Strategic Workforce Investment Grant Proposal Synopsis

Applicant Name:	Bridgerland Technical College (Bridgerland)
Primary Contact Persons:	Mason Lefler (mlefler@Bridgerland.edu)
Applicant Type:	Statewide Partnership
Project Title:	*Utah Data Analytics Pathway (UDAP)*
Funding Level Requested:	$360,000

Project Summary: Bridgerland Technical College, Mountainland Technical College, Utah Valley University, and Utah State University propose a stackable credential "Utah Data Analytics Pathway" (UDAP) to meet unmet workforce needs.

Strategic Industry Cluster: Software Development and Information Technology (Data Analytics, Data Mining, Database Management, Software Development, Management Information Systems, and Information Technology)

Targeted Occupations: Data Analysts, Database Administrators/Architects, Data Warehousing Specialists, Data Scientist, Business Intelligence Analysts, Financial Analysts, Computer and Information Systems Analysts/Managers/Administrators, Database Software Publishers, Computer Systems Designers, IT Project Managers, and Marketing Managers

CTE Regions to be Served: Bear River Region, Mountainland Region

Counties to be Served: Box Elder, Cache, Rich, Summit, Utah, Wasatch, and Weber

Industry Partners: 97th Floor; Atomic Jolt; Autoliv; BlueRim; Cache Valley Bank; Conservice; EideBailly; EarthSoft Inc.; Fox Pest Control; Harris Research Inc.; ICON Health & Fitness; Instructure; Marketing Ai; MX Technologies; Pope Tech; Rent Dynamics; Silicon Slopes; Storm Products; Xactware

Projected Outcomes:

- Expand the entry-level data analytics workforce pipeline by accelerating and increasing the volume of students directed towards the data industry;
- Deliver data analytics professional development to high school and technical college teachers annually;
- Develop and implement a stackable-credential career pathway to guide secondary and postsecondary students from entry-level to advanced-level data jobs;
- Design and implement vertically-aligned data analytics curriculum between high schools, technical college certificates, university associate degrees, and university bachelor's degrees to prepare students to fill the industry workforce supply gap;
- Expand, through USU's extension, the reach of data science stackable credential pathway to rural areas;
- Create and maintain a closed Canvas Consortium where new data analytics curriculum can be shared with other educational institutions across the state.

"Basic skills in working with data that every person should have are not being taught in K–16 schools. Thus, they are lacking at the highest levels in the broad array of professions that are becoming increasingly data-driven."— Juan LaVista, Principal Data Scientist at Bing/Microsoft

Introduction

Data is transforming the world and its workforce. Like computer science before it, data analytics has grown from a catch phrase into an essential skill across the market. In 2017, IBM, the Business-Higher Education Forum, and Burning Glass published a report on the data science and data analytics field titled "The Quant Crunch: How the Demand for Data Science Skills is Disrupting the Job Market". The report (2017) explains how every day 2.5 quintillion bytes of data are created and estimates that the data analytics and data science market will grow to $187 billion per year.

As the use of data becomes more common, the ability to work with and understand data has become an essential skill in virtually every industry. Big data affects the ways e-commerce companies track their clients and make sales (Akter & Fosso, 2016), scientists perform experiments (Bell, Hey & Szaly, 2009), products are created (Thoben, Wiesner & Wuest, 2017), and even how government agencies are run (West, 2018). Whereas decisions were once made by dedicated decision makers, decisions are increasingly driven by data (McAfee & Brynjolfsson, 2012).

In addition to data guiding industries across the market, data itself has become an industry. Companies are now using their data in various new ways such as: data as a currency, data as a service, data insights as a service, and data analytics platforms as a service (Gandhi et al., 2018).

Thoben, Wiesner, and Wuest (2017) describe this transition towards data as a fourth industrial revolution, and those companies that do not adapt to this new paradigm will be replaced by companies which can successfully take advantage of their data. This means either the companies' current employees must acquire new knowledge, skills, and abilities, or the companies have to hire employees trained in data analytics to meet this growing need.

Industry Need

Peter Sondergaard (2012), Senior Vice President of the Gartner research firm, predicted in 2012 that by 2015, 1.9 million IT jobs in the U.S. would be created to support big data. Similarly, a 2011 report by the McKinsey Global Institute predicted that there would be 440-490 thousand jobs with deep analytical talent, representing a 50-60% deficit in demand compared with the projected available talent. In addition, the report predicted a need for 1.5 million managers and analysts who were able to use data effectively (McKinsey Global Institute, 2011). Both reports used these numbers to show how underprepared we would be for the number of jobs requiring skills in data analytics. However, by 2015, the job listings were surpassing even those predictions with 2,350,000 job listings in the United States (Miller & Hughes, 2017).

Table 1 shows some of the different data careers according to Standard Occupation Codes (SOC) from the Department of Labor, Employment, and Training Administration and their projected job growth rates.

Table 1. Projected Growth Rate and Annual Job Opening by IT Career Path Clusters.

Career	Job Titles (SOC codes)	Percentile Increase (2016-2026)	
		Utah	USA
Database Administration	Database Administrators (15-1141.00)	+38%	+12%
Computer Occupations (All Other)	Web Administrators (15-1199.03) Database Architects (15-1199.06) Data Warehousing Specialists (15-1199.07) Business Intelligence Analysts (15-1199.08) Search Marketing Strategists (15-1199.10) Document Management Specialists (15-1199.12)	+34%	+10%
Marketing	Market Research Analysts and Marketing Specialists (13-1161)	+60%	+20%

Note: Data from (U. S. Department of Labor, Employment, and Training Administration, 2019)

The Department of Labor has identified each of these careers as having a "Bright Outlook". This means they are expected to grow rapidly for years and will have a large number of job openings (National Center for..., 2019). It is important to note that the Department of Labor projects Utah to strongly outpace the national average in data-centric jobs. However, it is critical to also realize that these projections account for only a portion of the tremendous growth happening in data analytics jobs.

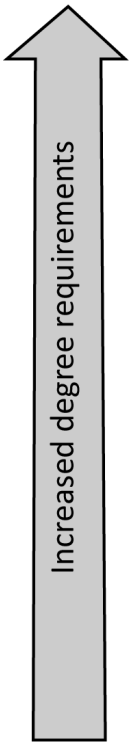
Table 1 gives us a glimpse into the impact of data analytics on jobs, but due to the recency of the data analytics field, quantifying the amount of jobs nationally or even locally is difficult. Data job titles have not yet coalesced into Standard Occupational Classification (SOC) or Classification of Instructional Programs (CIP) codes. A "data scientist" at one company may be doing the same job as a "data practitioner" at another company. The position of Database Administrator (15-1141.00) is the only data job with its own SOC code while positions of Database Architects (15-1199.06), Data Warehousing Specialists (15-1199.07), Business Intelligence Analysts (15-1199.08), and Document Management Specialists (15-1199.12) share the same statistical grouping according to the U. S. Department of Labor, Employment, and Training Administration.

Defining the Job Opportunities

In order to determine the need of data science and analytics jobs, economists have had to search for data skills requested in job postings rather than looking for specific SOC codes. Searching for data skills in job postings, rather than specific SOC codes, has shed light on many more positions requiring skills in data analytics. This means that Department of Labor statistics are most likely underrepresentations of the total quantity of open positions in this field.

In the IBM Data Crunch article, Miller and Hughes (2017) analyzed a national set of job listings to come up with an initial set of what they called Data Science and Analytics (DSA) job categories, roles, and sample occupations (See Table 2).

Table 2: Descriptions of jobs in Data Science and Analytics (DSA).

	DSA Framework Category	Functional Role	Sample Occupations
	Data Scientists & Advanced Analytics	Create sophisticated analytical models used to build new data sets	Data Scientist Economist
	Data Analysts	Leverage data analysis and modeling techniques to solve problems and glean insight across functional domains	Data Analysts Business Intelligence Analyst
	Data Systems Developers	Design, build, and maintain an organization's data and analytical infrastructure	Systems Analyst Database Administrator
	Analytics Managers	Oversee analytical operations and communicate insights to executives	Chief Analytics Officer Marketing Analytics Manager
	Functional Analysts	Utilize data and analytical models to inform specific functions and business decisions	Business Analyst Financial Analyst
	Data Practitioners & Data-Driven Decision Makers	Leverage data to inform strategic and operational decisions	IT Project Manager Marketing Manager

Note: Information from Miller & Hughes, 2017, p. 5.

