Strategic Workforce Initiative (SWI) Proposal—Cybersecurity

Partnership—Weber State University (WSU), through the College of Engineering, Applied Science & Technology (EAST) and the School of Computing, a departmental unit within the college is applying for Strategic Workforce Initiative funding for a cooperative project between the following education partners:

- Weber State University—Dean David Ferro, College of Engineering, Applied Science & Technology; Dr. Brian Rague, Associate Dean
- Davis School District—Kristina Yamada, CTE Coordinator
- Morgan School District—Robert Kilmer, CTE Director
- Northern Utah Academy for Math, Engineering, and Science (NUAMES Charter School)—Nate Taggart, Director of Business Operations
- Ogden School District—Tim Peters, CTE Executive Director
- Weber School District—John Donley, CTE Coordinator Weber Innovation High School
- Ogden-Weber Technology College (OWTC), Monica Schwenk, Development Director; Jennifer Streker, Program Director; David Everton, Computer Technology Coordinator
- Davis Technology College (DTC), Kinley Puzey, Director of Technical Programs

Proposal—Weber State University will partner with Davis, Morgan, Weber, and Ogden School Districts; Ogden-Weber Technology College; Davis Technology College; and the Northern Utah Academy for Math, Engineering, and Science (NUAMES) to provide a stackable credential pathway for the high need area of

Cybersecurity, which falls under the Software Development and Information Technology strategic industry cluster identified by GOED.

According to the Utah Department of Workforce Services Occupational Projections for 2016-2026, positions related to Computer and Mathematical areas, which includes cybersecurity, is expected to increase at an annual growth rate of 4.4%.

WSU's Network Management Technology (NMT) program offers certificates; and associate, and bachelor degrees, providing a number of entry and exit points for students with each successive step providing students access to an advanced degree and associated higher wages, as well as a skillset that allows for earlier access to available employment through internships, two of the goals of the Strategic Workforce Initiative.

WSU proposes to substantially accelerate the Cybersecurity career pathway beginning with secondary school students enrolled in Concurrent Enrollment by offering the five courses needed for the first stackable credential: WSU Cybersecurity Essentials Certificate of Proficiency. Currently, only Layton High School offers networking courses that can apply to the cybersecurity area. Secondary schools have a difficult time finding qualified instructors to teach these concurrent enrollment courses. Therefore, we propose teaching these courses through Weber State faculty providing the training through distance education and/or online options as well as leveraging articulations, instruction, and existing cybersecurity programs made available through the Ogden-Weber and Davis Technical colleges.

As part of the proposed pathways, WSU plans to strengthen its Cybersecurity programs and emphasis at the Ogden and Davis campuses, as well as expanding WSU's longstanding relationship with SLCC/Taylorsville by further promoting and growing WSU BS Network Management Technology degrees for students who earn their AAS degree at SLCC.

The five university courses that allow students to obtain the Cybersecurity Essentials Certificate of Proficiency are

- NET 2200, Cybersecurity and System Fundamentals
- NET 2300, Introduction to LAN Management
- CS 1030, Foundations of Computing
- CS 1400, Fundamentals of Programming
- WEB 1400, Web Design and Usability

Thus, high school students could complete this 17-credit certificate from Weber State University while attending high school. Moreover, students will have 17 of the 40 major course credits required for the Network Management Technology Associate of Science degree. These students can be even further ahead if they take other general education concurrent enrollment courses such as English and mathematics.

Because courses and student experiences in Cybersecurity are not fully developed in several of the partner high schools, existing course offerings and cybersecurity programs provided by Ogden-Weber Technical College and Davis Technical College will significantly support student progress through this pathway, especially in the networking, information technology, and security areas included in the Cybersecurity Essentials Certificate of Proficiency, as well as industry recognized certifications such as A+, Network+, and Security+. In addition, WSU, DTC, and OWTC will work collaboratively to offer a summer workshop for high school students focusing on the application of Cyber Security, Information

Management and Defense, and Ethical hacking, which are skillsets sought by industry and government organizations dedicated to protecting sensitive electronic data and records.

