEM or health care and high-demand), many college students change their majors over time. As a result, students who received WSOS funding while declared in an eligible major may ultimately graduate with a degree in an ineligible field.

³ Among the 186 respondents, 3 percent have not started their employment search nor sought graduate studies for other reasons.

⁴ With only three years' data, full trend analysis is premature, but the initial outcomes for WSOS graduates suggest the beginning of promising trends. All trend references in this report are preliminary.

⁵ These differences are statistically significant in a chi square analysis at the 0.05 level. While some majors had a higher proportion of Scholars attending graduate school than the majors listed here, those groups of students had a sample size (n value) that was too small for significance testing and are therefore excluded. There were no differences in post-graduation plans by under-represented minority status or gender.

GRAPHIC 1. Post-Graduation Plans



Scholars who indicated they were seeking further study were asked to indicate in which field they intended to earn their advanced degree. The largest proportion of students are pursuing further studies in health professions and related programs (45%) followed by engineering (12%) and biological and biomedical sciences (8%).⁶

EMPLOYED GRADUATES DEMONSTRATE STRONG DESIRABILITY WITHIN THE WORKFORCE. The hire-ability of WSOS graduates is demonstrated in the proportion of job seekers who have found work, the job search time reported, and the number of job offers graduates have received.⁷ See Appendices D through G for full details of hire-ability statistics.

- » About nine out of ten (91%) graduates who sought work were employed within nine months of graduation.
- » Nearly four out of five (79%) employed graduates found employment within three months.⁸
- » About half of employed graduates (48%) applied for fewer than five jobs within their field of study and more than half (51%) received two or more job offers in their field of study.

FOUR OUT OF FIVE GRADUATES WHO SOUGHT EMPLOYMENT ARE EMPLOYED WITHIN THEIR FIELD OF STUDY. Among those who sought employment, 80 percent are employed within their field of study, 12 percent are employed outside of their field of study, and 9 percent are not employed and are currently searching for work.⁹

Compared to the graduating class of 2014, this represents a 3 percent increase in the proportion of employed job seekers, a 7 percent increase in the proportion of job seekers employed in their field of study, and a 3 percent decrease in the proportion employed outside of their field of study. See Graphic 2 for trends in post-graduation employment status of job seekers for graduates from 2013 through 2015.

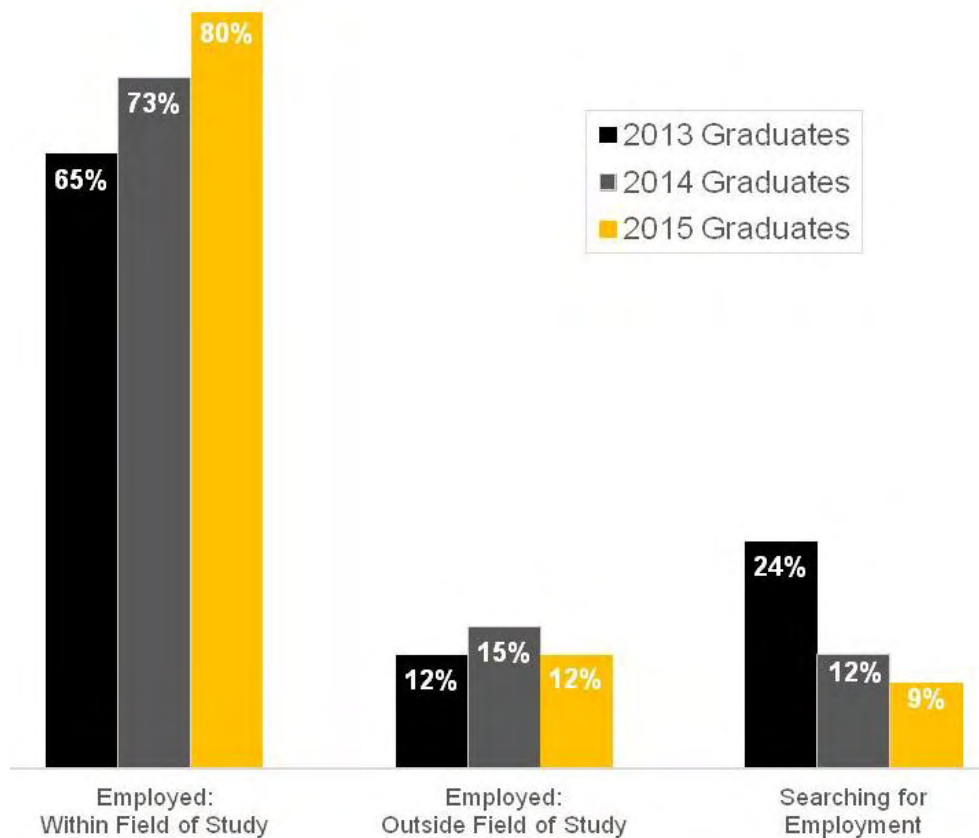
⁶ Note that these proportions refer to the field of study graduates intend to pursue in *graduate* school. The prior paragraph refers to which *undergraduate* majors are most likely to pursue graduate studies in any field.

⁷ No statistically significant differences are present on field of study, under-represented minority status, or gender.

⁸ 2015 graduates who have secured a position report having searching for work for a relatively short period of time: 79% searched for 3 months or less; 16% searched for four to six months; and 5% searched for 7 months to a year. Of those who are still seeking work, 18% have been searching for less than 3 months; 55% have been searching for between four and six months; 27% have been searching for between seven months to a year.

⁹ No statistically significant differences are present in employment status on field of study, under-represented minority status, nor gender. Sum of proportions is great than 100% due to rounding.

GRAPHIC 2. Post-Graduation Employment Status of Job Seekers

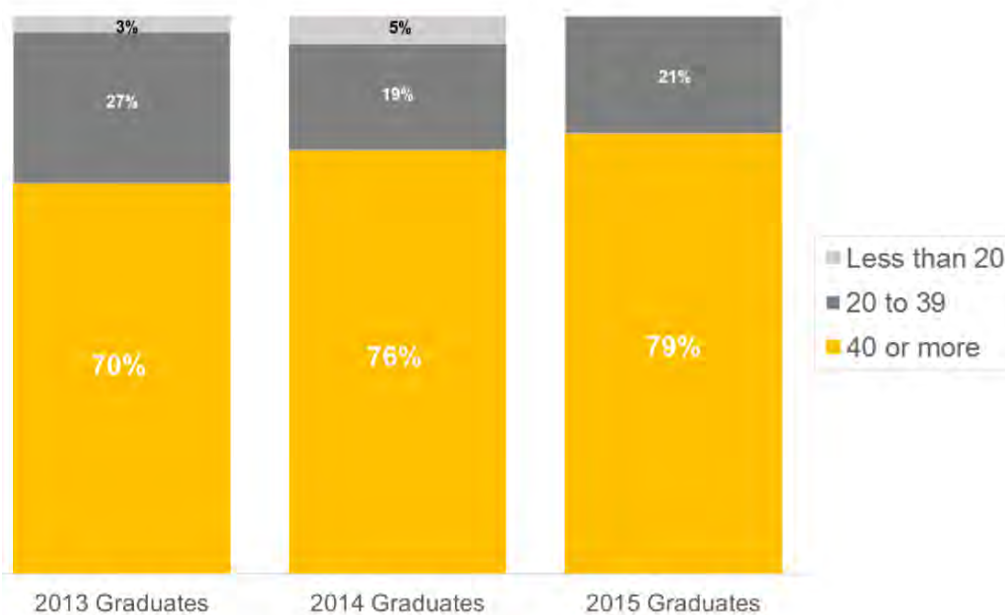


Among those employed outside of their field of study, 73 percent are still searching for employment within their field of study. Given that a majority of job seekers are either employed within their field of study or continuing to search for employment in their field of study, much of the following analyses focus on the subset of respondents who indicated that they were employed in their field of study (n=104; 56 percent of the sample).

NEARLY 80 PERCENT OF GRADUATES EMPLOYED IN THEIR FIELD OF STUDY WORKING FULL-TIME.

Of WSOS graduates employed in their field of study, 79 percent are employed full time compared to 76 percent of last year's graduating class. See *Graphic 3* for details on the hours worked by 2013 to 2015 graduates who are employed in their field of study.

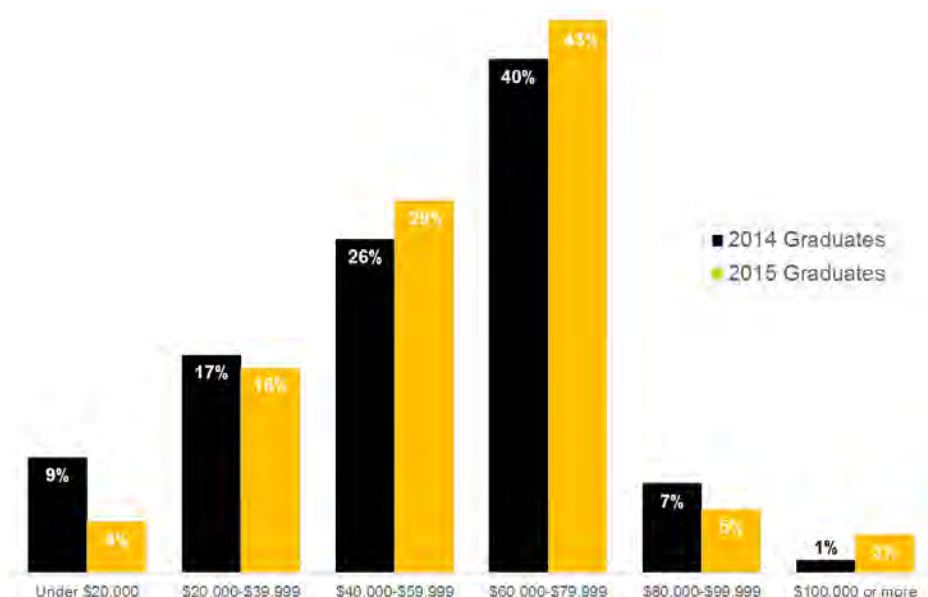
GRAPHIC 3. Hours Worked Weekly by Graduates Employed in Field of Study



EIGHTY PERCENT OF WSOS GRADUATES EMPLOYED FULL-TIME IN THEIR FIELD OF STUDY EARN \$40,000 OR MORE WITHIN ONE YEAR.

The majority (72%) of 2015 graduates employed full-time within their field of study report earning between \$40,000 and \$79,999 per year. One-fifth report earning under \$40,000. The remaining 8 percent report earning \$80,000 or more per year. The greatest proportion of WSOS graduates employed full-time in their field of study earn between \$60,000 and \$79,999 (43%). These figures are comparable to average starting salaries for 2014 STEM graduates nationwide, which range from \$33,200 to \$64,900.¹⁰

GRAPHIC 4. Annual Salary for Graduates Employed Full-Time in their Field of Study

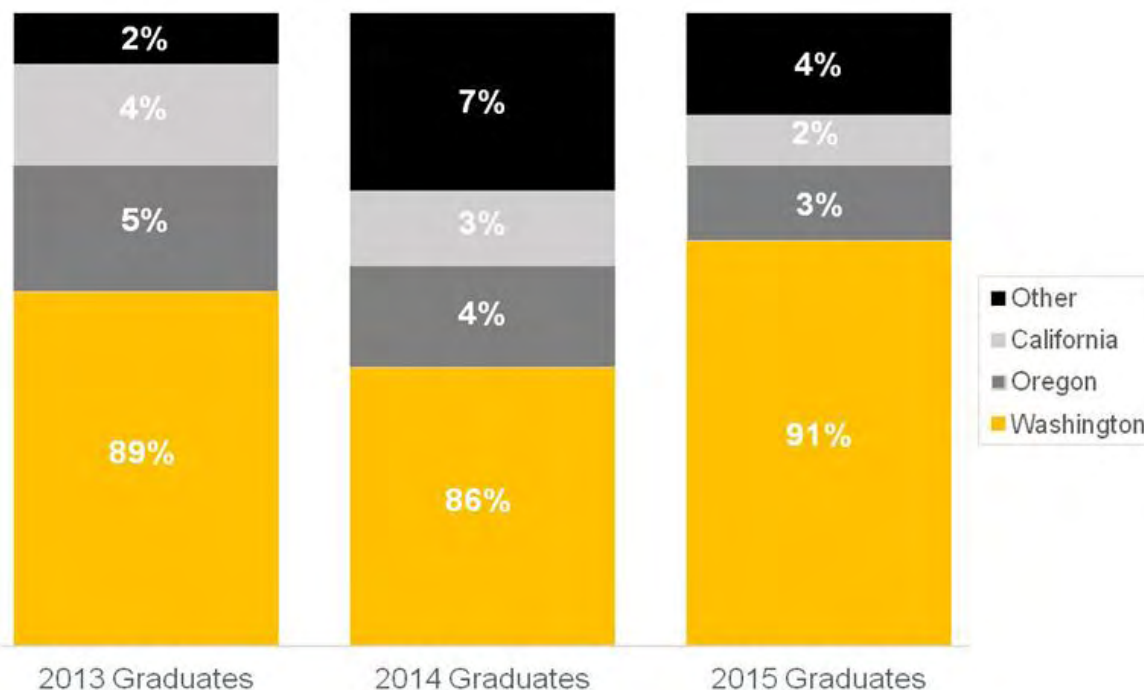


¹⁰ National Association of Colleges and Employers. (2015). STEM Graduates: Salary Expectations Fall Short of Actual Salaries. Retrieved from, <https://www.naceweb.org/s04152015/salaries-for-stem-graduates.aspx>. No statistically significant differences are present on earnings by field of study, under-represented minority status, or gender.