As seen in Table 2, this report illustrates that there are many types of jobs and roles within the data analytics career pathway that are not being tracked by the United States Department of Labor. In addition to defining these preliminary roles, Miller and Hughes (2017) also put together numbers of postings, job projections for 2020, average days for job openings, and averages for salaries for these job categories (See Table 3).

Table 3: Summary of the demand for different jobs in Data Science and Analytics (DSA).

DSA Framework Category	Number of Postings in 2015	Projected 5-Year Growth	Estimated Postings for 2020	Average Time to Fill (Days)	Average Annual Salary
All	2,352,681	15%	2,716,425	45	$80,265
Data-Driven Decision Makers	812,099	14%	922,428	48	$91,467
Functional Analysts	770,441	17%	901,743	40	$69,162
Analytics Managers	39,143	15%	44,894	43	$105,909

Data Systems Developers	558,326	15%	641,635	50	$78,553
Data Analysts	124,325	16%	143,926	38	$69,949
Data Scientists & Advanced Analytics	48,347	28%	61,799	46	$94,576

Note: Data from Miller & Hughes, 2017, p. 6.

As illustrated in the tables above, there is no single title which encompasses the range of responsibilities performed in this field. For the sake of simplicity, we will refer to all of the aforementioned job categories as "data analytics" and those who work with data as "data analysts".

The various categories of data job roles are broad and well paid as shown in Table 3. The Average Annual Salaries parallel the Department of Labor statistics as shown later in Table 5.

In sum, both the Department of Labor's economic data as well as independent industry reports (Miller & Hughes, 2017; McKinsey Global Institute, 2011; Sondergaard, 2012) point to an explosion of high-paying data jobs and a lack of skilled labor (as denoted by abnormally high "average time to fill" averages).

Broad Local Industry Need

Following the lead of the IBM Quant Crunch report, we asked the current economist at the Utah Department of Workforce Services (UDWS) to conduct a statewide analysis of job listings to determine how many jobs are now requiring data analytical skills across 11 SOC codes (See Table 4).

Table 4: Summary of the demand for different jobs in Data Science and Analytics (DSA) in Utah.

Occupational Title	Occupation Code	Total Number of Jobs Requiring "Analytics"
Computer and Information Systems Managers*	11-3021	176
Computer and Information Research Scientists	15-1111	59
Computer Systems Analysts	15-1121	275
Computer Programmers	15-1131	68
Software Developers, Applications*	15-1132	1,353
Software Developers, Systems Software*	15-1133	163
Web Developers*	15-1134	241
Database Administrators*	15-1141	60
Network and Computer Systems Administrators	15-1142	606
Computer Occupations, All Other*	15-1199	821
Statisticians	15-2041	28

Total	3,850

Note: Utah Department of Workforce Services supplied data in October 2019 looking back over a 120-day period.

UDWS' data from Table 4 illustrates that there is a large local demand for data skills in Utah with 3,850 job listings asking for this new skillset. Despite the availability of jobs and competitive salaries, many of these positions go unfilled.

Diagnosing the Unmet Demand

In 2015, UDWS published a report titled "Difficult-to-Fill Jobs" which listed six of the jobs in Table 4 (as denoted with asterisks). The report (2015) suggests that these difficult-to-fill jobs may be due to: a) low offered wages, b) demanding degree requirements, and/or c) a simple lack of skilled people with the necessary knowledge, skills, and abilities.

Low Wages. Low wages are often seen as the cause of low employment numbers as skilled workers may wait for jobs where they will be more generously compensated for their skillset. UDWS (2015) found the 15 most difficult-to-fill STEM job's wage data to exceed the 75th percentile above the occupational median. This was in contrast to 60% of all other difficult-to-fill jobs that were found to have wages below the occupational median. The researchers concluded that these "difficulties are more skill and training issues than wage considerations" (2015, p. 13). Table 5 details the high wages being offered in current data jobs locally and nationally. Please note that the median salary for database administrators in Utah is $5,000 over the United States average. That very rarely happens, and points to the dramatic need for database administrators in Utah. It's clear that the lack of a skilled data workforce in Utah is not due to low wages.

Table 5. Jobs, Median Annual Salaries, Salary Ranges, and Required Certifications.

Career Path	Median Annual Salary		Utah Salary Range		Required Years of Education
	Utah	USA	Low 10%	High 10%	
Database Administration	$95,600	$90,070	$53,320	$136,470	1 - 4
Computer Occupations (All Other)	$73,370	$90,270	$36,090	$123,560	1 - 4
Marketing	$50,000	$63,120	$28,320	$99,580	1 - 4

Note: Data from (U. S. Department of Labor, Employment, and Training Administration, 2019)

Degree Requirements. Besides high wages, economists often look at difficult degree requirements as the cause for unfilled jobs**.** In 2018, UDWS released another report called "A Labor Study of Software Publishing & Computer Systems Design." The report detailed that computer systems and software publishing sector jobs are, on average, the fastest growing in Utah's economy. However, one of the most interesting findings of the paper is that many of these jobs are currently held by people with less than an associate degree which is in stark contrast to other IT sectors across the United States. For example, the article listed that 41% of database administrators currently employed in Utah have less than an associate degree and 67% have less than a bachelor's degree. The most difficult-to-fill, data-centric jobs are currently

being filled by anyone who possesses the skill set; there just aren't enough of these candidates. Employers may very well be requesting degrees from potential job candidates, but the degree requirements are not causing the data analytics workforce supply gap in Utah.

After ruling out low wages and high degree requirements, it is clear to see that Utah's lack of data analysts is a training issue. These jobs are not easily filled because there is neither a pipeline nor a pathway for data analytics instruction at any instructional level below a bachelor's degree.

Lack of Instructional Pathway and Pipeline

Other researchers have diagnosed this data workforce skills gap as a lack of pipeline and pathway at the lower levels of education. In alignment with UDWS' diagnosis (2015) of the skills gap, The Networking and Information Technology Research and Development (NITRD) program published a set of strategies for the United States to prepare workforce for a data infused workplace. The report argued that as a country "a comprehensive education strategy is essential to meet increasing workforce demands in Big Data." The report also explained that educational opportunities are needed at all levels including K-12, higher education, and on-the-job training for employees in all sectors (NITRD, 2016).

Unless this workforce gap is filled, it will paint a bleak future for Utah's burgeoning IT and data analytics sectors. In order to know how to close the data workforce gap, it is important to look at the current state of data instruction in the state.

Current State of Data Analytics Instruction in Utah

Many Utah educational institutions at all levels have independently begun work on creating more highly skilled data workers.

Higher Education. Utah universities have program offerings that touch on data science, database administration, and data analytics, but these programs start recruiting students too far along the educational pathway to recruit enough students that are adequately prepared for the rigors of the data sciences.

Utah State University (USU) has long had a Management Information Systems program. The program is in demand, but it is currently unable to serve as many students as are interested due to a lack of instructors. There have been requests from students to offer the courses during off hours so that working students can acquire these skills and upgrade or change jobs. Additionally, the MIS department has had requests from students across the state in rural areas. With data science skills, these students are interested in staying in their communities but still participating in Utah's vibrant tech economy through telework. USU has begun to have conversation with USU's Extension program to figure out how to offer their Data Analytics degrees in remote locations. However, their major obstacle is having enough adjunct faculty to teach at night and across the state.

Similar to USU, Utah Valley University (UVU) offers degrees in Information Systems and Technology, Mobile Development, and Web Development. Recently, these programs have been requested to augment the amount of curriculum dedicated to data and analytics. However, due

to the recency of analytics and its constant innovation, it is difficult for professors to keep curriculum current. Additionally, due to high demand, UVU programs have begun to try to figure out how to recruit more students and scale appropriately. One of their most recent major initiatives is the act of acquiring a building at Thanksgiving Point in order to satisfy the increased need for education near and around Silicon Slopes. Much like USU, UVU is also struggling to find funds to employ enough highly skilled adjuncts from the data industry at their new facilities.