To maintain excellence in cybersecurity instruction and establish a seamless transition for students to critical, high-paying cybersecurity positions in government and industry, WSU will seek the designation of National Center of Academic Excellence in Cyber Defense Education (CAE-CDE), which is certified by the National Security Agency and the Department of Homeland Security.   The only Utah institutions that currently hold this distinguished designation are Brigham Young University and Southern Utah University. By developing an effective cyber program that satisfies the requirements of CAE-CDE, Weber State University will provide a quality cybersecurity education to the adult and traditional student populations of northern Utah on par with what is available to SUU and BYU students.

Network Management Technology/Cybersecurity Student Data—Table 1 illustrates the Fall Semester 2017 enrollment for these courses at WSU as well as concurrent enrollment courses in the area high schools as well as the 2015-16 student enrollment, attainment rates, and job placement rates for the AAS, BS, and MS degrees. The goal of this proposal is to connect with more high school Computer Science students and get them to complete the first Stackable Credential in this high need area while in high school.

Table 1 Cybersecurity Stackable Educational Credential Student Data

Cybersecurity Stackable Educational Credential Student Data			
	Student Enrollment 2017-2018	Attainment Rates	Job Placement Rates
Cybersecurity Essentials Certificate of Proficiency (high school students only)	NET 2200 - 11 NET 2300 – 0 CS 1030 - 313 CS 1400 - 176 WEB 1400 - 66	NA New proposal	NA
Network Management Technology Associate of Applied Science	94	16	90+ %
Network Management Technology Bachelor of Science	130 Majors	23	90+ %

Stackable Sequence of Credentials— To meet the growing demand for cybersecurity professionals, students need to start early in cybersecurity classes in networking, computer science, and web technology in secondary schools. With stackable credentials started in high school, continued and/or completed at the Tech Colleges and Weber State University, these students can realistically become IT professionals who start their own companies, lead the Department of Defense in computer security or F-35 sustainment, or become tech industry leaders. As shown in the following stackable sequence, students enter during high school completing the WSU Cybersecurity Essentials Certificate of Proficiency as concurrent enrollment courses or in conjunction with articulated courses at the Tech Colleges, and can exit to internships leading to employment or additional educational levels. The following are the three educational stackable credentials:

1. Cybersecurity Essentials Certificate of Proficiency
2. Associate of Applied Science Degree in Network Management Technology
3. Bachelor of Science Degree in Network Management Technology.

Students may also earn industry recognized certifications at the Tech Colleges including A+, Network+, and Security+.

The detailed courses for the Cybersecurity Stackable Credentials are shown in Figure 1.

Figure 1: Strategic Workforce Cybersecurity Stackable Credentials

Cybersecurity Stackable Credentials

Step 1: WSU Cybersecurity Essentials Certificate of Proficiency
(High School Concurrent Enrollment/Technical College Articulations)

Step 1: High School (17 credits)	Credits	Step 1: Technical College
NET 2200 Cybersecurity and System Fundamentals	3	Articulations with WSU Cybersecurity Essentials Certificate:
NET 2300 Introduction to LAN Management	3	Ogden-Weber Technical College (Table 3)
CS 1030 Foundations of Computing	4	Davis Technical College (Table 4)
CS 1400 Fundamentals of Programming	4	Industry Recognized Certifications:
WEB 1400 Web Design and Usability	3	Network+, Security+, A+, Linux+
Total	17	

Weber State University or Salt Lake CC

Step 2: Associate of Science in Network Management Technology
(WSU Ogden/Davis Campuses or SLCC/Taylorsville Campus)

Network Management/Major Courses Required	Credits	Gen Ed/Support Courses Required	Credits
NET 2415 Cisco TCP/IP Routing Protocols & Router Config	3	ENGL 2010 EN Intermediate College Writing	3
NET 2435 Cisco Adv LAN & WAN Switching & Router Design	3	MATH 1040 QL Introduction to Statistics	3
PS 3250 Business Communication	3	WEB 1700 Introduction to Computer Applications	3
EET 1110 Basic Electronics	2	LIBS 1704 Information Navigator	1
CS 2130 Computational Structures	4	ECON 1010 SS Economics as a Social Science	3
CS 2550 Introduction to Database Design & SQL	4	COMM 2110 HU Interpersonal/Small Group Comm	3
CS 2810 Computer Architecture/Organization	4	American Institutions AI Elective	3
NET 3200 Linux Systems Administration	3	Pysical/Life Science (PS/LS) Elective	3
Total	26	Total	22