MANY EMPLOYED WSOS GRADUATES HAD PREVIOUS INTERNSHIP OR WORK EXPERIENCE WITH THEIR CURRENT EMPLOYER. Among graduates employed in their field of study, 35 percent previously interned or worked for their current employer in another role compared to 34 percent of last year’s graduating class and 32 percent of 2013 graduates.

MOST WSOS GRADUATES EMPLOYED IN THEIR FIELD OF STUDY STAYED IN WASHINGTON STATE. Among graduates securing post-graduation employment in their field of study, 91 percent are working in Washington State compared to 86 percent of last year’s graduating class. Graduates report being employed at nearly 100 diverse companies and organizations. *See Appendix H for a full list of companies where 2015 WSOS graduates are employed by field of study.*

GRAPHIC 5. Job Location of Graduates Employed in Field of Study



MOST GRADUATES WHO ARE SEEKING FURTHER EDUCATION WANT TO STAY IN OR RETURN TO WASHINGTON STATE. Eighty percent of graduates seeking advanced degrees plan to attend graduate school in Washington State, and 70 percent reported their intent to focus their future job search for employment opportunities located in the state of Washington.

Among graduates who are pursuing further education, more than half (54%) are pursuing a Master’s degree, 50% are seeking a doctoral degree (PhD, DMD, MD, PharmD), and 8% are pursuing another type of post-baccalaureate degree.¹¹ Given the length of time required for these programs, only 22 percent of graduates pursuing an advanced degree anticipate joining the workforce in the next year; 29 percent anticipate joining the workforce in one to two years; 49 percent anticipate joining the workforce in 3 or more years. Since nearly half of graduates pursuing advanced degrees will not join the workforce full-time for three or more years, we can expect workforce impacts to be delayed.

¹¹ Note that some respondents indicated their pursuit of both a Master’s and a doctoral degree and thus are double-counted. This results in a sum percentage greater than 100%.

PROGRAMMATIC FEEDBACK

SCHOLARS DO NOT ACCEPT JOB OFFERS DUE TO GEOGRAPHY, WORK SETTING, AND SALARY. Sixty-three job seekers indicated they received job offers they did not accept (n=61 of those currently employed, n=2 of those still seeking work). Survey responses indicate a variety of reasons that Scholars chose not to accept job offers.¹² The most common reason respondents listed for not accepting a position was due to its geographical location (48% had rejected an offer due at least in part to this factor). Working setting was the second most-reported factor for rejection of a job offer (46%) followed by salary (43%). All other items had less than a third of respondents reporting them as factors for having rejected a job offer. *Table 1 below details the reasons Scholars rejected job offers.*

TABLE 1. Factors Related to Rejection of Job Offer

Did this factor impact your decision to reject a job offer?	Yes (%)
Geographical location	48%
Working setting/environment	46%
Salary	43%
Work culture	33%
Benefits	25%
Not full-time	24%
Lack of advancement opportunities	22%
Not in field of study	17%

CAREER READINESS ACTIVITIES

For those graduates who had started or completed their post-graduation job search, career readiness activities and some WSOS supports were rated. Students had an opportunity to indicate whether or not they participated in each activity and, if the activity had been completed, rate its perceived impact on the graduate's job market competitiveness.

The career readiness activity with the highest perceived impact was participating in an internship or related activity which received a mean score of 3.36 (where 1=no impact and 4=great impact) and 81% of participants reported moderate or great impact on their job marketability (n=85). The second most impactful activity was having a cover letter and/or resume reviewed which received a mean score of 2.99 and 71% of participants reporting moderate or great impact on their job marketability (n=108). See *Appendix I for full details on the perceived impact of all career readiness activities.*

SCHOLARS VERY LIKELY TO PARTICIPATE IN JOB OFFER NEGOTIATION TRAINING.

Employed graduates were asked if they had negotiated their salary and/or benefits prior to accepting their current position. The majority of respondents reported they had not attempted to negotiate (69%) while 15 percent attempted to negotiate but were unsuccessful. Only 16 percent of respondents reported they had successfully negotiated for a better salary and/or benefits prior to hire in their current role.

Graduates who have started or completed their post-graduation job search were asked about the likelihood they would have taken advantage of the opportunity for training or coaching related to how to

¹² Respondents were allowed to select all items that applied for their reasons not to accept a job offer.

negotiate salary and/or benefits with a potential new employer. Seventy-eight percent of respondents said they were very likely (35%) or somewhat likely (43%) to have taken advantage of such an opportunity. Twenty-one percent reported they were somewhat unlikely (11%) or very unlikely (10%) to have participated in such a training if it were offered.

Given that most employed graduates did not attempt to negotiate before accepting their current position and the interest demonstrated by all job seekers in this area, this topic is recommended for a future Skills That Shine workshop.

SCHOLARS PROVIDE ACTIONABLE FEEDBACK. In response to the final question regarding feedback related to participating in WSOS, 27 percent of respondents (50 out of 186) provided responses. These responses were read and coded by theme. Among these responses, three-quarters mentioned general gratitude for the support of WSOS. Thirty-seven percent cited gratitude for the financial support of WSOS in particular while 8 percent specifically mentioned the importance of its programmatic supports. This overwhelmingly positive response is well-aligned with considerable gratitude reported last year by 2014 WSOS graduates and demonstrates a positive impact of the WSOS scholarship and student supports.

All responses are categorized by theme in Appendix J. A few select quotes are provided below:

Thank you! WSOS was huge for me; it prevented me from taking out loans my last two years of undergrad. That eases the idea of taking out loans for grad school since scholarships/grants are difficult to come by in my field. – WSOS Graduate in Biological and Biomedical Sciences, Class of 2015

WSOS is a great program, and I don't think I could have afforded college without it! – WSOS Graduate in Computer and Information Sciences, Class of 2015

This scholarship is one of the best scholarships out there. I received so much support and encouragement from all the staff I had encountered throughout my time as a student. I always recommend students interested in the STEM field to look into this scholarship. – WSOS Graduate in Engineering, Class of 2015

I am so appreciative of all that this program has done for me. It has made completing my bachelor's degree possible and I am so thankful for all of the assistance I've received. – WSOS Graduate in Health Professions & Related Programs, Class of 2015

This scholarship allowed me complete my degree with minimum stress over tuition. Thanks to this scholarship I was able to attend my dream university and pursue my dream career. As a student that was on welfare, the scholarship provided opportunities and hope. It allowed me to move from a low income tier to high middle class straight out of college, which is extremely rare. – WSOS Graduate in Mathematics and Statistics, Class of 2015

A notable pattern in the open-ended responses related to the college-career connection. One fifth of respondents reported either they wished they knew more about the supports beyond financial assistance that WSOS provides or mentioned specific career readiness activities they wished WSOS would provide.

Many Scholars provided feedback items for improving the support WSOS provides for students. Key actionable recommendations related to this feedback are summarized below for the WSOS team's consideration:

- » **Promote awareness around career readiness services currently offered by WSOS.** Several Scholars noted they were not aware that services beyond financial assistance were a part of WSOS.
- » **Offer job search assistance including networking within both industry and academia.** While current Industry Explorations activities are available, some Scholars' feedback revealed they are unaware of these services. Additionally, some asked for opportunities to learn from professionals working in academia as well as from industry professionals.
- » **Extend scholarship financial support to post-baccalaureate and graduate studies.** Scholars noted that their work in STEM fields required them to seek education beyond their bachelor's degree. These students noted that continuing financial support beyond earning their bachelor's degree would be beneficial.
- » **Offer a Skills That Shine workshop on evaluating different job opportunities and negotiation skills.** In the survey, recent graduates reported that many did not negotiate for better salary/benefits although many had multiple job offers. Additionally, there was considerable interest from respondents in participating in such a workshop.
- » **Review the process through which students lose their scholarship due to changing to an ineligible major.** Some Scholars reported that their institution used an ineligible CIP code to classify their major while they felt that their major closely resembled an eligible program of study. It may be worth reviewing how institutions are coding majors throughout the state and streamline the process through which students may petition if they believe their major could be mapped to an eligible CIP code.
- » **Tell Scholars to start their job search early; host a WSOS career fair.** Graduates reported wishing they had known to start their job search earlier. This could be useful feedback to share with current junior and senior Scholars. Additionally, it was noted that a WSOS career fair where Scholars could apply to open internships and jobs on the spot could be of use.
- » **Consider offering a license and certification assistance program for post-graduates.** One respondent noted that having a mini-scholarship available to alumni of the program to cover the cost of study aid programs (for licensing in a STEM field, applying to graduate school, etc.) or to cover the cost to take the exams would be helpful.
- » **Assign accountability partners for peers in WSOS.** One Scholar noted that it could have been useful to have been paired with a fellow WSOS Scholar for support in attending WSOS programs, completing job search activities, etc.

SURVEY ADMINISTRATION RECOMMENDED CHANGES FOR 2017 ADMINISTRATION

Consider using a targeted sampling method. The proportion of graduates who responded to the survey (42%) is down 5 percent from the Post Graduate Survey administered to 2014 graduates in 2015 (in which 47% of graduates responded). This resulted despite using the same initial outreach (mid-March email) and reminder methods (weekly reminders to partial and non-responders over the survey period of six weeks) and incentives (\$25 Amazon gift card raffle) in both years. In order to ensure a higher response rate, it may be beneficial to use a targeted random sampling method with direct text or email reminders rather than a general census method. An additional option may be to prepare WSOS Scholars during the program that they are expected to answer the follow-up survey after graduation.

Ask Scholars whether or not they are working in their home county. The current survey structure allows for the reporting on how many students remain in Washington State for employment. It could be of interest to donors to know the frequency with which students are returning to their home community within their home state following graduation. Asking Scholars to report their current home county and comparing that county with their graduated high school would allow for such reporting.

Consider removing the questions about second and third jobs worked. Since salaries are listed in ranges, it is not possible to sum the total salary earned by graduates from multiple jobs. The responses to these questions were not used in the preparation of this or last year's report. Unless there is a desired utility of the responses for these questions, they should be removed to respect respondents' time.

APPENDICES

APPENDIX A. REPRESENTATIVENESS OF SAMPLE

Survey respondents are representative of all 2015 WSOS graduates within 1 to 2 percent on cohort, gender, and race or ethnicity. The majority of respondents (86 percent) represent Cohort 1 Scholars with the remaining 14 percent from Cohort 2. Fifty-four percent of respondents were female, and 65 percent were white.¹³ In comparison, among all 2015 WSOS graduates, 85 percent are Cohort 1 Scholars, 14 percent are Cohort 2 Scholars, and 1 percent are Cohort 3 Scholars. Fifty-two percent are female and 48 percent male; 65 percent are white. *For full demographic details of respondents, see Tables 2 through 4 below.*

TABLE 2. Cohort of All 2015 Graduates versus Respondents

Cohort (Funding Start Year)	All 2015 Graduates		Respondents	
	#	%	#	%
Cohort 1 (2012)	377	85%	160	86%
Cohort 2 (2013)	62	14%	26	14%
Cohort 3 (2014)	4	1%	0	0%
TOTAL	443	100%	186	100%

TABLE 3. Gender of All 2015 Graduates versus Respondents

Gender	All 2015 Graduates		Respondents	
	#	%	#	%
Female	230	52%	100	54%
Male	213	48%	86	46%
TOTAL	443	100%	186	100%

TABLE 4. Race or Ethnicity of All 2015 Graduates versus Respondents

Race or Ethnicity	All 2015 Graduates		Respondents	
	#	%	#	%
American Indian or Alaska Native	11	2%	3	2%
Asian	71	16%	31	17%
Black or African American	9	2%	1	1%
Hispanic/Latino of any race(s)	34	8%	14	8%
Two or more races	21	5%	13	7%
White	286	65%	120	65%
Not provided	11	2%	4	2%
TOTAL	443	100%	186	100%

¹³ A greater proportion of WSOS graduates (and respondents to this survey) identify as white when compared with WSOS all-time funded Scholars. This is due to the fact that a considerable majority of graduates to date are from Cohort 1; when compared with all other cohorts, Cohort 1 had the greatest proportion of students identifying as white.

APPENDIX B: RESPONDENTS BY DEGREE MAJOR(S)¹⁴

Degree Major	1 st Degree Major		2 nd Degree Major	
	#	%	#	%
STEM OR HEALTH CARE	174	94%	28	82%
Agriculture, Agriculture Operations, & Related Sciences	1	0.5%	0	0%
Biological & Biomedical Sciences	38	20%	4	12%
Business Management, Marketing & Related Support Service	4	2%	3	9%
Computer Information Sciences & Support Services	18	10%	1	3%
Education	3	2%	1	3%
Engineering, Engineering Technologies & Engineering-Related Fields	53	28%	2	6%
Family & Consumer Sciences, Human Sciences	1	0.5%	1	3%
Health Professions & Related Programs	33	18%	3	9%
Mathematics & Statistics	6	3%	7	21%
Natural Resources & Conservation	2	1%	3	9%
Physical Sciences	13	7%	3	9%
Science Technologies/Technicians	2	1%	0	0%
NON-STEM OR HEALTH CARE	12	6%	6	18%
Area, Ethnic, Cultural, Gender & Group Studies	2	1%	1	3%
Communication, Journalism, & Related Programs	1	0.5%	0	0%
Foreign Languages, Literatures, & Linguistics	1	0.5%	1	3%
History	1	0.5%	0	0%
Liberal Arts & Sciences, General Studies & Humanities	1	0.5%	0	0%
Multi-Interdisciplinary Studies	2	1%	1	3%
Other, Unknown	1	0.5%	0	0%
Psychology	2	1%	0	0%
Social Sciences	1	0.5%	2	6%
Visual & Performing Arts	0	0%	1	3%
TOTAL	186	100%	34	100%

¹⁴ Totals may not equal 100 percent due to rounding. Note that Business Management, Marketing, & Related Support Service graduates have been categorized as STEM graduates. In previous years, they were being reported as non-STEM majors. A closer review revealed that Management Information Systems and Management Science are the two majors within this major category that are considered eligible (high-demand, STEM) fields in which Scholars graduate.