Despite offering instruction in data analytics, UVU and USU (i.e., higher education) are not currently producing enough data analysts to satisfy demand. Both institutions are making strides to expand the amount of students they can serve in the data fields but still need resources to scale their programs. Yet, it is important to realize that even if USU and UVU were to double their output of students in the data sciences it still wouldn't be enough to satisfy industry demand. Higher education is reaching too few students too late. As related previously, many data jobs in the state don't require degrees, and the majority of current data jobs are filled with workers without bachelor's or associate degrees. The bigger problem with Utah's data analytics pipeline and pathway is that there is no instruction at either the technical college and/or high school level.

Technical Colleges. As seen in Figure 1 below, no technical college in the state currently offers any certificates in data analytics. Many colleges offer Web & Mobile programs that touch on databases, but it is only cursory coverage. Over the past few years, industry advisory boards at Bridgerland and Mountainland have begun to request more data science and data analytics topics.

Mountainland Technical College, which resides at Thanksgiving Point, is creating a Marketing Analytics program to satisfy industry advisory committee demands. Due to a lack of space in the current program, they have begun construction on a new building which will allow them to double their student capacity as well as start a new Marketing Analytics certificate program. Although Mountainland was able to get funds for the new space and technology, the technical college does not have enough funding to hire adjunct faculty to teach all the courses in the new analytics certificate. For the past few years, they have had to turn away over half of the applicants in their Web Design program while Silicon Slopes companies around the area beg for more graduates. With more adjunct faculty, they would be able to find industry experts to teach the new analytics program coursework as well as double their output of students that have skills in database administration and analytics.

Bridgerland Technical College, due to various industry advisory boards requests, is also trying to substantially augment the amount of database administration and data analytics instruction offered in its programs. In order to begin shoring up more data-centric curriculum, Bridgerland has just hired a new Department Head in its Web & Mobile certificate program. This department head has a Master's and PhD in Management Information Systems along with a vision of building skilled data technicians for entry-level and mid-level data jobs. Unlike Mountainland, Bridgerland does have enough physical space to grow but it does not have enough instructors. Currently, Web & Mobile has 135 adult and high school students spread

between two full-time instructors and one part-time position. In order to help the program grow, build data analytics curriculum, and increase enrollment, more faculty will be needed.

High Schools. Despite calls from researchers to make data analytics literacy more prevalent at the K-12 level, there is not a data analytics set of standards nor instruction. This is quite tragic because students are not learning about these high-paying jobs. The Utah State Board of Education (USBE) has become aware of the absence of data literacy/data analytics in its strands and standards. USBE is in the early stages of redefining our Business Information Management strands and standards which will include data analytics. However, it is a very difficult task for a K-12 teacher to adopt a new CTE area of instruction with only standards. In order to have success, teachers need support in the form of good curriculum, professional development, and a learning community.

For the past few years, Bridgerland has been investing time and money into building a pipeline of software, IT, and cybersecurity technicians at the middle school and high school level. Bridgerland has invested $35,000 per year towards conducting two regional Code to Success summer camps. Bridgeland has also built the IT STEM academy to be able to distribute our curriculum to eight local high schools. However, these camps are in need of more computers. Of all the Code to Success locations across Utah, Bridgerland ranks the highest for the number of students entering the program at the location's first year and has very high retention and success rates; likewise, Bridgerland's IT STEM Academy grew from 133 to 226 students in just one school year. Despite their rapid success, they both face technological constraints and need to include more instruction in data analytics as requested by industry. Lack of curriculum, teachers, and technology are constraining our ability to grow and satisfy industry requests for data technicians at the K-12 level.

In summary, the current pathway is disconnected and deficient as illustrated in Figure 1. Utah lacks enough data analytics instructors, equipment, and professional/curricular development. Without more investment and coordination amongst educational entities at every level, individual efforts to build data analytics instruction will fall woefully short of filling industry demand for data analytics.

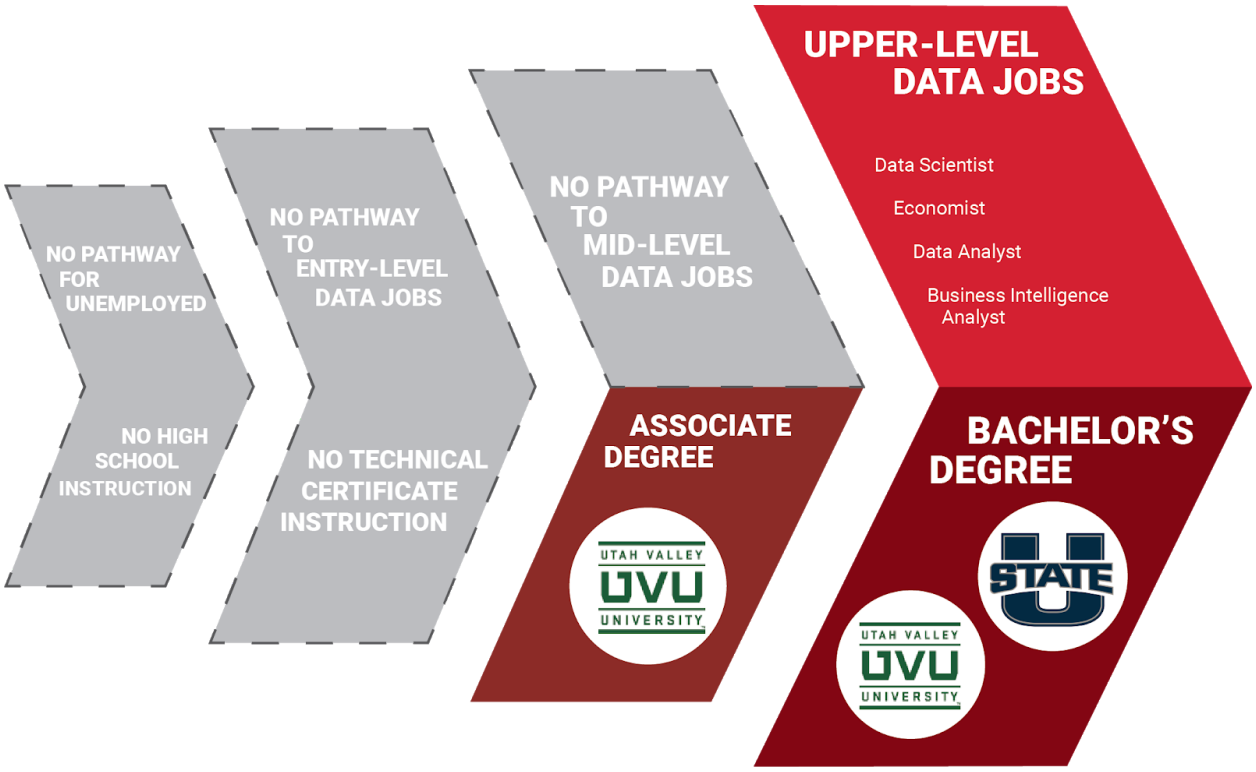


Figure 1. Gaps in Utah's Data Analytics Pathway

Project Description

This grant proposes to solve these issues by creating a stackable credential pathway from local high schools, through technical colleges, and then into USU and UVU associate and bachelor's degree programs. It will do this by:

- **Pipeline:** Expanding the entry-level data analytics workforce pipeline by accelerating and increasing the volume of students directed towards this industry;
- **Pathway:** Developing and implementing a stackable-credential career pathway to guide students from entry-level to advanced-level data analytics jobs;
- **Breadth:** Designing and implementing vertically-aligned database management/data analytics curriculum between Bridgerland and Mountainland certificates and USU and UVU's bachelor's degrees to prepare students to fill the industry workforce supply gap.

Activities: The four following activities will guide us in our work: Increase Instructors, Deliver Professional/Curricular Development, and Acquire Equipment and Software.

Figure 2 illustrates the final outcome of the Utah Data Analytics Pathway. The UDAP grant will overcome instructor, curricular, and technological constraints currently facing Utah.