Weber State University

Step 3: Bachelor of Science in Network Management Technology

Network Management Courses Required	Credits	Support Courses Required	Credits
NET 3300 Advanced LAN Security Management	3	WEB 3400 LAMP Stack Web Development	3
NET 3310 Network Server Administration	3	CS 3030 Scripting Languages	4
NET 3550 Supervising Information Technology	3	CS 3705 Protocol Analysis	4
NET 3710 Switching & Transmission Network Systems Mgt	3		
NET 3715 Transmission Network Applications	2	Life Science (LS) Elective	3
NET 3720 Advanced Transport Media	3	Physical Science (PS) Elective	3
NET 3730 Cyber Policy and Ethics	3	Creative Arts (CA) Elective	3
NET 4700 Data and Voice Network Design	3	Diversity/Social Science (DV/SS) Elective	3
NET 4760 Network/Telecommunications Internship	3	Humanities (HU)/Creative Arts (CA) Elective	3
NET 4790 Network/Telecommunications Senior Project	2		
NET 4740 Security Vulnerabilities & Intrusion Mitigation	4		
Total	32	Total	26

Figure 2 contains the employment opportunity path, strategic workforce on-ramps and off-ramps, for students.

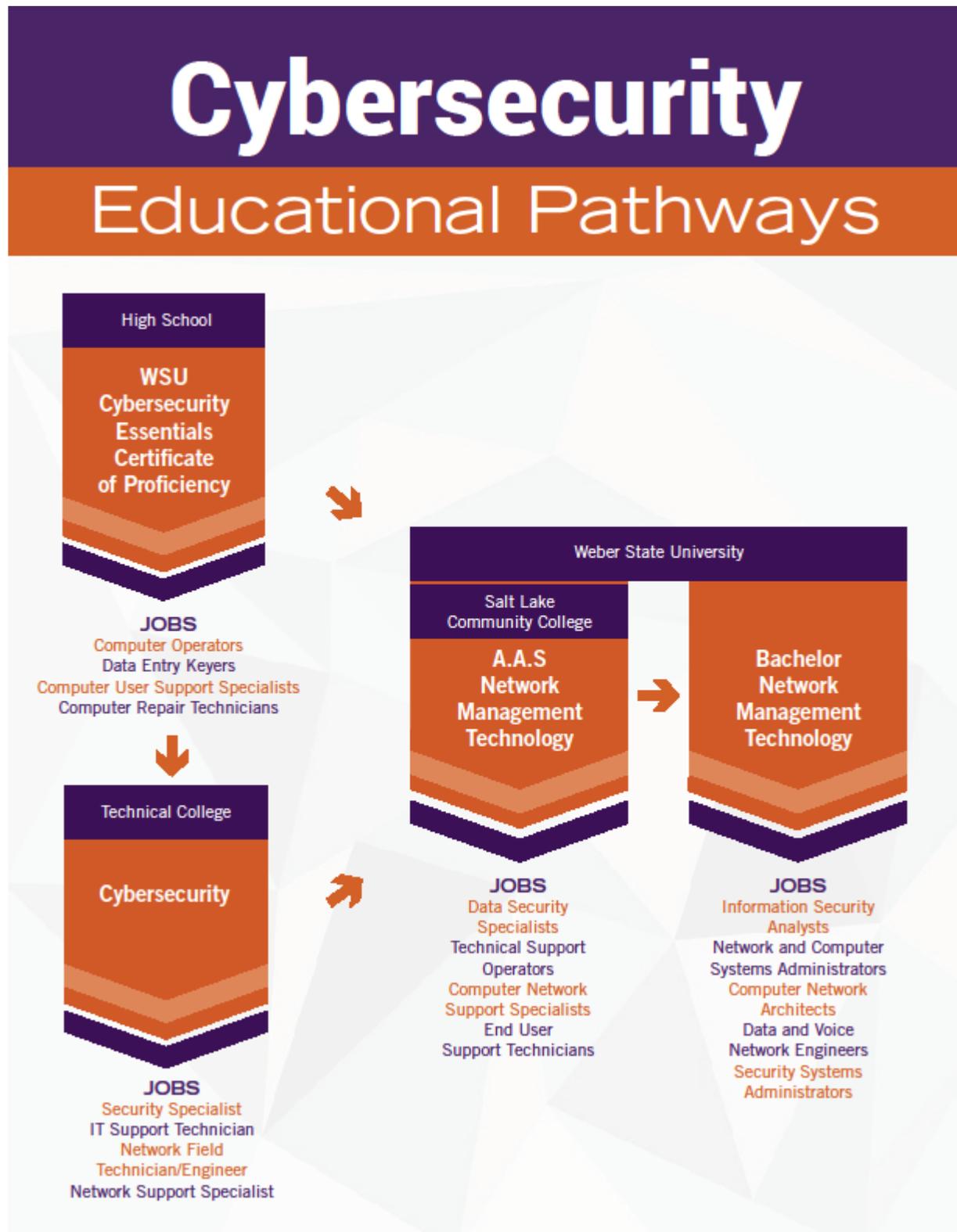*Figure 2: Strategic Workforce On-Ramps and Off-Ramps*