APPENDIX C: POST-GRADUATION PLANS BY FIRST DEGREE MAJOR

First Degree Major	Directly Seek Workforce Entry (%)	Seek Further Education (%)	Neither (%)	Total (#)
Agriculture, Agriculture Operations & Related Sciences	100%	0%	0%	1
Area, Ethnic, Cultural, Gender & Group Studies	50%	50%	0%	2
Biological & Biomedical Sciences	39%	55%	5%	38
Business Management Marketing & Related Support Services	100%	0%	0%	4
Communication, Journalism & Related Programs	100%	0%	0%	1
Computer & Information Sciences & Support Services	89%	11%	0%	18
Education	33%	67%	0%	3
Engineering	85%	15%	0%	46
Engineering Technologies & Engineering Related Fields	86%	14%	0%	7
Family & Consumer Sciences Human Sciences	100%	0%	0%	1
Foreign Languages Literatures & Linguistics	0%	0%	100%	1
Health Professions & Related Programs	79%	21%	0%	33
History	0%	100%	0%	1
Liberal Arts & Sciences General Studies & Humanities	0%	0%	100%	1
Mathematics & Statistics	67%	33%	0%	6
Multi-Interdisciplinary Studies	50%	0%	50%	2
Natural Resources & Conservation	50%	50%	0%	2
Other, Unknown	100%	0%	0%	1
Physical Sciences	62%	31%	8%	13
Psychology	50%	50%	0%	2
Science Technologies Technicians	100%	0%	0%	2
Social Sciences	100%	0%	0%	1
TOTAL (#)	130	50	6	186

APPENDIX D: EMPLOYMENT STATUS OF JOB SEEKERS BY FIRST DEGREE MAJOR

First Degree Major	Employed: Outside Field (%)	Employed: Within Field (%)	Still Searching (%)	Total # of Respondents
Agriculture, Agriculture Operations & Related Sciences	100%	0%	0%	1
Area, Ethnic, Cultural, Gender & Group Studies	100%	0%	0%	1
Biological & Biomedical Sciences	20%	67%	13%	15
Business Management Marketing & Related Support Services	25%	50%	25%	4
Communication, Journalism & Related Programs	100%	0%	0%	1
Computer & Information Sciences & Support Services	0%	94%	6%	16
Education	0%	100%	0%	1
Engineering	5%	85%	10%	39
Engineering Technologies & Engineering Related Fields	17%	83%	0%	6
Family & Consumer Sciences Human Sciences	100%	0%	0%	1
Health Professions & Related Programs	4%	92%	4%	26
Mathematics & Statistics	0%	100%	0%	4
Multi-Interdisciplinary Studies	0%	100%	0%	1
Natural Resources & Conservation	0%	100%	0%	1
Other, Unknown	0%	100%	0%	1
Physical Sciences	25%	63%	13%	8
Psychology	0%	100%	0%	1
Science Technologies Technicians	50%	0%	50%	2
Social Sciences	0%	100%	0%	1
TOTAL (#)	15	104	11	130

APPENDIX E: LENGTH OF JOB SEARCH FOR EMPLOYED GRADUATES BY FIRST DEGREE MAJOR

First Degree Major	Less than 3 months	Between 4 & 6 months	Between 7 months & 1 year	Total (#)
Agriculture, Agriculture Operations & Related Sciences	100%	0%	0%	1
Area, Ethnic, Cultural Gender & Group Studies	100%	0%	0%	1
Biological & Biomedical Sciences	75%	17%	8%	12
Business Management Marketing & Related Support Services	67%	33%	0%	3
Communication, Journalism & Related Programs	100%	0%	0%	1
Computer & Information Sciences & Support Services	80%	20%	0%	15
Education	100%	0%	0%	1
Engineering	79%	15%	6%	33
Engineering Technologies & Engineering Related Fields	80%	20%	0%	5
Family & Consumer Sciences Human Sciences	100%	0%	0%	1
Health Professions & Related Programs	83%	17%	0%	23
Mathematics & Statistics	67%	0%	33%	3
Multi-Interdisciplinary Studies	0%	0%	100%	1
Natural Resources & Conservation	100%	0%	0%	1
Other, Unknown	100%	0%	0%	1
Physical Sciences	57%	29%	14%	7
Psychology	100%	0%	0%	1
Science Technologies Technicians	100%	0%	0%	1
Social Sciences	100%	0%	0%	1
TOTAL (#)	88	18	6	112

APPENDIX F: JOB APPLICATIONS & OFFERS – EMPLOYED GRADUATES

# of Job Applications Submitted: Within Field	% of Respondents
Less than 5	48%
5 to 10	19%
11 to 15	5%
16 to 20	8%
More than 20	20%

# of Job Applications Submitted: Outside Field	% of Respondents
Less than 5	75%
5 to 10	19%
11 to 15	4%
16 to 20	0%
More than 20	4%

# of Job Offers Received: Within Field	% of Respondents
None	9%
Only 1	41%
2 or 3	43%
4 or 5	5%
6 or more	3%

# of Job Offers Received: Outside Field	% of Respondents
None	65%
Only 1	21%
2 or 3	10%
4 or 5	3%
6 or more	1%

APPENDIX G: JOB APPLICATIONS & OFFERS – GRADUATES STILL SEEKING WORK

# of Job Applications Submitted: Within Field	% of Respondents
Less than 5	27%
5 to 10	9%
11 to 15	9%
16 to 20	18%
More than 20	36%

# of Job Applications Submitted: Outside Field	% of Respondents
Less than 5	56%
5 to 10	33%
11 to 15	0%
16 to 20	0%
More than 20	11%

Twenty-two percent of graduates still seeking work (n=2) have received a job offer but chose not to accept it.

APPENDIX H: COMPANIES OR ORGANIZATIONS WHERE WSOS GRADUATES ARE CURRENTLY EMPLOYED BY FIELD OF STUDY

Biological and Biomedical Sciences

- » Cellnetix Pathology and Laboratories
- » CVCH
- » LabCorp
- » Pacific Northwest Research Institute (Dudley Lab)
- » Takeda Pharmaceuticals
- » Target
- » University of Washington
- » University of Washington Department of Microbiology
- » University of Washington Medicine
- » Washington Conservation Corps
- » Zoom+

Computer and Information Sciences and Support Services

- » Self-employed
- » Amazon LLC
- » Apple Inc. Retail
- » Azuqua
- » Capital One Investing
- » Commerce-Architects
- » EMC – Isilon
- » Facebook
- » Gensco
- » Huron Consulting Group
- » MAQ Software
- » Microsoft
- » Nordstrom Technology
- » OpenMarket
- » SPIE
- » WildTangent

Engineering Technologies and Engineering-Related Fields

- » AP Consulting Engineers
- » Burns & McDonnell
- » Tableau Software
- » Zymogenetics
- » Accenture
- » Boeing
- » Capstone Technology
- » DTNA
- » Emerald City Engineers
- » Gibson Traffic Consultants
- » HP Inc.
- » Huntington Learning Center
- » HyperSciencea Inc.
- » King County Metro
- » Lean Environment Inc.
- » Lockheed Martin
- » Micron
- » Microsoft
- » Precision Image Analysis
- » Puget Sound Energy
- » Refinery in Northwest Washington
- » Schweitzer Engineering Labs
- » SpaceX
- » Synapse Product Development
- » Toray Composites (America), Inc.
- » Triumph Group, Inc.
- » Trivan Truck Body LLC
- » Turbine Test Services
- » Tyee Surveyors
- » Van Doren Sales, Inc.
- » Walsh Group

Health Professions and Related Programs

- » HealthPoint
- » Holistic Chiropractic Solutions
- » Kline Galland
- » MultiCare Tacoma General Hospital
- » Peace Health Southwest Medical Center
- » Pediatric Clinic
- » Pope's Kids Place
- » Portland Adventist Medical Center
- » Providence Health and Sciences
- » Providence Holy Family Hospital
- » Providence Sacred Heart Medical Center
- » Sea Mar Community Health Center
- » Seattle Children's Hospital
- » Spectrum Health Services
- » Swedish Hospital / Swedish Medical Center
- » Ukiah Valley Medical Center
- » University Of Washington Medical Center
- » WSU-Yakima County Extension Food Sense
- » Yakima Valley Memorial Hospital

Mathematics and Statistics

- » Aon
- » The Home Depot, Inc.

Physical Sciences and Science Technologies

- » Bartell Drugs
- » Clarkston School District
- » Kennewick School District
- » Northwest Center at Amazon.com
- » Puget Sound Naval Shipyard
- » Washington Conservation Corps (AmeriCorps)
- » Washington State Department of Fish and Wildlife
- » Edge Analytical

All Other Fields

- » Alaska Dental Arts
- » Brighton Jones
- » Davenport School District
- » Ellucian
- » Fife School District
- » Fred Hutchinson Cancer Research Center
- » Nex
- » Rockwood Clinic
- » Sono Bello
- » Student Conservation Network – Cooperative Placement with Naval Facilities Engineering Command Northwest
- » Washington State University

APPENDIX I: PERCEIVED IMPACT OF CAREER READINESS ACTIVITIES

General Career Readiness Activities

What level of impact did this career readiness activity have on your competitiveness in the job market?	# of Respondents Who Did This	Mean Score (1=No Impact; 4=Great Impact)	% Reporting Moderate or Great Impact
Participating in an internship or related activity	85	3.36	81%
Having your cover letter and/or resume reviewed	108	2.99	71%
Participating in a mentorship	43	2.86	65%
Participating in a mock interview	66	2.74	58%
Participating in a job shadow or industry site visit	61	2.74	57%
Participating in a networking event or informational interview	71	2.46	46%
Visiting a campus career center or career fair	100	2.33	44%
Updating LinkedIn profile	86	2.26	38%
Taking a career assessment	56	1.95	25%

WSOS-Specific Career Readiness Activities

What level of impact did this career readiness activity have on your competitiveness in the job market?	# of Respondents Who Did This	Mean Score (1=No Impact; 4=Great Impact)	% Reporting Moderate or Great Impact
Receiving WSOS networking assistance	19	2.05	37%
Utilizing WSOS web-based tools	20	2.15	35%
Attending WSOS-hosted career readiness session (e.g., EmpowerHer, Skills That Shine, industry site visit)	16	2.00	25%
Attending WSOS office hours on campus	11	1.64	18%

APPENDIX J: SCHOLAR FEEDBACK¹⁵

General Gratitude

- » The scholarship helped me greatly in that it helped keep me from racking up more school debt than I already had. I would highly recommend taking advantage of this wonderful opportunity.
- » I am very thankful for the resources I received and financial support!
- » Thanks!
- » so happy to be part of this! my husband now participates since he has gone back to school
- » I greatly appreciated the continuous support that the scholarship provided me. It greatly reduced the amount of tuition loans that I accumulated.
- » I am so appreciative of all that this program has done for me. It has made completing my bachelors degree possible and I am so thankful for all of the assistance I've received.
- » I am very happy to have gotten support from the WSOS program. It really helped lower the financial burden during my bachelor's degree studies!
- » Probably the most crucial part of getting a job is connections with industry or academia. Doesn't matter how good your grades are or what activities you participate in, knowing someone is the only way to go.
- » Thank you! WSOS was huge for me, it prevented me from taking out loans my last two years of undergrad. That eases the idea of taking out loans for grad school since scholarships/grants are difficult to come by in my field.
- » WSOS was a life saver, as I was really struggling with books and other expenses.
- » WSOS helped me financially so that I could focus more on my studies and gaining the experience that ultimately led to my acceptance to [University X's] DPT program
- » Thank uogoodness so much to this amazing scholarship program! I couldn't have paid for college without it.
- » Being a WSOS Scholar helped me achieve my dreams. I was able to study without worrying about the financial burden that can often discourage students.
- » This scholarship is one of the best scholarships out there. I received so much support and encouragement from all the staff I had encountered throughout my time as a student. I always recommend students interested in the STEM field to look into this scholarship.
- » I applied for and was granted the Wsos scholarship, I recover it initially at [X] community college, but it was then taken away because of the code assigned to my PA program through the [four-year institution to which I transferred]. I have more debt because of that, but it definitely helped me through my time at [X] community college and I'm very grateful for that! Thank you!
- » This was a great opportunity - the scholarship money made college much more affordable. I hope that someday the funds will extend to graduate school.
- » I wish I had been able to participate in more career help with WSOS. I appreciated all the financial help from the scholarship, I would not have been able to attend college without this help!
- » Thank you for giving prospective and current students the financial opportunity to better their education. Your assistance helped me out a lot.
- » WSOS made my college education that much more possible. Any STEM students who can tap into WSOS should. WSOS offered opportunities to become more educated on the job search process, networking opportunities, etc. that I did not utilize. I am sure they were beneficial,

¹⁵ This appendix provides all of the direct quotes from the open-ended response section of the survey. Responses have not been altered in any way other than to protect personally identifiable information; these alterations are noted with brackets. Responses that were coded in multiple areas are listed multiple times. The responses are in no particular order.

however. Networking opportunities make the job search that much easier in my opinion. Based on what I heard from other WSOS peers, the networking/education opportunities WSOS offered at [my school] were beneficial.