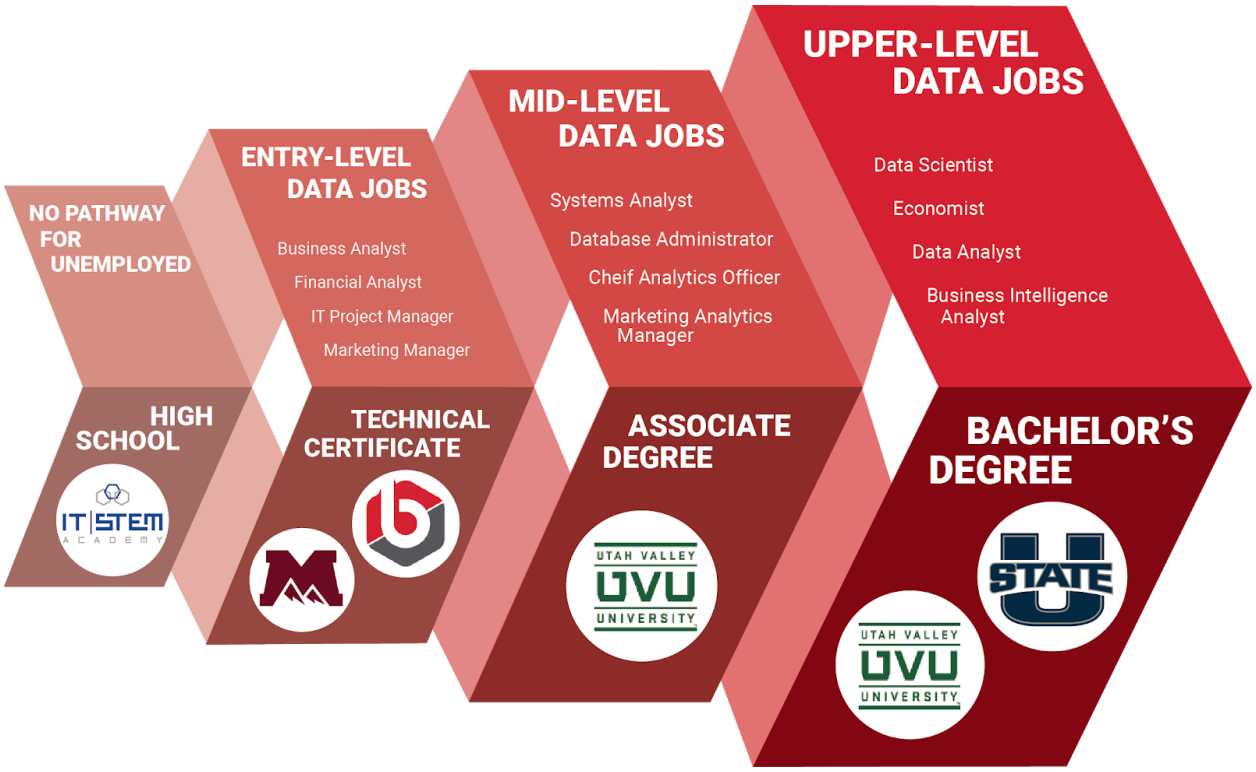


Figure 2. Proposed future state of IT pathway with pipeline, pathway, and breadth constraints REVISED.

Objectives: To accomplish our purpose, we propose the following objectives, activities, and expected outcomes (See Table 6):

Table 6. Objectives, Activities, and Outcomes.

Objectives	Activities	Outcomes
Objective 1: Hire new faculty at USU, UVU, Mountainland, and Bridgerland.	• Hire 1 full-time instructor and over 10 adjunct faculty	• Increase university student enrollment by 240 students • Increase tech college students enrollment by 146 students
Objective 2: Expand equipment available for students at UVU, Mountainland, and Bridgerland	• Purchase and prepare equipment • Distribute laptops to 8 northern Utah high schools	• 50 more laptop computers available for IT STEM Academy • Increased lab completion count per student
Objective 3: Vertically align curriculum between secondary and post secondary educational institutions on pathway	• Conduct articulation meetings between technical colleges and universities.	• Improved collaborative relationship between local school districts, Bridgerland, Mountainland, USU, and UVU • Articulation agreements, created and implemented
Objective 4: Purchase equipment necessary for new data literacy curriculum distribution	• Acquire and install new servers and software • Set up single sign-on server and administrator	• Distribute curriculum at Bridgerland and 8 local high schools

Objective 5: Create introductory data literacy courses	● Conduct collaborative course design meetings for 5 new data literacy/database administration courses based on advisory board feedback and workforce needs	● Add 5 new courses to the Bridgerland IT certificate ● Pilot new courses with 10 students prior to Jan 1st 2021 ● Share new courses through a new UDAP closed Canvas consortium
Objective 6: Increase data literacy knowledge base of Bridgerland faculty and STEM-IT high school teacher facilitators	● Deliver professional development throughout the 2019-2020 school year (by USU MIS Department)	● Increase familiarity and proficiency of data analytics/database administration for IT-STEM academy teachers

Project Design & Outcomes

Pipeline: Building a larger pipeline of technologically and data literate students will ensure that Utah companies have the qualified workforce they need. With this increase in the number of students entering this field, Utah will ultimately supply its own workforce for high-paying data jobs (i.e., database architects, analysts, and administrators).

Pathway: We propose a stackable credential pathway to connect workers from entry-level to advanced-level IT jobs. This will be accomplished by vertically aligning curriculum from IT STEM, then from technical colleges (e.g., Bridgerland and Mountainland) to UVU and USU's MIS Department. This will ensure that students enter the workforce more quickly and have opportunities for advancement later. Previously disconnected educational institutions will continually and frequently collaborate with each other and industry professionals. This will now allow for multiple on and off ramps between education and the workforce. For example, currently employed, entry-level IT/data workers will now have pathway access to an MIS bachelor's degree that will stack onto their previous Bridgerland credentials.

Industry Advisory Input and Support: Over 18 companies from industry have requested these changes and pledged to work with Bridgerland, Mountainland, USU, and UVU to ensure that the Utah Data Analytics Pathway is successfully built and maintained. Industry partners have committed countless hours to participate in annual ongoing advisory meetings, promote the grant and pathway, review and advise on curriculum, and contribute to instruction (e.g., guest lectures, classroom teaching, conduct site tours, serve as panelists or judges). They will also contribute to the donation of software and supplies, contribute to any work-based learning (e.g., externships, mentoring, job shadowing, demonstrations), and work with project partners to implement and monitor the project (e.g., collect data about progress toward proposed goals, submit required reports in a timely manner).

Funding Request

Requested funds will cover instructional staff, equipment, and professional/curriculum development. See Table 7 for a breakdown of budget items by type and institution.

Table 7. Budget Form.

Program Expenses/Yearly	One Time Funds	Ongoing Funds	Total
Instruction			
Full-time Analytics Instructor Salary (with Benefits) at Bridgerland		$125,000	$125,000
Adjunct Analytics Instructors (4 adjunct web and 2 mobile) at Mountainland		$35,000	$35,000
Adjunct Instructor Pay for USU's 4 Distance Courses		$45,000	$45,000
Adjunct Instructor Pay for UVU's 3 Data Courses		$30,000	$30,000
Professional and Curriculum Development			
Part-time Instructor Trainor/Designer at Bridgerland		$40,000	$40,000
Annual professional development conference (teacher stipends, materials, travel reimbursement)		$15,000	$15,000
1 week of PD/year for Mountainland's 10 digital marketing and IT instructors (Subs for Instructors in Industry)		$5,000	$5,000
Professional Development for UVU Faculty		$5,000	$5,000
Equipment and Software			
Ongoing Equipment and Software (servers, student computers, software licences) for Bridgerland	$35,000	$10,000	$45,000
Ongoing Equipment/Technology for UVU Lehi Campus		$5,000	$5,000
Instructional Software Licensing (Tableau, SQL, Etc.) for Mountainland		$10,000	$10,000
Total	**$35,000**	**$325,000**	**$360,000**

Budget Justification

Requested funds will support instruction, professional development, curriculum development, equipment, and software.