Cybersecurity
Educational Pathways

High School

WSU Cybersecurity Essentials Certificate of Proficiency

JOBS
Computer Operators
Data Entry Keyers
Computer User Support Specialists
Computer Repair Technicians

Technical College

Cybersecurity

JOBS
Security Specialist
IT Support Technician
Network Field Technician/Engineer
Network Support Specialist

Weber State University

Salt Lake Community College

A.A.S Network Management Technology

Bachelor Network Management Technology

JOBS
Data Security Specialists
Technical Support Operators
Computer Network Support Specialists
End User Support Technicians

JOBS
Information Security Analysts
Network and Computer Systems Administrators
Computer Network Architects
Data and Voice Network Engineers
Security Systems Administrators

Table 2 shows Weber State University articulations with Davis Technical College (DTC).

Table 2: Weber State University Articulations with Davis Technical College	
Weber State University	**Davis Technical College**
Weber State articulates the following courses with Davis Tech, equaling 17 credits, which can be applied to the WSU Associate of Applied Science Degree in Network Management Technology.	
NET 2200, Cybersecurity and System Fundamentals	ITEC 1356 CompTIA A+ Essentials 2016 and ITEC 1456 CompTIA A+ Practical Applications 2016
NET 2300, Introduction to LAN Management	ITEC 2208 CompTIA Network+ 2015 or ITEC 2209 CompTIA Network+ 2018
CS 1030, Foundation of Computer Science	SDEV 1000, Introduction to Software Development and SDEV 1031, Software Development Fundamentals or ITEC 1000, Introduction to Information Technology and ITEC 1035, Database and Scripting Fundamentals
CS 1400, Fundamentals of Programming	SDEV 2210, Java Programming I or SDEV 2410, C# Programming I
WEB 1400, Web Design and Usability	DMDC 2005, Responsive Web Design with HTML5/CSS3 or ITEC 1022, HTML5 and CSS3 or SDEV 1021 Web Development Fundamentals

Table 3 shows Weber State University articulations with Ogden-Weber Technical College (OWTC).

Table 3: Weber State University Articulations with Ogden-Weber Technical College	
Weber State University	**Ogden-Weber Technical College**
Weber State articulates the following courses with Ogden-Weber Tech, equaling 17 credits, which can be applied to the WSU Associate of Applied Science Degree in Network Management Technology.	
NET 2200, Cybersecurity and System Fundamentals	ITEC1615 A+ Certification I and ITEC1620 A+ Certification II
NET 2300, Introduction to LAN Management	ITEC 1505 Network+

CS 1030, Foundation of Computer Science	PROG1001 Foundations of Computer Science
CS 1400, Fundamentals of Programming	PROG2830 Java Programming I and PROG2835 Java Programming II
WEB 1400, Web Design and Usability	MDTC2111 HMTL and CSS and MDTC2415 UI Development

Evidence of Support from Industry Advisory Group/Local Industry--The WSU Network Management Technology Advisory Committee and local industry have affirmed support for this proposal by supporting jobs and internships early in a student's educational path. Support of the project is wide ranging, from relatively small, privately held organizations, to large international firms and aerospace industries.