- » This scholarship allowed me complete my degree with minimum stress over tuition. Thanks to this scholarship I was able to attend my dream university and pursue my dream career. As a student that was on welfare, the scholarship provided opportunities and hope. It allowed me to move from a low income tier to high middle class straight out of college, which is extremely rare.
- » WSOS was instrumental in me being able to get my BSN and not be horribly in debt. I took the first job offered to me (which was at a place I first interned) so didn't need job search help. I quit that job and took my current one when the second place I interned at had an available position come up. I preferred the second place as I wanted to be involved in community health.
- » WSOS allowed me to continue my education which helped me to find a job I love. I would recommend starting the job search early. I started looking throughout my senior year of college which gave me multiple opportunities to practice my interview skills.
- » I very much appreciated the help I received From WSOS.
- » I loved it. Having a rep at WSU made the program extremely accessible. The auto-renewal made it stress free. I love you guys!!
- » It was easy money. School was made more accessible.
- » I am so thankful for this scholarship that I received during my time as an undergrad at [X] University. I am currently pursuing my master's degree in Physician Assistant Studies at the University of [X out of state]. I hope to return to Washington state after my graduation in about 2 years and work as a primary care provider in a rural setting in southwestern Washington. This scholarship helped me so much while at [my undergraduate institution] and gave me the confidence that I was on the right path by having this fund invest in my education. I am excited to hopefully add to the WSOS fund when I am financially able to so that I can help my fellow Washington native students achieve their goals as well. Thank you again so much.
- » There are many careers including Nursing that involve taking a board exam in order to become licensed and work. I think it would be great to have a license and certification assistance program for post-graduates. It is a financial burden to pay for some of these exams and preparation programs, especially when one does not pass at the first attempt. Thank you!
- » The ease of getting this scholarship was much appreciated. Being a single white male with average grades, I found it difficult to find find other scholarships that I qualified for.
- » Grateful.
- » Thank you again for the scholarship, it was a great help.
- » WSOS was extremely helpful to my ability to focus on school. I was fortunate to receive a great offer for a job from an internship and did not need to leverage any career resources.
- » WSOS is a great program and I don't think I could have afforded college without it!
- » WSOS allowed me to pursue a world-class education and end up where I am today - I am eternally grateful. I am now pursuing a PhD in Bioinformatics at [X University]. A suggestion I would make would be for WSOS to create/organize funded research opportunities with companies or academic institutions in Washington. Having people who can generate intellectual capital through research science is going to be of critical importance to maintaining a strong economic standing.
- » I enjoyed the WSOS events and meeting other scholars and companies
- » While WSOS provided a great service in giving me a scholarship and I am very grateful for their help, I found many of the employees working there extremely unprofessional and was under a lot of stress due to their mistakes. Over a span of 3 months they gave me misinformation, then when I tried to rectify the situation they again led me in the wrong direction and proceeded to do so for

the months to come. They then began to ignore my emails and I had to circumvent the people I was in correspondence with and directly contact their supervisors (who also did not apologize for the situation). All in all I found that the employees did not check their information before passing it along and their mistake ended up costing me a couple hundred dollars, which was later reimbursed after months of hassling them.

- » Simply offering the scholarship was a tremendous opportunity.
- » My ability to afford college was helped in large part by this scholarship, and I want to extend my gratitude to the organization. Additionally, I cannot say enough about the federal government's ability to employ STEM graduates, and the database of available careers at USAjobs. A federal resume for a scientist or a graduate in a technical field will take them very far, and should always be an option.
- » No, great program!

Gratitude for Financial Support

- » The scholarship helped me greatly in that it helped keep me from racking up more school debt than I already had. I would highly recommend taking advantage of this wonderful opportunity.
- » I am very thankful for the resources I received and financial support!
- » I greatly appreciated the continuous support that the scholarship provided me. It greatly reduced the amount of tuition loans that I accumulated.
- » I am very happy to have gotten support from the WSOS program. It really helped lower the financial burden during my bachelor's degree studies!
- » Thank you! WSOS was huge for me, it prevented me from taking out loans my last two years of undergrad. That eases the idea of taking out loans for grad school since scholarships/grants are difficult to come by in my field.
- » WSOS was a life saver, as I was really struggling with books and other expenses.
- » WSOS helped me financially so that I could focus more on my studies and gaining the experience that ultimately led to my acceptance to [X University's] DPT program
- » Thank uooodness so much to this amazing scholarship program! I couldn't have paid for college without it.
- » Being a WSOS Scholar helped me achieve my dreams. I was able to study without worrying about the financial burden that can often discourage students.
- » I applied for and was granted the Wsos scholarship, I recover it initially at [X] community college, but it was then taken away because of the code assigned to my PA program through the [four-year institution to which I transferred]. I have more debt because of that, but it definitely helped me through my time at [X] community college and I'm very grateful for that! Thank you!
- » This was a great opportunity - the scholarship money made college much more affordable. I hope that someday the funds will extend to graduate school.
- » I wish I had been able to participate in more career help with WSOS. I appreciated all the financial help from the scholarship, I would not have been able to attend college without this help!
- » Thank you for giving prospective and current students the financial opportunity to better their education. Your assistance helped me out a lot.
- » This scholarship allowed me complete my degree with minimum stress over tuition. Thanks to this scholarship I was able to attend my dream university and pursue my dream career. As a student that was on welfare, the scholarship provided opportunities and hope. It allowed me to move from a low income tier to high middle class straight out of college, which is extremely rare.
- » WSOS was instrumental in me being able to get my BSN and not be horribly in debt. I took the first job offered to me (which was at a place I first interned) so didn't need job search help. I quit

that job and took my current one when the second place I interned at had an available position come up. I preferred the second place as I wanted to be involved in community health.

- » It was easy money. School was made more accessible.
- » I am so thankful for this scholarship that I received during my time as an undergrad at [X] University. I am currently pursuing my master's degree in Physician Assistant Studies at [University X out of state]. I hope to return to Washington state after my graduation in about 2 years and work as a primary care provider in a rural setting in southwestern Washington. This scholarship helped me so much while at [my undergraduate university] and gave me the confidence that I was on the right path by having this fund invest in my education. I am excited to hopefully add to the WSOS fund when I am financially able to so that I can help my fellow Washington native students achieve their goals as well. Thank you again so much.
- » WSOS is a great program and I don't think I could have afforded college without it!
- » My ability to afford college was helped in large part by this scholarship, and I want to extend my gratitude to the organization. Additionally, I cannot say enough about the federal government's ability to employ STEM graduates, and the database of available careers at USAjobs. A federal resume for a scientist or a graduate in a technical field will take them very far, and should always be an option.

Gratitude for Programmatic Supports

- » I am very thankful for the resources I received and financial support!
- » This scholarship is one of the best scholarships out there. I received so much support and encouragement from all the staff I had encountered throughout my time as a student. I always recommend students interested in the STEM field to look into this scholarship.
- » WSOS made my college education that much more possible. Any STEM students who can tap into WSOS should. WSOS offered opportunities to become more educated on the job search process, networking opportunities, etc. that I did not utilize. I am sure they were beneficial, however. Networking opportunities make the job search that much easier in my opinion. Based on what I heard from other WSOS peers, the networking/education opportunities WSOS offered at my school [University X] were beneficial.
- » I enjoyed the WSOS events and meeting other scholars and companies

Provide and Promote Job Support Services

- » More emphasis in stem jobs
- » I wasn't aware that WSOS offers services to prepare for job hunting.
- » Probably the most crucial part of getting a job is connections with industry or academia. Doesn't matter how good your grades are or what activities you participate in, knowing someone is the only way to go.
- » I wish I was able to attend more career readiness events. Especially salary negotiation and mock interviews.
- » It would have been beneficial for me if I had assistance with job search activities prior to graduation. I was unaware of exactly what assistance WSOS provided.
- » I wish I had been able to participate in more career help with WSOS. I appreciated all the financial help from the scholarship, I would not have been able to attend college without this help!
- » WSOS made my college education that much more possible. Any STEM students who can tap into WSOS should. WSOS offered opportunities to become more educated on the job search process, networking opportunities, etc. that I did not utilize. I am sure they were beneficial, however. Networking opportunities make the job search that much easier in my opinion. Based

on what I heard from other WSOS peers, the networking/education opportunities WSOS offered at my school [University X] were beneficial.

- » It would have been helpful to know that WSOS provide more than just scholarships.
- » My participation in the WSOS association was very limited. I wish I had more opportunities to be involved. But I am very thankful for the opportunities.
- » It would be great if you guys hosted a career fair where the companies are actually looking for applicants to apply. Internships or fulltime. Been to a couple career events where all they would say is apply online which wasn't what people were looking for.

Other Feedback

- » Right after I graduate nursing school, I am planning to work in Portland, OR and then I want to find a job in Vancouver, WA.
- » I applied for and was granted the Wsos scholarship, I recover it initially at [X] community college, but it was then taken away because of the code assigned to my PA program through the [four-year institution to which I transferred]. I have more debt because of that, but it definitely helped me through my time at [X] community college and I'm very grateful for that! Thank you!
- » This was a great opportunity - the scholarship money made college much more affordable. I hope that someday the funds will extend to graduate school.
- » I was only granted the WSOS scholarship for 1 year. After which, my health related field (dietetics/nutrition) was not considered an applicable major for this scholarship. Nutrition is a profession that is growing widely, as people are realizing the immense role it plays in preventative health. I encourage WSOS to once again consider it as a major worth funding.
- » I currently work for a non-profit organization, while I prepare to apply for Doctorate programs to become a Family Nurse Practitioner.
- » There are many careers including Nursing that involve taking a board exam in order to become licensed and work. I think it would be great to have a license and certification assistance program for post-graduates. It is a financial burden to pay for some of these exams and preparation programs, especially when one does not pass at the first attempt. Thank you!
- » I was extremely lucky to have had my senior practicum where I am currently working. The relationships and connections made during that time greatly improved my prospects of getting hired.
- » WSOS allowed me to pursue a world-class education and end up where I am today - I am eternally grateful. I am now pursuing a PhD in Bioinformatics at [University X]. A suggestion I would make would be for WSOS to create/organize funded research opportunities with companies or academic institutions in Washington. Having people who can generate intellectual capital through research science is going to be of critical importance to maintaining a strong economic standing.
- » It would have been cool if there were buddies in the WSOS we were assigned to help us be accountable and such.

Tab F

New Ideas Brainstorm & Discussion

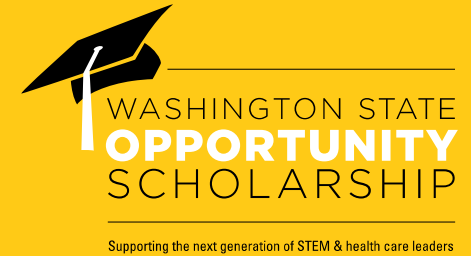
Professional-Technical Degree Programs



Proposal

- Expand current WSOS statute to include Scholarships for Professional Technical Degree programs
- Eligible Professional Technical Degree Programs
 - Professional/Technical Degree + High Demand + STEM or Health Care
 - Based on Career and Technical Colleges list & other sources

Professional-Technical Degree Programs



What is a Professional-Technical Degree?

- Professional-technical degrees train students for specific fields — like nursing, computer science or advanced manufacturing — so they can go straight to work.
- The degrees do not transfer to four-year universities. (An exception is the Associate in Applied Science-Transfer degree which transfers only if the university has an agreement with the specific community or technical college.)

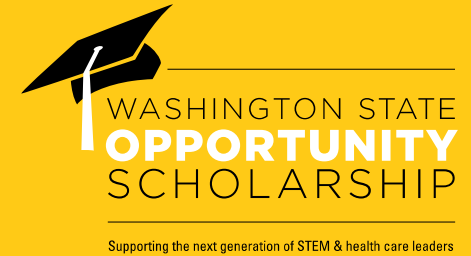
Professional-Technical Degree Programs



Are Professional-Technical Degrees High-Demand? **YES**

- Among the approximately 60,000 employers who hired in 2012, around 21 percent, or one in five, experienced difficulties finding qualified applicants.
- The credentials most frequently reported as difficult to find in applicants included vocational diplomas or certificates (59 percent), vocational associate's degrees (54 percent) and bachelor's degrees (52 percent).