I: Instruction

Instructors: Part of the budget will go toward 6 adjunct analytics instructors, 4 adjunct web instructors and 2 adjunct web instructors, for Mountainland will cost $35,000. Mountainland is starting new marketing and analytics program in the fall, which will consist of 48 students, 2 cohorts. Mountainland has been given space and technology in their new building but not money for the instructors. This grant will give them the capacity to triple their numbers while also adding analytics. An additional $45,000 will go toward adjunct instructor pay for USU's 4 distance courses ($45,000) and UVU's 3 Data courses ($30,000). $120,000 is requested for a full-time adjunct analytics instructor salary at Bridgerland as well.

Expected Student Enrollment: The overwhelming majority of these grant funds will go to increasing the amount of data analytics instructors at participating institutions. This increase in instructors will lead to a large boost in enrollment (See Table 8). The goal of the grant is to

increase enrollment by will increase the data analytics pipeline by 386 students.

Table 8. Student Enrollment.

Institution	Pre-grant Enrollment	Post-grant Enrollment
Bridgerland Technical College	135	185
Mountainland Technical College	96	192
Utah Valley University	726	766
Utah State University	200	400
Total	**1,157**	**1,543**

Completion & Placement: USU and UVU do not track completion or placement of graduates so their pre-grant percentages are not included in Table 9. Accrediting standards for technical colleges within the state. The goal of the grant will be to increase student enrollment while not suffering a drop in completion and placement percentages.

Table 9. Student Completion and Placement.

Institution	Pre-grant Completion Percentage	Post-grant Completion Percentage	Pre-grant Placement Percentage	Post-grant Placement Percentage
Bridgerland Technical College	67%	>60%	100%	>80%
Mountainland Technical College	83%	>70%	95%	>80%

II: Professional and Curriculum Development

Professional Development: Bridgerland, USU, UVU, and Mountainland will design and deliver a UDAP Teacher Professional Development Conference each Summer. This will be attended by faculty of each institution and act as a professional learning community for grant partners as well as other institutions across the state who are interested in starting their own data analytics program. These trainings will be recorded and embedded into five new data literacy/database administration courses. The professional development days and videos are crucial to ensure that the curriculum offered is connected from entry- to professional-level. $15,000 of the grant funds will be used to pay for supplies and teacher travel. All excess funds will be used to pay teachers for their time ($25/hour).

There will be an additional week per year of professional development for Mountainland's 10 digital marketing and IT instructors for subs while they attend trainings and work as "instructors in industry", requiring $5,000. There will also be separate professional development in data analytics for UVU faculty, which will cost another $5,000.

Curriculum Development: Bridgerland requests $40,000 for a part-time instructional design intern to develop, coordinate, and facilitate the integration of these courses at Bridgerland and throughout local high schools participating in the IT STEM Academy.

This grant will fund the collaborative development of five new data analytics and database administration courses. These courses will be added to Bridgerland and Mountainland certificates (see Table 10). The relevance, accuracy, and effectiveness of these courses will be ensured by periodic collaborative course design meetings. A new instructional designer and a representative from each of the participating institutions will meet four times a year (quarterly)

to build and review this new curriculum. Each iteration of curriculum that results from these meetings will be presented biannually to the advisory board, which is comprised of representatives from 18 local businesses. There, the courses will receive industry review and input.

Table 10. New Bridgerland Course Titles.

Course Number	Course Title & Description
ITEC 2400	**Introduction to Data Literacy -** Course covers introductory data analytics topics, such as the importance of data, data visualization, data types, data analysis strategies, how to locate data, data usage, statistical comprehension, using data in persuasive arguments, data accuracy, and data transformation.
ITEC 2410	**Databases I -** This course introduces relational database concepts and the basics of SQL. Being able to store and use massive amounts of data is now essential to many businesses. The course covers database normalization, database design, database types, intro to SQL, data management, database engines, and NoSQL.
ITEC 2420	**Database Management I -** This course introduces database management. Skills and concepts taught in this class include database installation, memory optimization, resource allocation, system maintenance, backup and recovery, user management, scalability, and database distribution, all of which are vital skills necessary for supporting business applications that rely on data.
ITEC 2430	**Databases II -** This course deepens students' knowledge of databases. The intermediate topics taught in this course include pivot tables, triggers, subqueries, query optimization, object-oriented databases, XML, data warehouse usage, stored procedures, and intermediate SQL and joins.
ITEC 2440	**Database Management II -** This course teaches intermediate topics in database management, including data warehousing, database security settings, performance tuning, data mining, distributed databases, database transactions, object-oriented databases, and applying data analytics to databases using R.

Each course ties directly to high-growth and in-demand tech jobs (See Table 5). This new multi-disciplinary program will prepare students to become the next innovators for our rapidly changing digital data job market. There is currently no other program in the state of Utah that teaches all of these desired job skills.

III: Equipment and Software

Equipment: Mountainland, Bridgerland, and UVU request ongoing funds for student lab computers and other equipment/software to be placed at participating institutions. A one time request of $35,000 will go toward purchasing laptop computers for Bridgerland summer coding camps (e.g., Code to Success) and the IT STEM Academy. The computers will be distributed to high schools during the school year which will allow us to increase the number of students allowed into the program. During the summer months, the laptops will return to Bridgerland for maintenance and to support the summer coding camps.

Grant funds will also purchase the necessary technology for teaching data literacy topics. Two servers will be purchased to host databases for each student (40 simultaneous

students/server). The third server will be used to implement single sign-on services to the IT STEM Academy students so that they can complete the new data analytics coursework at a distance. These, along with virtual private network capabilities, will allow students to access Bridgerland servers (hosted databases) from each of local participating high schools.

Software: Deep Freeze software licenses will be purchased to maintain the laptops. Deep Freeze locks computers into a predefined configuration. With it, students can do their classwork and make changes without compromising the integrity of the system. Once the computer is power cycled, the computer will reset to the predefined configuration.

Project Timeline

The following table captures the activities that will take place over the course of the grant year.

Table 11. Timetable of Activities and Tasks.

Activities	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4
Equipment Acquisition												
Purchase computers, servers, and software	X											
Rearrange Class Layout & Installation (Bridgerland & UVU)	X	X										
Professional/Curricular Development												
Hire part-time instructional designer	X											
Conduct advisory curriculum development meetings		X		X		X		X		X		X
Organize and Deliver Data Professional Development	X	X	X	X		X		X		X		X
Develop course curriculum, instructional material, and labs			X	X	X	X	X	X	X	X	X	X
Deliver Advanced Industry Continuing Education Courses				X	X	X	X	X	X	X	X	X
Disseminate deliverables (curriculum)				X				X				X
Programmatic Modification												
Redesign of Certificate Programs for Board Approval	X	X	X	X								
Develop Articulation Agreements	X	X	X	X								
Implement recruitment plan (High School Industry Tours)			X		X		X		X		X	
Evaluation data collection, analysis, and findings				X		X		X		X		X
Dissemination of progress and results					X		X		X		X	

Evaluation & Reporting

Ongoing evaluation of the grant will be conducted by Bridgerland (Mason Lefler) with collaboration and input from representatives at Mountainland (Lisa Birch), USU (Chris Corcoran), and UVU (Trish Baker). Formative and summative metrics will be gathered annually in order to direct the grant work and to report updates on progress towards the completion of objectives to GOED. Table 12 illustrates the what performance measures will be tracked, the target population, data collection approach, and schedule for data acquisition.

Table 12: Project Evaluation and Reporting Matrix.