Hill Air Force Base—Dan W. Christenson, Director of Engineering, has provided a letter of support (see Appendix A)

BT Mack Technology Group—Larry Welch, Managing Partner, has provided a letter of support (see Appendix A)

L-3—Randall Hughes, Manager, Systems & Software Quality Assurance, stated, "L-3 CS-West has a long and productive history of working with the Weber State University School of Computing. The university has an excellent track record of providing a pool of co-op talent from which I personally have hired several students. CS-West in Salt Lake City currently has multiple job postings in our various software/firmware areas. Currently, we have approximately 300 software engineers working in several disciplines including user interfaces, embedded computing and other high speed networked communication solutions."

Woodbury Technologies—Karen Woodbury, CEO and President of WT, Inc., stated, "Woodbury Technologies plans to continue working with the Weber State University School of Computing in 2018-19. We will hire approximately 50 employees next year in software positions. Currently, we have 96 employees in software engineering, systems managers, database administrators, information security administrators, and network engineers."

PacifiCorp—Darin Meyers, capital manager for engineering, network communications and planning, stated, "PacifiCorp treats network and cybersecurity as one of its top areas of focus.   Keeping its power network grid and system assets safe and reliable are of utmost concern. The need for local individuals who possess the network security skills to protect company assets is high and continually evolving. The company would be interested in interviewing and potentially hiring graduates from the Weber State University School of Computing who have an emphasis in cybersecurity. Finding employment candidates with these skills is generally challenging, and being able to have job applicants from a local, quality school like Weber State University would be a great benefit to the company."

Braintrace—Braintrace is a cybersecurity firm based in Salt Lake City. On approval from the President of Braintrace, Kate Riley, Director of Information Security and Compliance, issued the following statement: "Braintrace is very interested in interviewing and potentially hiring graduates from Weber State University School of Computing who have an emphasis in cybersecurity. Braintrace talent includes software engineers working in disciplines related to software engineering, cybersecurity, network administration, and governance, risk and compliance. Braintrace is always interested in hiring talent and in the development of students."

Strong Connexions, Inc. — Strong Connexions, Inc. is an engineering firm headquartered in Salt Lake City, providing cybersecurity services to defend an organization's networks, systems, and information. Jared Hoskins, COO, EVP Sales & Business Development, issued the following statement: "Strong Connexions, Inc. is very interested in interviewing and potentially hiring graduates from Weber State University School of Computing who have an emphasis in cybersecurity. Currently, we have approximately 4 security engineers working in disciplines related to cybersecurity, network, and Unified Communications. We can hire up to 10 students per year in these areas."

Board of Regents Support—The Board of Regents will send a separate message of support.

USTC Board of Trustees Support—The USTC Board of Trustees will send a separate message of support.

Cybersecurity/Network Management Workforce Needs—A recent survey of more than 19,000 cyber security professionals found that the world is expected to face a shortfall of 1.8 million cyber security workers by 2022, a 20 percent increase from the projection made by a similar study in 2015 (esecurityplanet.com.)

Table 2 illustrates the number of Utah job openings and wages for job titles at the various levels of education.

Table 2 Employment Information (Source: DWS unless otherwise indicated)

Utah Cybersecurity/Network Management Employment Needs and Wages					
Stackable Educational Level	Job Title	*Projected Annual Statewide Job Openings*			Median Wage Per Hour
		Current Employment	Projected Employment	Total Annual Openings	
Cybersecurity *Certificate of Proficiency*	Data Entry Keyers	4,133	4,701	110	14.70
	Computer Operators	334	310	--	19.81
	Computer User Support Specialist	7,799	11,246	450	21.07
Network Management Technology *Associate of Applied Science*	Data Security Specialist	*Annual Wage: $59,490			
	Technical Support Technician	*Annual Wage: $36,674			
Network Management Technology *Bachelor of Science*	Computer Network Support Specialists	1,621	2,203	80	25.33
	Information Security Analysts	354	489	20	35.47
	Network and Computer Systems Administrators	3,794	5,142	180	35.47
	Computer Network Architects	803	1,122	40	46.49
	Computer Occupations, all	2,658	3,529	120	35.27
*Salaries in Utah (Glassdoor.com)					

Funding Request Items—The budget requested to support this proposal is listed in Table 3.