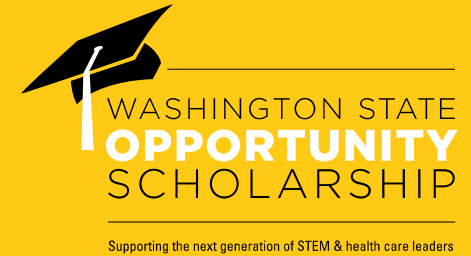
Professional-Technical Degree Programs



Summary of Legislative Options

- WAVE
- State Need Grant
- Opportunity Grant
- WSOS

Professional-Technical Degree Programs

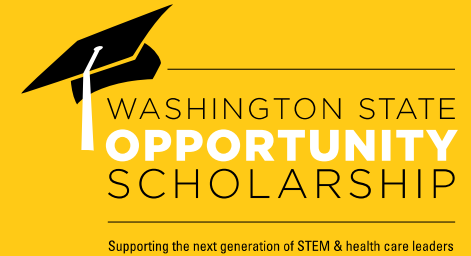


DISCUSSION

- Impact on four-year WSOS Scholarship
- Impact on programmatic aspect
- Advocacy considerations



WSOS Pre-Qualification

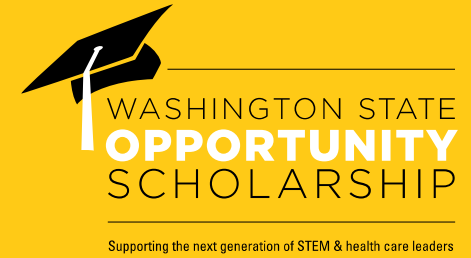


Proposal

- Pre-qualify students attending partner organization programs
 - Assists with recruitment of WSOS Scholars
 - Provides incentives for students to persist in effective partner organizations
- Potential partner organizations
 - College Success Foundation – Achievers Program
 - College Access Network
 - Summer Search
 - Rainier Scholars
 - Technology Access Foundation
 - Making Connections – UW Women's Center
 - ...many more!



WSOS Pre-Qualification



Discussion

- Impact on students not attending pre-qualified programs



Tab G

WSOS Staff Report

ACTIVITIES UPDATE | JUNE 2016

As summer approaches, the Washington State Opportunity Scholarship (WSOS) team is celebrating the selection of 1450 Cohort 5 Scholars who have been awarded scholarships in May, the graduation of over 600 additional Scholars this spring, the significant increase in STEM support programming, and the commitment of significant private contributions to help launch Washington's next generation of STEM and healthcare leaders.

The following provides a high-level summary of activities since the April 2016 WSOS Board meeting.

I. NEW SCHOLARS

This spring, 1450 talented and capable Washington students were notified that they were awarded the Washington State Opportunity Scholarship! These students will join 5,400 previous awardees who are all well on their way to becoming the future leaders who will fuel our innovation economy.

We'd like to take a moment to highlight the diverse characteristics of this year's selected Scholars:

- » Scholars hail from every legislative district
- » 57% are female
- » 64% identify as students of color
- » 69% are first generation college students
- » The median income of selects is \$39,062 and 68% are from the bottom family income quartile for their family size
- » Selected Scholars intend to major in the following fields:
 - 32% in health professions
 - 29% in engineering
 - 18% in computer science
 - 14% in research, science, and technical fields
 - 6% in all other high-demand, eligible areas (including 2% studying STEM education)

Computer Science	18%
Computer And Information Sciences And Support Services	18%
Engineering	29%
Engineering	26%
Engineering Technologies and Engineering-Related Fields	3%
Research, Science, Technical	14%
Biological And Biomedical Sciences	12%
Physical Sciences	2%
Health Professions	32%
Health Professions and Related Programs	32%
All Other Eligible, High-Demand	6%
Agriculture, Agriculture Operations, and Related	0.3%

Sciences	
Natural Resources and Conservation	0.5%
STEM Education	2%
Mathematics and Statistics	1%
Multi/Interdisciplinary Studies	2%
Business, Management, Marketing, and Related	
Support Services	0.3%

Also, congratulations to the following high schools who had the largest number of awarded students:

Enrolled High School	Cohort 5 Selected Scholars
Davis High School	35
Highline High School	28
Mount Tahoma High School	26
Foster High School	25
Cleveland High School	25
Renton High School	23
Edmonds Woodway High School	23
Eisenhower High School	21
Pasco High School	19
Franklin High School	19

Throughout the spring, WSOS officers were invited to present WSOS certificates to new recipients at senior celebration nights at high schools with significant selectee numbers (e.g., Highline High School, Foster High School, Edmonds Woodway High School and Global Connections High School). Most memorable was when Moa Arquiza, a C3 select, returned to her alma mater to help honor the 25 new selects (totaling \$562K in awards).

2016 CHAMPION STRATEGY RECAP

In October 2015, WSOS signed a service agreement to work with WA STEM and the statewide STEM networks. The scope of work included training for and working with all the WA STEM networks. Each network recruited teachers from high schools along with community members within each network for the expressed purpose of increasing application and selectee numbers for the 2016-17 Scholars of Cohort 5.

The work WSOS provided for this contract included: 1) the development of a PowerPoint slide presentation to be used consistently at each training; 2) handouts and recruitment materials given out at each training to use as resources while recruiting students during the WSOS recruitment period; 3) additional email support from WSOS staff as well as specific information for each school who participated in the training as to the numbers of students who started and finished the application (this information was used to follow up with students and answer questions); 4) additional support of up to \$200.00 for each school who participated in the training for recruitment materials and supplies for students.



With the assistance of the “Champions” teachers and community members, nearly 4,000 high school and college students submitted applications this year for a 77% increase over last year, with over 60% of the applicants meeting eligibility.

We are currently in the process of surveying the “Champions” asking them about efficacy of the training and the support which was received. Feedback from this survey will guide next year’s work with recruitment and WA STEM.

II. PROGRAMMING

BOEING MENTORSHIP PILOT PROGRAM UPDATE

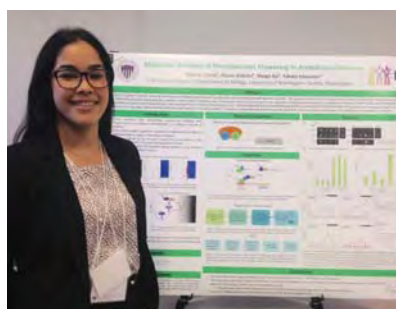
On June 13th mentors and mentees of the Boeing Mentorship pilot gathered for a night of fun at Puzzle Break.



Working in teams, Boeing mentors and WSOS Scholars tested their mental to break out of the Puzzle Break mystery room so that they could re-convene over dinner and celebration of learning and collaboration. These 17 Scholars were the first to partake in this program and their feedback (as well as the mentors) has fueled our ideas

and optimism for the future mentoring programs that we have launched with the help of our new Career Officer Caitlin and four program officers!

RESEARCH SYMPOSIA



Over 50 WSOS Scholars presented their research findings at Research Symposia at college campuses statewide. Had you been a fly on the wall at WSU, UW, CWU, EWU or UW Bothell, you could have brushed up on your understanding of planetary ground ice properties, Alzheimer’s Disease genetic risk in veterans with mild blast traumatic brain injury, and newly-found mammalian fossils from the early Paleocene of Montana. Our Scholars are so amazing!

INDUSTRY EXPLORATION

Our tech Scholars had their pick of Industry Exploration opportunities this spring with visits to **Apptio**, **Atlas**, and **TUNE**. Through product demonstrations and open conversations with employees, a total of 20 Scholars learned about career pathways in IT financial transparency, mobile marketing, and search engine informatics. And the experience didn’t stop there. Many of these Scholars took advantage of Apptio and Atlas recruiters’ offer to review their resumes after their visit!

In May, WSOS launched a partnership with the **Seattle Science Foundation** (SSF) and invited Scholars in healthcare and medicine to SSF’s Continuing Medical Education Courses and Cadaver Labs. One such Scholar, Molly Dols, attended the Annual Spine Trauma Summit alongside neurosurgeons, orthopedic spine surgeons, and allied healthcare professionals. Molly noted, “It was really helpful to see in real time the different surgical techniques

that were discussed during lectures. I got the most out of witnessing the decision-making processes of these world-class surgeons and thinking about how I could use that to guide my future work.”

Last but not least, biomedical and life sciences Scholars visited the **Center for Infectious Disease Research** to learn about the academic and career pathways to an exciting future in research. Scholars got an inside look at the lab facilities and met with the innovative scientists who take a systems biology approach to the fight against global infectious diseases.

WSOS is continuing to plan Industry Explorations into the summer. Future events will be hosted by the King County Department of Natural Resources and Parks, PACCAR, the Infectious Disease Research Institute, and the Seattle Science Foundation. In addition, we're looking forward to our first-ever Industry Exploration in Central Washington at Stemilt Growers in July!

INTERNSHIP AND EMPLOYMENT OPPORTUNITIES

WSOS has facilitated the placement of Scholars in summer internships at DevHub, Concur, Helix BioMedix, the Center for Infectious Disease Research, and the Allen Institute for Brain Science. With the help of our newly-acquired TalentSonar platform, we are able to share collections of Scholar resumes directly with hiring managers. Current campaigns include summer internships at CMC Biologics, summer internships and permanent positions at Expeditors International, and permanent positions through the CDI Corporation (Microsoft).

SKILLS THAT SHINE MENTORSHIP

As the inaugural Boeing Mentorship Pilot comes to a close, WSOS is preparing to roll out the Skills That Shine (STS) Mentorship program statewide. WSOS aims to recruit 200+ professionals across the STEM and healthcare fields to serve as volunteer mentors by September. These mentors will be paired with WSOS Scholars in their sophomore or junior year pursuing a degree related to their field. The STS content developed by the Boston Consulting Group is currently being tailored so that it may be utilized by mentors and mentees one-on-one rather than in a group setting. Instructive videos, worksheets, and discussion guides will be provided to help mentees accomplish key milestones during the program such as creating a professional resume and preparing for an interview.

OPPORTUNITY LAUNCH

Opportunity Launch is a two and a half day conference for new 2016 selectees of the Washington State Opportunity Scholarship. It will take place at the University of Washington on August 8th through 9th. Over 200 new Scholars from Eastern and Western Washington will be in attendance. All transportation and conference expenses will be covered by Washington State Opportunity Scholarship to ensure equitable access to these Scholars. The goals of the event are to support our new Scholars in: 1) learning more about the Washington State Opportunity Scholarship and related services, 2) learning strategies for getting the most out of their college experience, and 3) meeting other Scholars attending their specific college/university.

III. DONOR CULTIVATION AND FUNDRAISING EVENTS, ADVOCACY AND MEDIA

2016 GEEKS GIVE BACK

WSOS is sole beneficiary of this year's GeekWire "Geeks Give Back" campaign presented by Bank of America. We are increasing our goal to an ambitious \$1 million which will include the fundraising totals garnered through this fall's OpportunityTalks Breakfast.



The public kick off for the Geeks Give Back campaign is the GeekWire Summit on October 5 & 6. Event attendees will be able to register for OpportunityTalks Breakfast during the Summit registration process.

2016 OPPORTUNITYTALKS GRIT

Mark your calendars for October 25th at 7:00am at the Sheraton for the 2016 OpportunityTalks event. We are delighted to announce the co-chairs for the breakfast: Anthony DiBlasi, WA President of Bank of America, Peter Hamilton, CEO of TUNE, and Kathy Surace-Smith, VP, Corporate Secretary and General Counsel of NanoString Technologies.



Costco Wholesale has renewed its \$50,000 commitment as Title Sponsor as has the Boeing Company at the \$10,000 level. The Sinegal Family Foundation has increased its generous support to \$20,000.

The Executive Leadership Committee (ELC) has 20+ confirmed members who are committed to acting as Table Hosts for individual tables of 10. With a goal of 800 attendees, we are looking for additional Table Hosts who support the mission of WSOS.

The theme of the 2016 event is GRIT and keynote speaker Dr. Angela Duckworth says it can predict success! Duckworth is a professor of psychology at the University of Pennsylvania and a co-founder of the Character Lab. An expert in non-I.Q. competencies like grit and self-control, she was awarded a 2013 “Genius” Grant and has advised the White House, World Bank, NBA and NFL teams and Fortune 500 CEOs. Her TED talk on grit has garnered nearly seven million views and her first book, *Grit: The Power of Passion and Perseverance*, just published in May.

As you well know, there are no greater examples of true grit than the remarkable Opportunity Scholars we have the pleasure of funding. I hope you will look forward to hearing from them and Dr. Duckworth this fall!

IV. MEDIA

EARNED MEDIA

Spring quarter is an exciting time of celebration at WSOS. From April through June, we announce and welcome newly selected Scholars, congratulate new college graduates around the state, and remind current Scholars to renew and/or increase their scholarship for the upcoming academic year. This year, these announcements and campaigns have resulted in a variety of wonderful earned media coverage as well as ongoing, broad-reaching engagement with our growing social media audiences.

We are thrilled and grateful for the strong earned media coverage we received to not only recognize and celebrate student success, but to increase awareness and support of the program in communities across Washington.

Coverage Summary:

- » This state scholarship may be breaking the cycle of poverty | **Seattle Times**, May 26
- » Show and Tell: Opportunity Scholars at Mount Tahoma | **Tacoma News Tribune**, May 29
- » Royal, Wahluke students score big STEM scholarships | **The Royal Register**, South Grant County, May 25
- » Local college-bound students to receive unique scholarship to help tuition costs | **KIMA**, Yakima, May 23
- » Tri-City seniors receive \$1 million from state scholarship fund | **Tri-City Herald**, May 21
- » Over \$1 million in STEM-focused scholarships awarded to Tri-Cities students | **KERP**, Tri-Cities, May 20
- » Spokane County, WA Students to Receive Unique STEM-Focused Scholarship | **Greater Spokane Incorporated**, May 13
- » Snohomish County students to receive \$2.8M in scholarships | **Edmonds Beacon**, May 12
- » Editorial: Focused scholarships a smart investment | **Spokesman Review**, May 12
- » South King County and Seattle Students to Receive Unique STEM-Focused Scholarship | **The Road Map Project**, May 12

- » SPS Students Awarded Scholarships: Franklin and Cleveland Among Top in State | **Seattle Public Schools News**, May 9

SOCIAL MEDIA

Social engagement continues to grow rapidly and remains a key channel through which we communicate with Scholars, community partners and the public.