Performance Measures	Target Participants	Data Collection Approach & Schedule
Student Completion, Licensure, and Placement Numbers	Program students	*Institutional data:* annual
Completion of articulation agreements.	Industry partners	*Institutional data:* annual
Curriculum meets industry stakeholder workforce needs	Industry partners	*Advisory Committee survey:* annual
Professional development activities increase faculty preparedness to successfully implement new curriculum	Faculty	*Faculty satisfaction individual interviews/survey:* annual *Institutional data:* annual
Enhanced faculty, teacher, counselor, and industry partner understanding of student needs and experiences	HS counselors & teachers Industry partners	*Teacher/Counselor industry tour feedback form:* after completed tours *Advisory Committee Survey:* annual
The extent to which industry partners are engaged and supportive of project components	Industry partners Program PIs	*Stakeholder individual interviews:* beginning of year 1, end of year 3 *Advisory Committee survey*: annual
Student successful transition of students from tech colleges to universities	Program students	*Institutional data:* annual
Satisfaction with program components (stacked credentialing, hands-on equipment curriculum, faculty professional development, counselor industry tours)	Program students HS counselors & teachers Advisory committee	*Student satisfaction survey:* annual *Teacher/Counselor industry tour feedback form:* after completed tours *Faculty satisfaction individual interviews/survey:* annual *Advisory Committee survey:* annual *Student focus groups:* annual

Sustainability & Marketing

Sustainability: This project is sustainable. Once developed, the new curriculum will only require minimal adjustments conducted by the university and technical college instructors. The professional development trainings will be filmed and embedded into the relevant courses to serve as a long-term, sustainable curriculum guide for the instructors. While equipment will need updates over time, Bridgerland and Mountainland commit to set aside monies annually for the incremental and ongoing updating of student computers. The parties involved will also meet biannually, as described earlier, to maintain a strong working relationship.

Marketing Strategy: Bridgerland has designed a multi-pronged approach to market UDAP. Bridgerland will advertise the program to both the unemployed and current industry workers for their economic success, and especially to young students. Without garnering the interest of more K-12 students, the state cannot supply enough workers to close the IT workforce skills gap. In order to increase the amount to students looking towards the UDAP pathway, Bridgerland and Mountainland will do the following:

Table 13: Targeted Marketing Activities for Specific Age Groups.

Age Group	Marketing Activity
Middle School (6-8 grade)	● Present the pathway to 50+ Code to Success students, beginning summer 2020 ● Explain the pathway to the 3600 students at annual Bridgerland Career Days ● Explain the pathway at annual SheTech Conference, where Bridgerland hosts a booth
High School (9-12 grade)	● Make regular visits to participating high schools and present about the IT STEM Academy and UDAP (by IT STEM coordinator) ● Explain UDAP to current IT STEM students (by 8 IT-STEM high school teachers)
Unemployed	● Share UDAP info with DWS to promote the IT and Web & Mobile Development programs' start dates to unemployed workers (Bridgerland Marketing Department) ● Train Bridgerland's Marketing Department on the UDAP pathway, then have them host site tours and engage in career advising with unemployed
Incumbent Workers	● Present UDAP to local industry during Bridgerland and Mountainland advisory meetings, so local businesses can make their workers aware of a new stackable credential pathway ● Market pathway on social media.

Summary

In the last 120 days, there have been 3,850 job postings seeking employees with skills in "data analytics". Sadly, most of these jobs are not being filled because there just isn't a supply of data skilled workers to fill the vacancies. The main constraint in preparing an adequately-skilled workforce is that Utah does not offer instruction in data analytics nor recruit students prior to university. A pathway has not been developed, and there is no instruction at the lower levels of instruction. This means that students are first learning about data analytics a few years after they have begun their bachelor's degrees. Even if students enter into data analytics jobs at that late stage, they will be woefully underprepared to deal with the rigor of data sciences.

This proposal seeks funding to overcome these issues by: 1) expanding entry-level data analytics workforce pipeline, 2) developing and implementing a stackable-credential career pathway to guide students from entry-level to advanced-level data jobs, and 3) designing and implementing vertically aligned database management/data analytics curriculum between Bridgerland/Mountainland certifications and USU/UVU's associate and bachelor's degrees to prepare students to fill the industry workforce supply gap.

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97TH FLOOR
DIGITAL. MARKETING. ELEVATED.

Paxton Gray
EVP of Operations

Dear Lisa Birch,

97th Floor specializes in a variety of services relating to digital marketing, including search engine optimization, paid media, multimedia design, and marketing data analytics. Our work in creating marketing content for every potential digital channel and customer interaction relies on the wide range of skills and capabilities of our employees. We continually need and seek highly trained talent in data analytics to feed marketing and business decisions. In recent years, however, it has become increasingly difficult to find highly skilled employees in these areas.

For this reason, we are eager to support the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. We feel that this grant will supply more well-trained entry-level workers who will positively impact on the areas of data science in our company.

97th Floor strongly supports Bridgerland Technical College (BTECH), Mountainland Technical College (MTECH), Utah State University (USU), and Utah Valley University (UVU) in their proposal for Strategic Workforce Investment Grant funds to support the formation of a new Data Analytics pathway. As a partner in the UDAP stackable credential pathway, 97th Floor commits to:

- Participate in annual ongoing advisory meetings
- Review and advise on marketing and analytics curriculum
- Contribute to instruction (e.g., guest lectures, classroom teaching, conduct site tours, serve as panelists or judges)
- Work-based learning (e.g., externships, mentoring, job shadowing, demonstrations)
- Work with project partners to implement and monitor the project (e.g., collect data about progress toward proposed goals, submit required reports in a timely manner)

97th Floor is committed to working with all academic partners involved to align curriculum with workforce needs, expand and improve training pathways, and provide our workforce with training development. We are confident that BTECH, MTECH, USU, and UVU and other industry partners will leverage Strategic Workforce Investment funds to improve the economic vitality of Utah.

Sincerely,

Paxton Gray, Executive Vice President of Operations

2600 West Executive Parkway
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December 9, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

ATOMIC JOLT

Re: *Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant*

Atomic Jolt employs over 17 people in data, information systems, and software development positions. We value our employees in these positions, which include Software Developer, QA Engineer, DevOps Engineer, and Software Project Manager. Our current and future success is dependent on finding highly qualified people with essential knowledge, abilities, and skills for the management information systems and data analysis processes. However, for the past 10 years, it has been difficult to find well-trained talent in these areas of expertise. It is imperative to the ongoing growth of our company and state that we begin resolving this workforce supply issue.

Atomic Jolt is excited for the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant, and we see it as a big step in the right direction. We feel that it will simultaneously produce more entry-level workers at Atomic Jolt and provide opportunities for our current employees to increase their skills while continuing to work for us. Bridgerland Technical College (BTECH) has a fantastic record for working with a variety of institutions to create powerful online learning. We are excited to begin to offer this as an option for upskilling our current workforce.

Atomic Jolt supports BTECH and other educational institutions' proposal for Strategic Workforce Investment Grant funds to support the formation of a new data analytics and information systems pathway. The proposed pathway provides opportunities for students to apply secondary CTE education directly toward degree curriculum at USU and UVU through technical college certification.

As a partner in the UDAP stackable credential pathway, Atomic Jolt commits to participate in annual ongoing advisory meetings, review and advise on curriculum, and contribute to instruction. Atomic Jolt has a strong working relationship with BTECH, USU, and other academic partners. We are committed to working with these institutions in aligning curriculum with workforce needs, expanding and improving training pathways, and providing workforce with training development.

Sincerely,

Joel Duffin

Joel Duffin, President

Atomic Jolt

December 19, 2019

Dear Utah Governor's Office of Economic Development,

Autoliv is proud to serve northern Utah as a prominent employer. We employ over 4200 people in our locations in Brigham City, Ogden, and Tremonton. 120 of these esteemed employees specialize in Data Analytics, MIS, etc. We depend on finding, hiring, and retaining highly-qualified people to fill these positions related to our management information systems and data analysis process. Despite this, we have encountered difficulty filling these positions due to the prevalent workforce supply issue in this area of work.

We are committed to and invested in filling this workforce supply gap; therefore, Autoliv is excited to announce their partnership in the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. We feel that it will simultaneously provide Autoliv with more entry-level workers and provide our current employees with the opportunity to grow in skills.

Autoliv supports the proposed stackable credential pathway, which will promote and develop seamless pathways to associate and bachelor's degrees from technical college certification, starting in K-12. It will provide opportunities for students to apply their secondary CTE education at Bridgerland Technical College (BTECH) and Mountainland Technical College (MTECH) directly toward degree completion at USU and UVU.

To bring about the success of the UDAP program, Autoliv commits to provide student tours, job talks, and guest lectures. We will participate in annual ongoing advisory meetings on the advisory board. Autoliv will also contribute work-based learning by supplying students with externship and job shadowing opportunities.