Table 3 Budget

Weber State University Ogden/Davis Campuses	
Funding Need—One-time money	**Budget**
Distance Learning Lab Create an Interactive Video Conferencing (IVC) room to initiate and facilitate distance learning from WSU and/or OWTC and DTC. The room includes instructor station, classroom microphones, cameras, and computers. Can facilitate up to 15 distance locations. Can broadcast live or recorded.	$40,000
Funding Need—Ongoing	
Cybersecurity Faculty Training This training is essential for faculty to stay current in cybersecurity $10,000 per person – Ongoing training is necessary to ensure that faculty are current with changing cybersecurity trends, tools, techniques, and procedures. Faculty can then incorporate their current knowledge into appropriate class experiences. Training typically involves course fees, course materials, and travel to the training site.	$50,000

Year 1: National Security Agency/Department of Homeland Security Center of Academic Excellence (NSA/DHS-CAE) Designation
 	
EdgePoint - $100,800 (works with universities to get NSA/DHS-CAE Designation
Equipment: Virtual Server - $27,000
 	
Year 2: EdgePoint - $50,000
1/2 time faculty – Director – NSA/DHS -Center of Academic Excellence $60,000
Equipment - $15,000
 	
Year 3: Faculty Position
A faculty position to bridge the gap of lack of qualified IT teachers in the Secondary Schools. This person would
   a. Facilitate the training for concurrent high school instructors to be ready to teach NET 2200 and NET 2300 at schools where teachers are available.
   b. Teach a minimum of half time (four classes) at the university to offset the increased demand at the university level.
   c. Advise secondary students in pursuing additional educational step (AAS Degree) and employment opportunities.
   d. Work with industry to obtain student internships.
	$125,000

Weber State University SLCC/Taylorsville Campus	
Funding Need—One-time money	**Budget**
Lab equipment to fully support and expand existing WSU upper division program at SLCC	$30,000
Funding Need— Ongoing	
Half-time faculty position to support WSU 2+2 program at SLCC	$55,000
Davis Technical College	
Funding Need— Ongoing	

Instructional support for cybersecurity program course development and articulations. Ongoing development and support of summer workshop for high school students in Cyber Security, Information Management and Defense, and Ethical hacking.	$15,000

Ogden-Weber Technical College

Funding Need— Ongoing

Instructional support for cybersecurity program course development and articulations. Ongoing development and support of summer workshop for high school students in Cyber Security, Information Management and Defense, and Ethical hacking.	$15,000

Secondary Schools

Davis School District

Equipment/Software: Each student needs laptop (video) or pc with webcam, mic headset (approximate cost - $800 each)—allows for Econo connect if not in IVC room. *High School Facilitators and Support Staff:* $1,800 per course, approximately 60 hours, includes reporting, follow up, mentoring, academic intervention, assisting with IVC connections. *Training:* Current high school teachers will receive training in order to teach Cybersecurity/Networking concurrent enrollment courses in traditional high school classroom sections. As demand increases, this training provides more teachers for this high need area.	$15,000

Morgan School District

Equipment/Software: Each student needs laptop (video) or pc with webcam, mic headset (approximate cost - $800 each)—allows for Econo connect if not in IVC room. *High School Facilitators and Support Staff:* $1,800 per course, approximately 60 hours, includes reporting, follow up, mentoring, academic intervention, assisting with IVC connections. *Training:* Current high school teachers will receive training in order to teach Cybersecurity/Networking concurrent enrollment courses in traditional high school classroom sections. As demand increases, this training provides more teachers for this high need area.	$2,000

NUAMES

Equipment/Software: Each student needs laptop (video) or pc with webcam, mic headset (approximate cost - $800 each)—allows for Econo connect if not in IVC room. *High School Facilitators and Support Staff:* $1,800 per course, approximately 60 hours, includes reporting, follow up, mentoring, academic intervention, assisting with IVC connections. *Training:* Current high school teachers will receive training in order to teach Cybersecurity/Networking concurrent enrollment courses in traditional high school classroom sections. As demand increases, this training provides more teachers for this high need area.	$4,000