Key social media growth and impressions April 4-June 13, 2016:

Facebook

- » 2,313 followers Apr. 4, 2016
- » 2,502 followers June 13, 2016 **(+8%)**
- » Total impressions (paid & organic): **111,308**

Twitter

- » 1,235 followers Apr. 4, 2016
- » 1,305 followers June 13, 2016 **(+6%)**
- » Total impressions (paid & organic): **42,200**



5 #MSD25 students received the WA @OppScholarship & we could not be prouder! @Microsoft @Boeing @College_Success
pic.twitter.com/2nvsbM18UY



5 15

Top Tweet earned 954 impressions

WSOS Staff and Scholars #CelebrateSuccess with @RoadMapProject
pic.twitter.com/M1FDphE16Y



6 12

V. NEW STAFF

JOANNA MOZNETTE

In April 2016, we hired Joanna Moznette for the Program Officer position in Spokane. Her focus will be working with Scholars at central Washington schools as well as develop business partnerships for Industry Explorations and mentoring and internships with WSOS Career Officer Caitlin Spence. Joanna was formerly with Washington State University Spokane as the Spokane MESA (Mathematics, Engineering Science Achievement) program for fifteen years as a Program Assistant and as Director.

Tab H

Finance & Investment Report

Agenda

WSOS Investment & Finance Committee Meeting

June 14, 2016, 2:00pm - 3:00 pm

Call-in: 877.366.0711 – PIN: 819-453-48#
WSOS in CR-Executive

- | | | |
|----|------------------------------|------------|
| 1. | Call to Order | Mack H. |
| 2. | Approval of 04/05/16 Minutes | Mack H. |
| 3. | WSIB Report | Allyson T. |
| 4. | Financial Update | Darrell P. |
| 5. | Executive Session | Mack H. |
| 6. | Adjourn | Mack H. |

NEXT MEETING: September 20, 2016
2:00pm – 3:00pm



Supporting the next generation of STEM & health care leaders

FINANCE & INVESTMENT COMMITTEE MEETING MINUTES | TUESDAY, APRIL 5, 2016

Members present via teleconference: Mack Hogans, Chair; George Zinn, Carolyn Kelly, Peter Harvey, Joe Gaffney, and Bob Moser

Others present via teleconference: Naria Santa Lucia (WSOS Executive Director), Darrell Powell (CSF Chief Financial & Administration Officer, Allyson Tucker (Washington State Investment Board), Karyl Gregory (WSOS Staff), and Debra Wilson (CSF Staff)

Mack Hogans, Committee Chair, called the meeting of the Washington State Opportunity Scholarship (WSOS) Finance and Investment Committee to order at 2:04 pm.

Approval of Minutes from December 7, 2015 Finance and Investment Committee

Bob Moser made a motion and Joe Gaffney seconded the motion to approve the minutes of the December 7, 2015 meeting. The motion carried.

WSIB Report

Allyson Tucker, CFA – Senior Investment Officer at the Washington State Investment Board (WSIB), provided a performance review of WSOS funds invested through February 29, 2016.

In response to a question regarding how quickly funds are invested, Tucker reported that when WSIB receives notification of funds, they are invested the same day.

Tucker noted that while equity markets had a bad start in 2016, they were beginning to rally in February, and performance was strong in March.

The GET program (which is invested in bond funds) is seeing some withdrawals, but many are in wait and see mode with what will happen with the program.

Harvey asked what fees are charged by WSIB. Tucker responded that WSIB charges 2 basis points on top of the administrative fee. No management fee is charged on the fixed income portfolio. Tucker will follow up with fees paid on global equity funds and cash. She also reiterated that all performance numbers are reported net of fees.

Financial Update

Darrell Powell, Chief Financial Officer for the College Success Foundation (CSF is the WSOS program administrator), provided an update on WSOS finances and investments through January 31, 2016.

Powell reported that the WSOS Balance Sheet now totals \$113M in assets which includes a \$5M pledge payment from Boeing and \$20.3M in receivables invoiced to the State of WA, which match private contributions. He also noted that the Scholarship Transfer Revenue on the Income Statement reflects dollars that are being released from restriction, i.e. from contributions received in prior years.



Supporting the next generation of STEM & health care leaders

In future months, Powell will be able to tie cash flow back to the Balance Sheet. He will coordinate with Tucker to ensure both entities are reporting on the same time periods.

Legislative Update

Naria Santa Lucia reported that the Attorney General's Office is not likely to allow investment in private equities because funds are still sufficiently state funds and restrictions apply. The alternative is a constitutional amendment but this Committee and the Board probably will not pursue that.

Bob Moser, CSF Board Chair, asked if we could change our current asset allocation to effectively achieve an 80/20 blended goal between private endowment and state endowment funds. Tucker, Santa Lucia and Powell will follow up with recommendations to the Committee.

Naria Santa Lucia further reported that \$6M was approved in the back of the State budget for the Opportunity Expansion Fund. This fund originated as the result of a tax credit received from Microsoft. WSOS invited Washington state educational institutions to submit Letters of Interest to increase the number of WSOS students or WSOS-like students at their institution who graduate in computer science, engineering, or teaching of STEM (K-12) resulting in an overall increase in the total number of Washington state graduates in those fields. A committee was formed and met to review all the Letter of Interest submissions. Formal applications were requested from the following five finalists: Central Washington University, Renton Technical College, University of Washington, University Washington Bothell, and Western Washington University. The committee will reconvene to review the five grant proposals and recommend 1-3 of them to the Board for the one-time funding support. The WSOS Board will approve the final grantee selection at their June board meeting.

Committee Members

Hogans reported that while Terry Gillespie is no longer a member of the Finance & Investment Committee, we have added Gary Rubens as a member. More members are needed on the Committee and recommendations of individuals with strong finance and investment experience should be sent to Hogans and Santa Lucia. The term is not defined but Hogans recommends a three year term and then re-assess.

Hogans further recommended that terms should be set up now for current Committee members and arrange the terms to be staggered. Gaffney indicated he would be willing to rotate off in 1-2 years when he hits the six year mark. All Committee members are committed to initiating a staggered system.

The meeting adjourned and the Committee went into Executive Session at 2:55 pm.

Respectfully submitted,
Mack Hogans



**Washington State
Investment Board**

**WSOS Investment and Finance Committee
Portfolio Review
June 14, 2016**



Allyson Tucker, CFA – Senior Investment Officer



Overview of the Washington State Investment Board (WSIB)

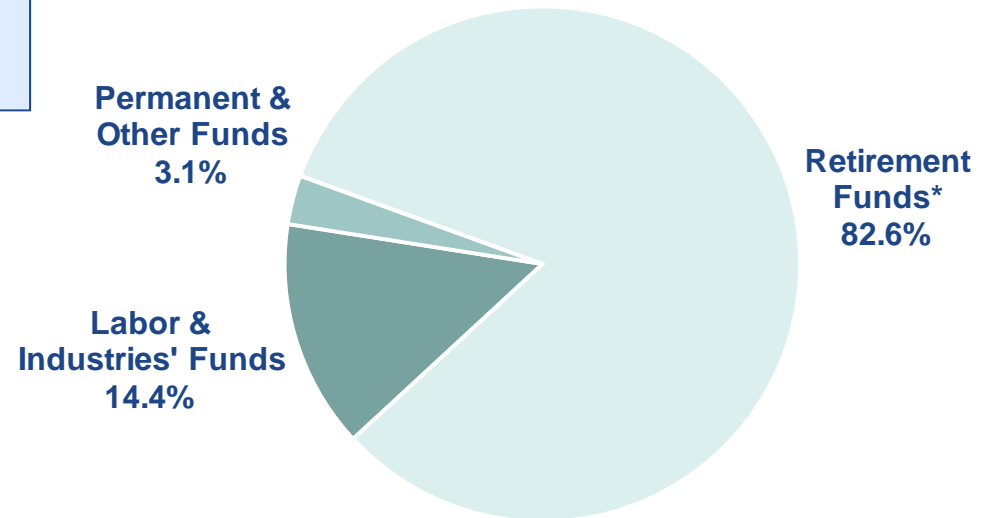


The WSIB invests on behalf of 35 funds

- ▣ 17 Retirement Funds
- ▣ 5 State Insurance Funds
- ▣ 13 Permanent and Other Trust Funds

**Assets Managed by the WSIB
as of April 30, 2016
\$107.9 Billion**

Washington State Opportunity
Scholarship program falls under the
Permanent and Other Trust Funds



*Defined Benefit Fund, Defined Contribution Funds, and Higher Education Retirement Plan



WSIB Governance Structure



Board comprised of 15 members has investment authority

- ▣ 10 voting – represent system stakeholders
- ▣ 5 investment professionals (non-voting) – selected by voting members for their investment expertise

	Appointment Authority	Name	Position
10 Voting	Ex-Officio	James McIntire	State Treasurer
		Marcie Frost, Chair	Director, DRS
		Joel Sacks	Director, Labor & Industries
	Senate President	Mike Hewitt	State Senator
	House Speaker	Timm Ormsby	State Representative
	Governor	Judy Kuschel	Active Member, PERS
		George Masten	Retired Member, PERS
		Kelly Fox, Vice Chair	Active Member, LEOFF
	Superintendent of Public Instruction	Arlista Holman	Active Member, SERS
		Stephen Miller	Active Member, TRS
5 Investment Professionals	Selected by the Board	Robert Nakahara	
		Jeffrey Seely	
		David Nierenberg	
		William Longbrake	
		Richard Muhlebach	



Overview of the Washington State Opportunity Scholarship Program (WSOS)



The WSOS was created by the Legislature in 2011. The WSOS board selected the WSIB to invest on its behalf in March 2014

Investment Objectives

- ❑ Maintain the financial stability of the program
- ❑ Ensure sufficient assets are available to fund the scholarship goals of the program over a 10-year time horizon
- ❑ Subject to one and two above, manage the assets to maximize return at a prudent level of risk
- ❑ Invest in a manner that will not compromise public confidence in the program

Time Line





Early Growth of WSOS Funds



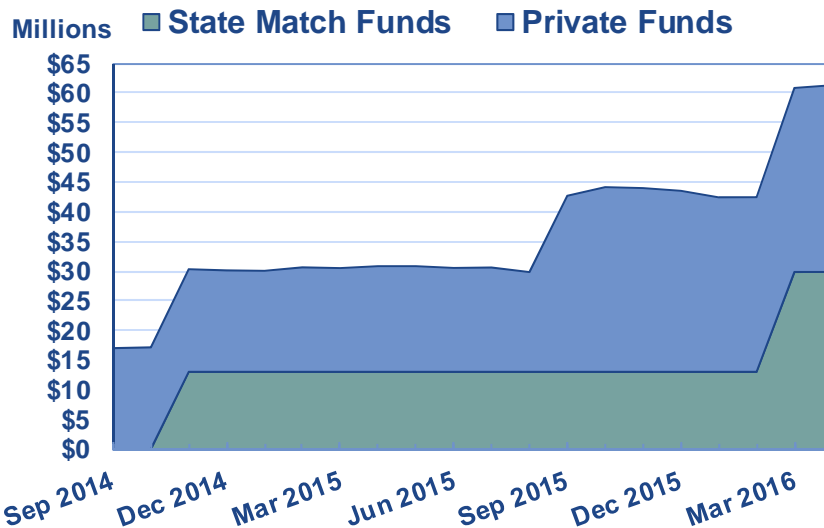
Scholarship Account

- Total assets as of April 30, 2016, were \$61.3 million, comprised of 51% private funds and 49% state match funds

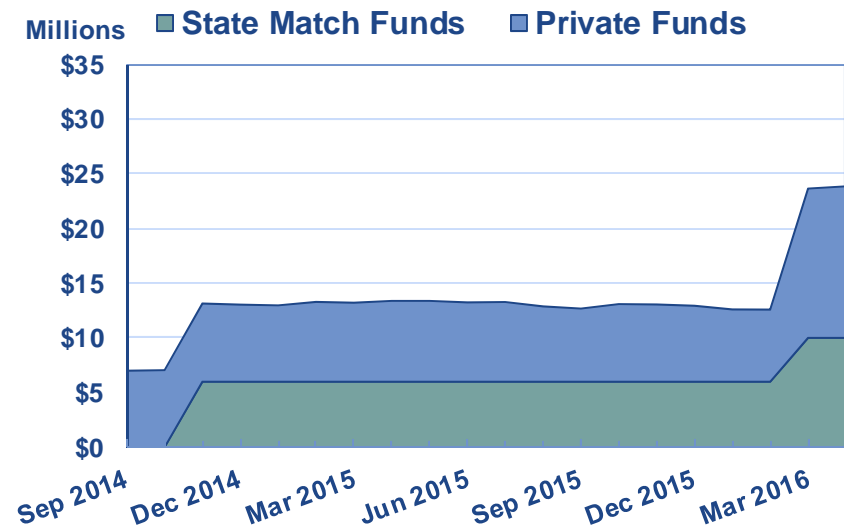
Endowment Account

- Total assets as of April 30, 2016, were \$23.9 million, comprised of 58% private funds and 42% state match funds