Autoliv is committed to working with BTECH, USU, and other academic partners to align curriculum with workforce needs and provide workforce with training development. We are confident that BTECH and USU will work with education and industry partners to meet our state's employment needs, leading Autoliv's and Utah's workforce to thrive.

Sincerely,

Mark Christensen

Mark Christensen, IT Manager

Autoliv

BLUE RIM
NETWORKS

The Internet Management Company™

December 12, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: *Utah Data Analytics Pathway*

Blue Rim Networks' goal is to simplify and provide managed high-speed internet connectivity to communities such as apartments, townhouses, and condos. In order to achieve this goal, our company relies on having a well-trained workforce. Right now, we employ over 10 people in management information systems and data analysis. We cannot be successful without finding highly qualified people with essential management information systems and data analysis process knowledge, abilities, and skills. Finding these employees, however, is difficult. It is essential that this workforce supply issue is resolved for our company and our state.

For those reasons, we are excited to support Bridgerland Technical College (BTECH), Mountainland Technical College (MTECH), Utah State University (USU), and Utah Valley University (UVU) in their proposal for the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant funds, which will be used to support the formation of a new MIS pathway. We expect it to produce more entry-level workers at Blue Rim Networks and provide our current employees an opportunity to develop and improve their skills while continuing to work for us. The academic partners proposing this grant have proven their ability to create impactful online learning, so we are excited for our current workforce to have

339 North Main Suite 105, Logan, UT 84321 Office: 801.478.2060

this option in advancing their skillset.

As a partner in the UDAP stackable credential pathway, Blue Rim Networks commits to:

1. Review and advise on curriculum and participate in annual ongoing advisory meetings
2. Contribute to instruction (e.g., guest lectures, classroom teaching, conduct site tours, serve as panelists or judges)
3. Participate in work-based learning: externships, mentoring, job shadowing, and demonstrations

As Blue Rim Networks has a strong working relationship with each of the academic institutions involved, we are committed to partnering with them to align curriculum with workforce needs, expand and improve training pathways, and provide training development to the workforce.

Sincerely,

Darren Child, Founder/CEO
Blue Rim Networks

BOX ELDER SCHOOL DISTRICT
Learning is Everything

December 12, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant

Box Elder School District is excited for BTECH and USU's proposal for Strategic Workforce Investment Grant funds to support the formation of a new Utah Data Analytics Pathway (UDAP). This proposal will begin resolving Utah's workforce supply issue by giving students the opportunity to become highly skilled and, in turn, highly qualified in the data analysis process. The Strategic Workforce Investment Grant proposal will prepare our students to builds on the successful STEM IT program and provided critical support (i.e., much needed computers and curriculum). By promoting and developing seamless pathways to the Management Information Systems (MIS) B.S. at USU, the UDAP proposal will facilitate additional training and employment opportunities for high school and tech college-level students in the data industry. The proposed pathway provides opportunities for students to apply BTECH certification directly toward degree curriculum at USU.

As a partner in the UDAP stackable credential pathway, Box Elder School District commits to:

- Participate in annual ongoing advisory meetings
- Review and advise on curriculum
- Contribute to instruction (e.g., coordination of high school teacher facilitators/classroom teaching)
- Work with project partners to implement and monitor the project (e.g., collect data about progress toward proposed goals, submit required reports in a timely manner)

Box Elder School District is committed to working with BTECH and USU to establish and maintain a career-focused curriculum. Bridgerland Technical College (BTECH) and the MIS department at Utah State University (USU) have a fantastic record for creating powerful online learning. We are excited for our students to enter the workforce through this pathway.

Sincerely,

Darrell M. Eddington

Darrell Eddington
Director of CTE & Assessment

LOGAN CITY SCHOOL DISTRICT
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December 11, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant

Logan School District is excited for the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. We are especially excited for BTECH's proposal for Strategic Workforce Grant funds to support the formation of a new data analytics pathway. This proposal will begin resolving Utah's workforce supply issue by giving students the opportunity to become highly skilled and, in turn, highly qualified in management information systems, database administration, and data analytics. By promoting and developing seamless pathways to USU and UVU, the UDAP proposal will facilitate additional training and employment opportunities for high school and tech college-level students. The proposed pathway also provides opportunities for our CTE teachers to gain highly desired industry skills.

As a partner in the UDAP stackable credential pathway, Logan School District commits to:

- Participate in CTE Directors meetings
- Review and advise on curriculum
- Coordinate STEM IT after-school courses and high school teacher facilitators
- Marketing of courses and stackable credential pathway
- Collect data about progress toward proposed goals, submit required reports in a timely manner in order to ensure the project's success

The Logan School District has a strong working relationship with BTECH, and we are dedicated to working with all partner institutions involved to align curriculum with workforce needs, expand and improve training pathways, and provide workforce with training development. We are confident that BTECH will work with education and industry partners and will use Strategic Workforce Grant funds to improve the economic vitality of Utah. Our district strongly supports BTECH's proposal for Strategic Workforce Grant funds to support the formation of a new data analytics pathway.

Sincerely,

Daryl Guymon
Director, Educational and Technical Services
Logan City School District

CERTIFIED EDUCATION TECHNOLOGY LEADER CETL

Rich High School

Rick Larsen • Principal
Tammy Hoffman • Secretary

P.O. Box 278 • Randolph, Utah 84064 • (435) 793-2365 • FAX: (435) 793-2375

December 12, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant

Rich High School is excited for the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. We are confident that BTECH and USU's proposal for Strategic Workforce Investment Grant funds will begin resolving Utah's educational and employment gaps by giving students the opportunity to become highly qualified in management information systems and the data analysis process. By promoting and developing seamless pathways from BTECH to the Management Information Systems (MIS) B.S. at USU, the UDAP proposal will facilitate additional training and employment opportunities for our high school students.

As a partner in the UDAP stackable credential pathway, Rich High School commits to:

- Participate in annual ongoing advisory meetings
- Review and advise on curriculum
- Contribute to instruction (e.g., guest lectures, classroom teaching, conduct site tours, serve as panelists or judges)
- Work with project partners to implement and monitor the project (e.g., collect data about progress toward proposed goals, submit required reports in a timely manner)

Rich High School is dedicated to helping BTECH, USU, and other academic partners expand and improve training pathways by teaching students about and encouraging their participation in this great program. We are confident that BTECH and USU will work with education and industry partners and will use Strategic Workforce Investment Grant funds to align curriculum with workforce needs and, in turn, improve the economic vitality of Utah. Our school strongly supports BTECH and USU's proposal for Strategic Workforce Investment Grant funds to support the formation of a new MIS pathway.

Sincerely,

Rick Larsen MBA, M.Ed.
CTE Director, Principal
Rich High School

"Home of the Rebels"

CACHE COUNTY
SCHOOL DISTRICT

84 East 2400 North
North Logan, UT 84341
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www.ccsdut.org

December 10, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant

Cache County School District is excited for Bridgerland Technical College (BTECH), Utah State University (USU), Utah Valley University (UVU), and Mountainland Technical College's proposal for the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. The grant will be used to support the formation of a new MIS pathway. This proposal will make strides to resolve Utah's workforce supply issue by giving students an opportunity to become highly skilled and highly qualified in the data analytics. By promoting and developing smooth pathways to associate's and bachelor's degrees at USU and UVU, the UDAP proposal will facilitate additional training and employment opportunities for high school and tech college-level students. We are optimistic about the positive effects on employees and our local economy as students use this pathway to apply their BTECH education toward their USU MIS bachelor's degree.

As a partner in the MISDAP stackable credential pathway, Cache County School District commits to the following:

- Participate in CTE Directors meetings
- Review and advise on curriculum
- Contribute to instruction (e.g., classroom space, computers)
- Promote the coursework and stackable credential pathway
- Work with BTECH to implement and monitor the project

The Cache County School District has a strong working relationship with BTECH and USU. We are committed to working with both institutions, and other institutions involved, to expand and improve training pathways. BTECH and the MIS Department at USU have a fantastic record for creating powerful online learning. We are excited for our students have this pathway with which they can enter the workforce.