Ogden School District

Equipment/Software: Each student needs laptop (video) or pc with webcam, mic headset (approximate cost - $800 each)—allows for Econo connect if not in IVC room. *High School Facilitators and Support Staff:* $1,800 per course, approximately 60 hours, includes reporting, follow up, mentoring, academic intervention, assisting with IVC connections. *Training:* Current high school teachers will receive training in order to teach Cybersecurity/Networking concurrent enrollment courses in traditional high school	$4,000

classroom sections. As demand increases, this training provides more teachers for this high need area.	
Weber School District	
Equipment/Software: Each student needs laptop (video) or pc with webcam, mic headset (approximate cost - $800 each)—allows for Econo connect if not in IVC room. *High School Facilitators and Support Staff:* $1,800 per course, approximately 60 hours, includes reporting, follow up, mentoring, academic intervention, assisting with IVC connections. *Training:* Current high school teachers will receive training in order to teach Cybersecurity/Networking concurrent enrollment courses in traditional high school classroom sections. As demand increases, this training provides more teachers for this high need area.	$10,000
Total On-Going Funding Weber State University and Secondary Schools	$295,000

Appendix A—Industry Letters of Support

DEPARTMENT OF THE AIR FORCE
748TH SUPPLY CHAIN MANAGEMENT GROUP (AFMC)
HILL AIR FORCE BASE UTAH

3 October 2018

MEMORANDUM FOR: To Whom It May Concern

FROM: 748 SCMG/EN

SUBJECT: Weber State University Mechanical Engineering Program

1.   This letter serves as validation of the science and engineering community's recognition of the need for university support of science and engineering programs within Utah.

2.   Hill has a growing technical workforce which includes approximately 1400 electrical engineers and computer scientists all of whom have grown up in software engineering. About 100 of those are Cybersecurity specialists while the remaining 1300+ are impacted directly and indirectly by Cybersecurity issues. Our current and future hiring demands for both software engineering and Cybersecurity graduates are far beyond the local supply at more that 100 per year for the foreseeable future.

3.   Each year Hill also receives a number of highly qualified undergraduate interns and paid graduate degree new-hires. These candidates are chosen via competition from a nation-wide pool of the best qualified applicants.

4.   We laude any effort to grow additional technical degree programs that the USAF can use to hire quality engineers and computer scientists that strengthen our technical workforce.

// SIGNED //
DAN W. CHRISTENSON, NH4, DAF
Director of Engineering
748 SCMG/EN

BT MACK

To Whom It May Concern,
Re: WSU School of Computing Potential Cybersecurity Program

BT Mack Technology Group provides one-stop-shopping for all IT needs for small businesses with clients nationwide but mostly located in the West. Nearly all of our clientele are family owned and operated organizations, some have multiple offices, all have less than 200 employees. While every business is threatened with cyber-attacks, one industry segment is particularly hard hit and finding it difficult to comply with increasingly complex regulations and requirements imposed by state and federal regulators.

BT Mack is the preferred IT Consultant for the Utah Land and Title Association. Most title companies nationally and in Utah are multi-generational family operations. Technology has moved the industry from completely paper-based records to mostly digital and on-line. While the information associated with a property title is public record, title companies are now handling the financial transactions involved in all Real Estate transactions.

Title companies now have access to and store financial data for their clients. They now must meet the same security requirements as a mortgage company – they share and store the same sensitive data. These companies who historically have been paper based are not equipped to deal with Windows updates and version changes let alone meeting the increasingly complex and stringent security requirements to maintain the licenses.

Most title companies have 3-5 employees and now need to have network security that requires the equivalent of 2 full time security specialists that does nothing but security. Some companies have opted to close rather than deal with the new security requirements. This is not the main reason for making this decision, but it has been listed as a significant contributor leading to ending businesses that have been in operation for decades, some nearly 100 years old. One company had been in business for 73 years with 14 employees.

I share this because it is an example of what the rest of small businesses will be facing soon. As a result, there is a new, rapidly growing segment of the IT industry called Security as a Service. Many companies of every size are opting to use this new service rather than try to meet the requirements imposed by regulations and/or risk management on their own.

The providers offering Security as a Service cannot hire people fast enough to meet the rising demand. These providers have established processes and procedures, but they still require human interaction and input. This is a new industry segment that will be more likely to hire college graduates with a security background with little to no real work experience to fill these vacancies.

As part of our product offering BT Mack has access to over 30 different companies that now offer Security as a Service. One year ago there were 4. This is where potential graduates of a cyber-security program will easily find employment with significant career opportunities.

Regards,

Larry Welch
Managing Partner
BT Mack Technology Group