Growth of Scholarship Account Assets



Growth of Endowment Account Assets



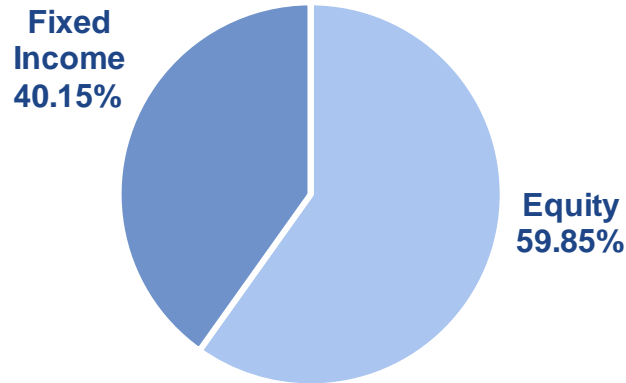


WSOS Scholarship Account

Private Funds

April 30, 2016 Allocation

Market Value \$31,474,737



The Equity portfolio is passively managed by BlackRock and is expected to closely track the MSCI All Country World Investable Market Index

The Fixed Income portfolio is actively managed by WSIB staff and is expected to meet or exceed the Barclays U.S. Intermediate Credit Index

The Cash portfolio is invested in a money market fund managed by BlackRock

Current Targets

	Target	Range
Cash	0%	0% - 5%
Public Equity	60%	55% - 65%
Fixed Income	40%	35% - 45%

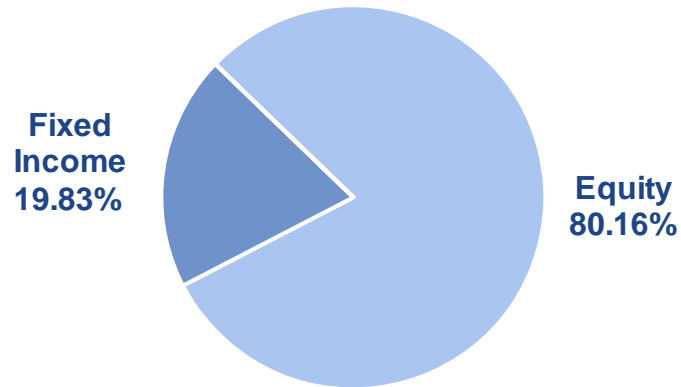


WSOS Endowment Account

Private Funds

April 30, 2016 Allocation

Market Value \$13,851,678



The Equity portfolio is passively managed by BlackRock and is expected to closely track the MSCI All Country World Investable Market Index

The Fixed Income portfolio is actively managed by WSIB staff and is expected to meet or exceed the Barclays U.S. Intermediate Credit Index

The Cash portfolio is invested in a money market fund managed by BlackRock

Current Targets

	Target	Range
Cash	0%	0% - 5%
Public Equity	80%	75% - 85%
Fixed Income	20%	15% - 25%



WSOS Scholarship and Endowment Accounts

State Match Funds

April 30, 2016

Scholarship Market Value	\$29,843,431
Endowment Market Value	\$10,006,683

State match funds are held in cash

Both the target and current allocation are 100% cash

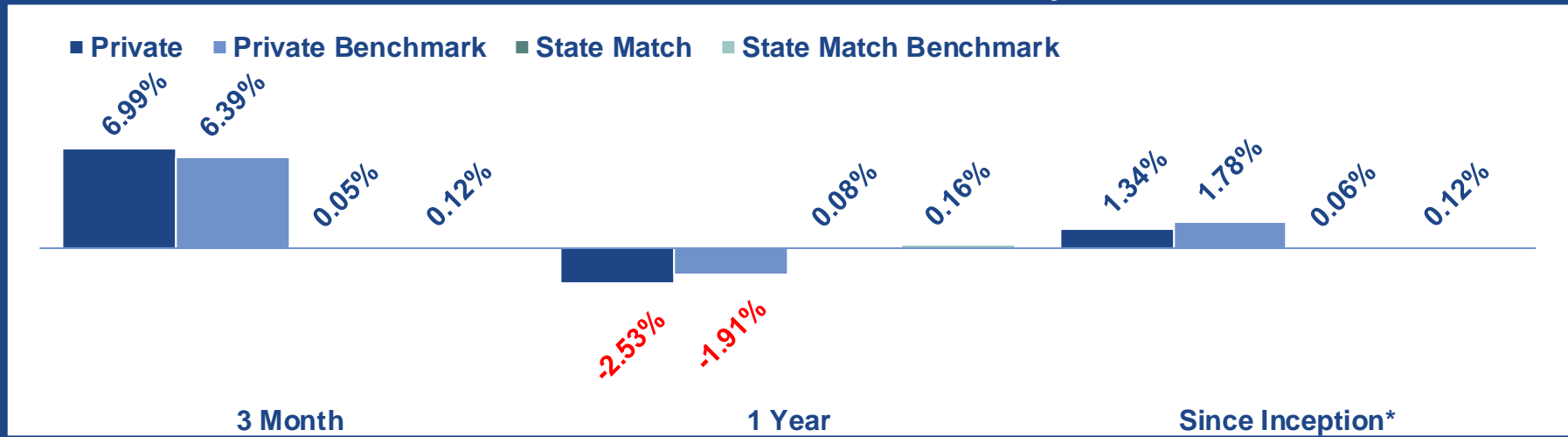
The cash portfolios are invested in a government and agency money market fund managed by BlackRock



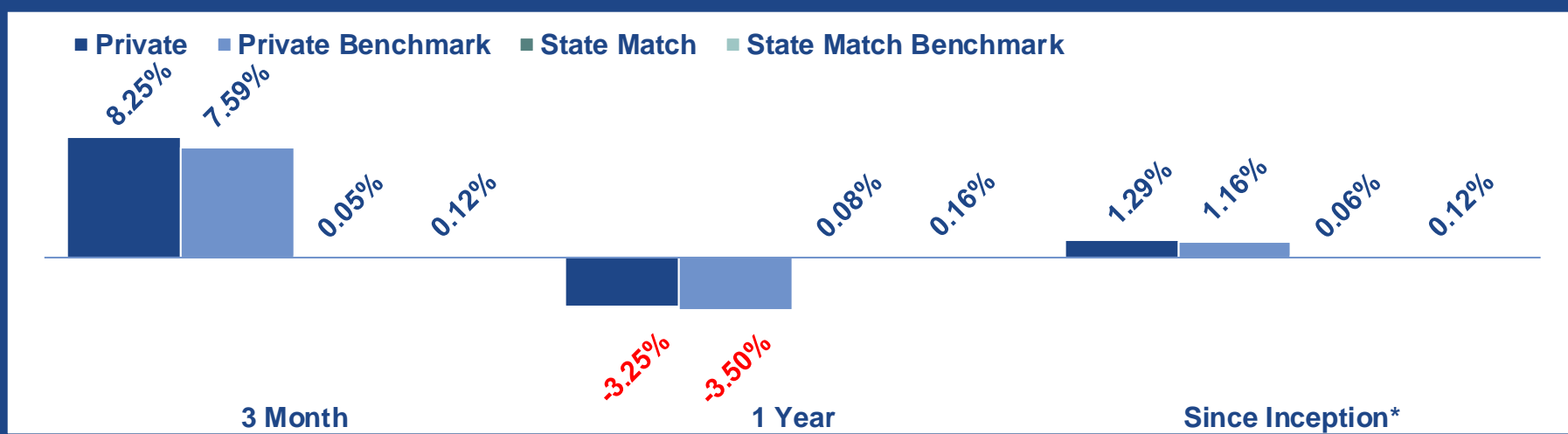
Early Account Returns

April 30, 2016

Private and State Match Scholarship



Private and State Match Endowment



Scholarship Benchmarks: Private 60% MSCI ACWI IMI w/U.S. Gross & 40% Barclays Intermediate Credit, State Match 90 Day T-bill
 Endowment Benchmarks: Private 80% MSCI ACWI IMI w/U.S. Gross & 20% Barclays Intermediate Credit, State Match 90 Day T-bill
 * Since Inception: Private 10/1/14, State Match 11/25/14

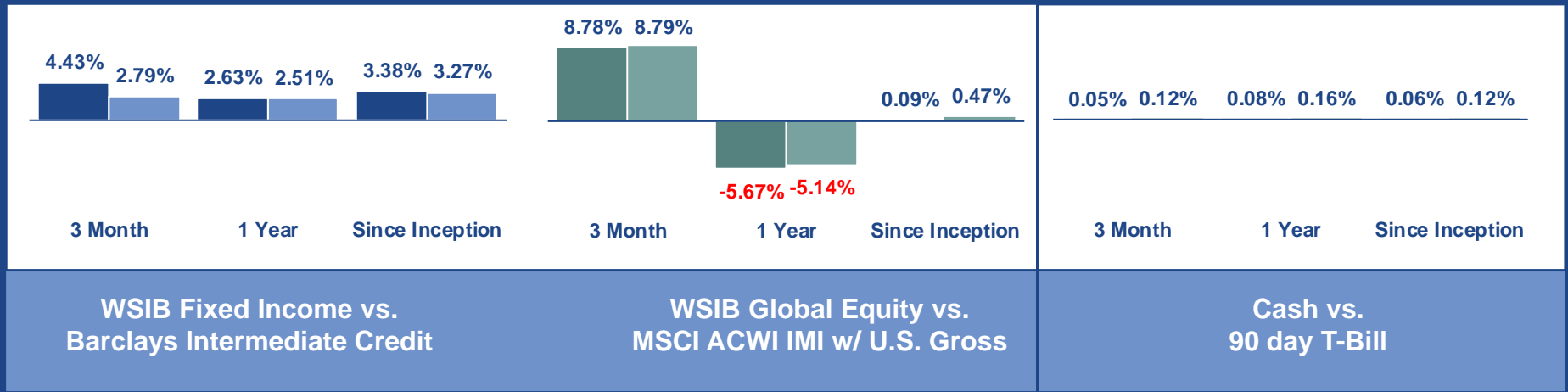


WSIB Fund Performance Compared to Market Indices

April 30, 2016

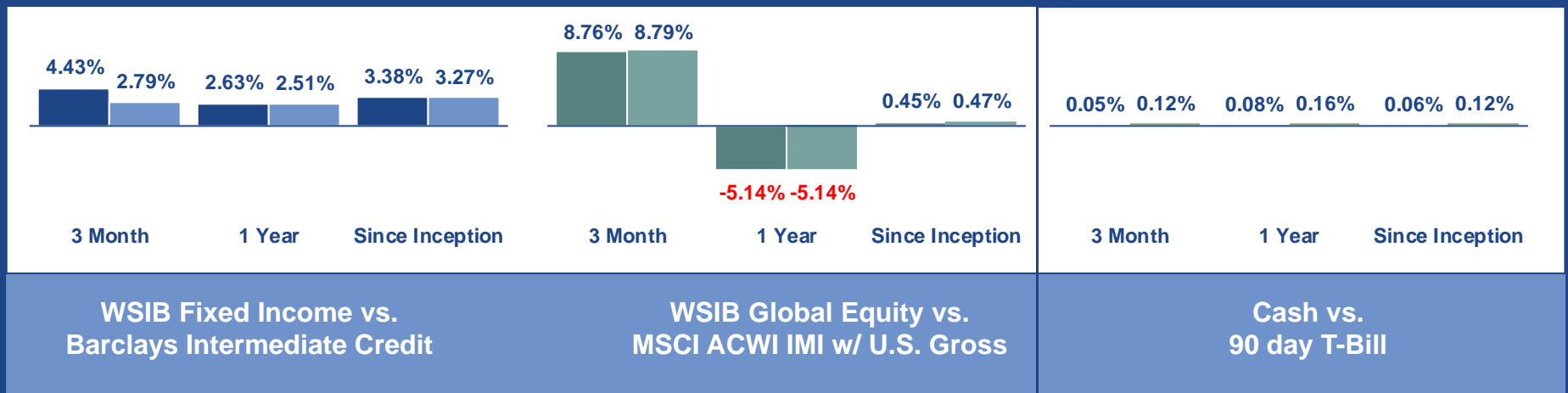
Private Scholarship

State Match Scholarship



Private Endowment

State Match Endowment



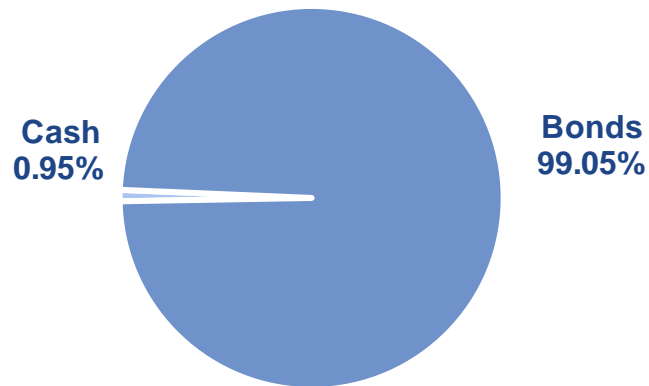


Bond Fund Characteristics & Top 10 Credit Issuers

March 31, 2016

Allocation

Market Value **\$1,761,765,895**



Top 10 Credit Issuers

Glencore International AG	1.06%
International Finance Corp.	0.98%
Ontario, Province of	0.93%
Burlington Northern Santa Fe Corp.	0.90%
Cencosud SA	0.90%
Walgreens Boots Alliance, Inc.	0.89%
Allergan, Inc.	0.89%
Air Products and Chemicals, Inc.	0.89%
Macquarie Bank Ltd.	0.88%
Sempra Energy	0.88%

Characteristics

	Fund	Index
Average Maturity	4.9 years	4.9 years
Yield to Maturity	2.95%	2.46%
Modified Duration	4.30	4.34
Average Coupon	3.52%	3.54%
Number of Holdings	256	4,350

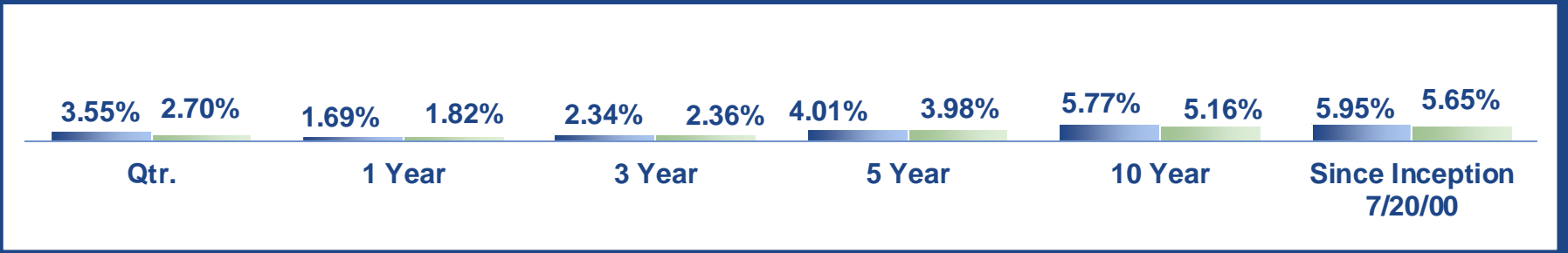


Bond Fund Performance, Industry Distribution & Ratings

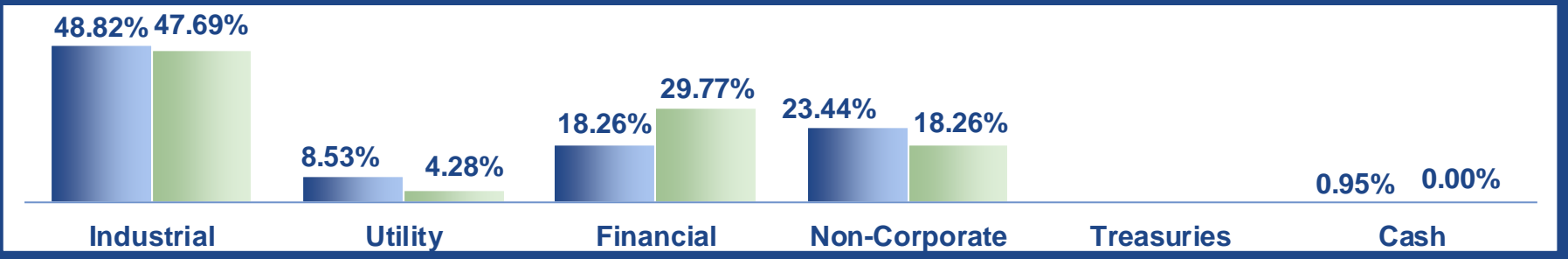
March 31, 2016

Fund Index

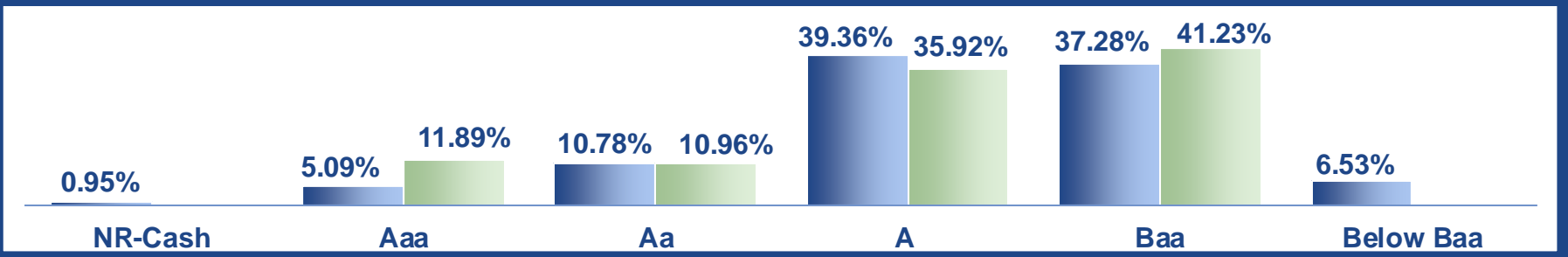
Total Return



Industry Distribution



Moody's Equivalent Ratings





Contact Information



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Address: 2100 Evergreen Park Drive SW
P.O. Box 40916
Olympia, WA 98504-0916

Phone Number: (360) 956-4600

FINANCE UPDATE



Finance/Investment Committee Meeting | June 14, 2016

WSOS Balance Sheet

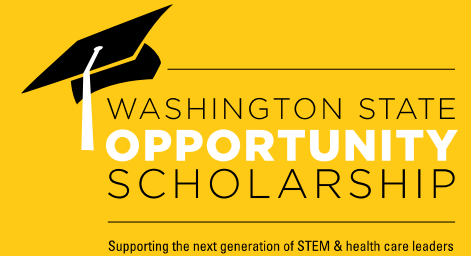


Supporting the next generation of STEM & health care leaders

Washington State Opportunity Scholarship
Comparative Balance Sheets
Period Ending April 30, 2016

	Comparison to FYE			Notes	Comparison to Same Period LFY		
	06/30/2015	% Change	04/30/2016		04/30/2015	% Change	04/30/2016
Assets							
Cash	2,904,702	-16%	2,440,355		2,898,692	-16%	2,440,355
Investments	53,193,782	60%	85,177,161	1	48,147,132	77%	85,177,161
Pledges and Grants Receivable	24,589,382	1%	24,811,235		30,867,350	-20%	24,811,235
Prepaid Expenses	6,784	292%	26,600		4,373	0%	26,600
Total Assets	80,694,650	39%	112,455,351		81,917,547	37%	112,455,351
Liabilities and Net Assets							
Accounts Payable	138,872	-11%	123,923		82,354	50%	123,923
Payroll Related Liabilities	104,715	24%	130,277		80,625	62%	130,277
Scholarship Commitments	30,643,979	-31%	21,285,449		19,832,686	7%	21,285,449
Total Liabilities	30,887,565	-30%	21,539,648	2	19,995,665	8%	21,539,648
Net Assets							
Temporarily Restricted Net Assets	28,702,659	133%	66,879,735		40,866,273	64%	66,879,735
Permanently Restricted Net Assets	21,104,425	14%	24,035,968		21,055,609	14%	24,035,968
Total Net Assets	49,807,085	83%	90,915,703	3	61,921,882	47%	90,915,703
Total Liabilities and Net Assets	80,694,650	39%	112,455,351		81,917,547	37%	112,455,351

WSOS Balance Sheet



Notes to the Financials

1. Increase in investments reflect \$20.3M State match plus private contributions.
2. Scholarship Commitments reflect \$9.4M of scholarships paid in the current year.
3. Net Assets includes \$42.2M in Scholarship Contribution Revenue in fiscal 2016.

WSOS Income Statement



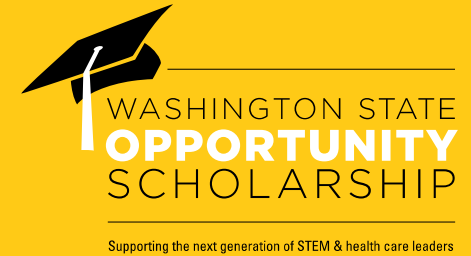
Washington State Opportunity Scholarship

Income Statements

Income Statement for the Ten (10) Months Ending April 30, 2016

	Ten Months Ended April 30, 2016			Notes	FYE June 30, 2016
	Actual	Budget	Variance Fav (Unfav)		Annual Budget
Revenue					
Private	21,901,409	10,000,000	11,901,409	1	10,000,000
Public	20,354,000	17,000,000	3,354,000	2	17,000,000
Scholarship Transfer Revenue	9,357,696	11,124,239	(1,766,544)	3	11,105,800
Investment Income	451,895	-	451,895		-
Total Revenue	52,064,999	38,124,239	13,488,866		38,105,800
Expense					
Scholarship	9,357,696	11,124,239	1,766,544	3	11,105,800
Salaries and Benefits	603,026	619,639	16,613		746,714
Program Other Direct	444,692	373,889	(70,803)	4	424,880
Allocated Indirect Overhead	163,160	149,029	(14,131)		175,737
Professional Fees - CSF Admin Support	376,625	374,862	(1,763)		451,950
Professional Fees - Contractors	40,139	-	(40,139)	5	-
Total Expense	10,985,337	12,641,658	1,656,321		12,905,081
Net Income (Loss)	41,079,662	25,482,581	15,145,186		25,200,719

WSOS Income Statement



Notes to the Financials

1. Ballmer Foundation gift of \$11M.
2. The State match invoice includes \$3.5M of Ballmer gift.
3. Scholarship expenses are trending lower than what was budgeted.
4. Event expenses higher than budgeted.
5. Professional fees were not budgeted for services other than CSF Program Administrator fees.

WSOS Cash Flow



Washington State Opportunity Scholarship

Cash Flow Summary

Inception-To-Date

April 30, 2016

	Inception - April 30, 2016			
	<u>Scholarship</u>	<u>Endowment</u>	<u>Total</u>	
<u>CASH FLOW</u>				
Cash Inflow:				
Boeing	12,500,000	12,500,000	25,000,000	
Microsoft	27,500,000	-	27,500,000	
Other Private	15,485,399	1,015,578	16,500,977	
State	40,354,000	10,000,000	50,354,000	
Investment Income	956,687	364,081	1,320,767	
Total Cash Inflows	96,796,086	23,879,659	120,675,744	
Cash Outflow:				
Scholarships	(26,746,146)	-	(26,746,146)	
Program Expenses	(6,292,648)	(20,666)	(6,313,314)	
Total Cash Outflows	(33,038,794)	(20,666)	(33,059,460)	
Net Cash Flow Inception-To-Date & Balance of Cash & Investments April 30, 2016	63,757,292	23,858,992	-	87,616,284
WSOS US Bank Account	2,428,395	-	2,428,395	
Oppenheimer Account	10,728	-	10,728	
Balance per WSIB April 30, 2016	61,318,169	23,858,992	85,177,161	

Tab I

2016-18 WSOS Program Administrator Contract

(to be finalized later)

& FY17 Budget

Program Administrator Contract



- RFP Process: College Success Foundation selected as FY17-18 WSOS Program Administrator
- CSF will provide two sets of services:
 - CORE SERVICES: Human Resources, Finance, Operations, and Information Technology (\$335,656)
 - ADDITIONAL ACTIVITIES: Scholarship Services, Data Management, and Advocacy (\$350,786)
- Resolution: Provide WSOS Board Chair the ability to continue negotiations and finalize the FY17-18 Program Administrator Contract

FY17 Budget



Supporting the next generation of STEM & health care leaders

- Increase in expenses due to an increase in the # of Scholars, increase in staff, and expansion of program offerings

REVENUE	17WSOSProposed	16 Approved
Private Contributions	\$ 10,000,000	\$ 10,000,000
Event Sponsorships & Contributions	\$ 1,000,000	\$ 500,000
Washington State Match	\$ 21,000,000	\$ 17,000,000
REVENUE TOTAL	\$ 32,000,000	\$ 27,500,000
Scholarships	17WSOSProposed	16 Approved
Scholarship Expense	\$ 14,974,911	\$ 13,493,962
Scholarship Liability		
SCHOLARSHIP EXPENSE SUBTOTAL	\$ 14,974,911	\$ 13,493,962
WSOS Personnel	17WSOSProposed	16 Approved
WSOS Salaries	\$ 773,198	\$ 558,000
Personnel Benefits - All Staff	\$ 224,227	\$ 172,980
Staff Contingencies		\$ 15,720
PERSONNEL SUBTOTAL	\$ 997,425	\$ 746,700
CONSULTING/PURCHASE OF SERVICES	17WSOSProposed	16 Approved
Occupancy (CSF)		\$ 30,000
Data Management	\$ 45,000	
Research and Evaluation (CSF)		\$ 93,000
Development & Advocacy (CSF)	\$ 44,246	\$ 62,000
Scholarship Select/Award Services (CSF)	\$ 261,540	\$ 208,000
Scholarship Promotion (CSF)		
Scholarship Support Services (CSF)		
CONSULTING/POS SUBTOTAL	\$ 350,786	\$ 393,000
PROGRAM EXPENSES	17WSOSProposed	16 Approved
Program Expenses	\$ 233,816	\$ 174,280
Administrative Expenses	\$ 111,000	\$ 105,100
Development/Advocacy Expenses	\$ 157,500	\$ 145,500
CSF Core Services	\$ 335,656	\$ 234,687
PROGRAM EXPENSES SUBTOTAL	\$ 837,972	\$ 659,567
TOTAL Non-Scholarship Program Expenses	\$ 2,186,182	\$ 1,799,267
TOTAL EXPENSES (Scholarship, Program, Admin)	\$ 17,161,093	\$ 15,293,229
DIFFERENCE	\$ 14,838,907	\$ 12,206,771