Sincerely,

Michael R Liechty

Michael R Liechty
Deputy Superintendent

BRIDGERLAND TECHNICAL COLLEGE

btech.edu

December 9, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: *Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant*

With Silicon Slopes, Adobe, Qualtrics, and Domo, Utah is a hub for Management Information Systems (MIS) and data analytics. However, it currently fails to meet the rapidly increasing need for highly-qualified and well-trained individuals for these positions, causing a skills gap. In some cases, workers in other fields have had to evolve and take on data analytics roles without having the skills to do so. In other cases, organizations are struggling to find employees to fill these roles because Utah is producing too few workers with data skills. The advancements made with early MIS and data analytics-related programs, such as IT-STEM and Code to Success, are auspicious but not enough. This proposal resolves both sides of the skills gap by aiding in skills evolution, increasing data practitioners for middle-skills jobs, and increasing data professionals for high-skills jobs. This will be achieved with a stackable credential pathway in data analytics. With this, students will a) be encouraged to begin study in this field, and b) be smoothly guided into advanced IT positions.

Bridgerland Technical College (BTECH) strongly supports our shared proposal with Utah State University (USU), Utah Valley University (UVU), and Mountainland Technical College (MTECH) for the Talent Ready Utah Grant funds to support the formation of a new data analytics stackable credential career pathway. This much-needed career pathway will streamline students upward from Utah's school districts and technical college programs into and within the MIS and data analytics workforce, a growing field that the state increasingly needs to fill. Existing resources (such as IT-STEM and Code to Success) will be expanded with new concurrent enrollment opportunities. These opportunities will lift secondary students, the unemployed, and employed workers looking for advancement.

The proposed Utah Data Analytics Pathway (UDAP) program will facilitate additional training and employment opportunities for high school and post-secondary students by promoting and developing seamless pathways to the new Management Information Systems (MIS) B.S. at USU, and UVU. As a partner in the UDAP, BTECH will provide managerial oversight for the program as it relates to our students.

Specifically, BTECH commits to:

- work with USU, UVU, MTECH, and other academic partners involved to coordinate the horizontal and vertical articulation of curriculum to grant partners
- work with project partners to implement and monitor the project
- monitor project budgets and spending
- participate in professional development workshops
- implement curriculum following the state of Utah's education standards
- collect data about progress toward proposed goals
- submit required reports promptly

BTECH already has a strong working relationship with USU, UVU, and MTECH. All institutions are committed to 1) aligning curriculum with workforce needs, 2) expanding and improving training pathways, and 3) providing data analytics training development in Utah. We are confident that USU and BTECH will work with education and industry partners and leverage Strategic Workforce Investment funds to improve economic vitality across the entire state of Utah.

Sincerely,

K. Chad Campbell
President

CACHE COUNTY
SCHOOL DISTRICT

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December 10, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant

Cache County School District is excited for Bridgerland Technical College (BTECH), Utah State University (USU), Utah Valley University (UVU), and Mountainland Technical College's proposal for the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. The grant will be used to support the formation of a new MIS pathway. This proposal will make strides to resolve Utah's workforce supply issue by giving students an opportunity to become highly skilled and highly qualified in the data analytics. By promoting and developing smooth pathways to associate's and bachelor's degrees at USU and UVU, the UDAP proposal will facilitate additional training and employment opportunities for high school and tech college-level students. We are optimistic about the positive effects on employees and our local economy as students use this pathway to apply their BTECH education toward their USU MIS bachelor's degree.

As a partner in the MISDAP stackable credential pathway, Cache County School District commits to the following:

- Participate in CTE Directors meetings
- Review and advise on curriculum
- Contribute to instruction (e.g., classroom space, computers)
- Promote the coursework and stackable credential pathway
- Work with BTECH to implement and monitor the project

The Cache County School District has a strong working relationship with BTECH and USU. We are committed to working with both institutions, and other institutions involved, to expand and improve training pathways. BTECH and the MIS Department at USU have a fantastic record for creating powerful online learning. We are excited for our students have this pathway with which they can enter the workforce.

Sincerely,

Michael R Liechty
Deputy Superintendent

EXTENSION
UtahStateUniversity

CACHE COUNTY OFFICE

December 9, 2019

Re: *UDAP Strategic Workforce Investment Grant*

Dear Mason,

Cache Makers is a nonprofit STEM Education Center & Community Makerspace. Project-based learning and hands-on experiences are at the core of Cache Makers approach to providing high-quality, affordable programming to youth in our community. Our outreach efforts emphasize activities and events geared towards creating opportunities for girls and other populations traditionally underserved in STEM careers. Because we provide STEM project-based experiences at the Maker Space, we are able to promote a unique and clear pathway that encourages the youth in our community to seek out and further their education in areas such as data analytics.

Cache Makers serves roughly 1000-2500 youth annually and has 2,882 members. As a leader in youth tech education in northern Utah, Cache Makers is uniquely positioned to become a marketing partner with Bridgerland Technical College on their Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant.

Cache Makers commits to the following:

- Train our faculty on the UDAP pathway
- Distribute marketing materials for the UDAP pathway (mailings/website)
- Co-develop an introductory data analytics/coding summer 2020 workshop with Bridgerland's IT department for 6-9th graders
- Work with project partners to implement and monitor the project (e.g., collect data about progress toward proposed goals, submit required reports in a timely manner

We look forward to promoting this pathway and helping to resolve the data analytics workforce supply gap in Utah. Cache Makers is dedicated to helping BTECH, USU, and other academic partners expand and improve training pathways by teaching students about and encouraging their participation in this great program.

Sincerely,

Jonny Kearl
Program Director
Cache Makers 4-H Club

1400 Old Main Hill Logan, UT 84322-0500 Phone: (435) 797-1250 Fax: (435) 797-2117
extension.usu.edu

CACHE VALLEY BANK

DRU TAYLOR
Chief Information Officer

101 North Main
Logan, UT 84321

Office: (435) 753-3020 x 4175
dtaylor@cachevalleybank.com

December 13, 2019
To Whom It May Concern:

Cache Valley Bank manages over 1.5 billion dollars for Utah residents and businesses across 20 branches throughout the state. Management of this vast network requires skilled labor in the areas of technology, management information systems, information security, and data analytics. The bank employs roughly 275 Utahns and more than 10 people in the targeted fields mentioned above. We are constantly in search of talented and trained technicians who have skills in these fields. Given the growing need of these positions nationwide, it has become difficult to find employees who exhibit these data skills within our hiring communities. It is incredibly important that we address the deficient workforce for our company and our state.

The Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment grant is one way we can start resolving the issue within Cache Valley. Cache Valley Bank supports Bridgerland Technical College (BTECH) and partnering institutions' proposal for Strategic Workforce Investment funds to support the formation of a new stackable credential pathway in data sciences. The UDAP proposal promotes and develops a smooth pathway from high school courses through BTECH or Mountainland Technical College (MTECH) up to an associate and bachelor's degree at Utah State University or Utah Valley University. We feel that this grant and pathway will simultaneously produce more qualified entry-level data workers within the Cache Valley community as well as allow our current employees to enhance their skills through advanced degrees.

As a partner in the UDAP stackable credential pathway, Cache Valley Bank commits to: a) participate in ongoing semi-annual advisory meetings; b) review course curriculum; c) prepare guest lectures; d) teach in the classroom; d) conduct site tours; f) contribute monetarily or through in-kind contributions of time/service; g) donate IT equipment; f) provide work-based learning opportunities such as internships, mentoring, job shadowing, and demonstrations; and h) assist in tuition for current Bank employees.

Cache Valley Bank has a strong working relationship with BTECH and USU. We are committed to working with these institutions and other academic partners to align curriculum with workforce needs, expand and improve training pathways, and provide our workforce with training development. This grant will significantly help bolster needed skill sets and qualified workers within our community and provide Utah with a stronger workforce foundation in the technology sector for a growing future.

Sincerely,

Dru Taylor, Chief Information Officer
Cache Valley Bank

CONSERVICE®
The Utility Experts®

750 S. Gateway Drive
River Heights, UT 84321
conservice.com

December 20, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant

Conservice employs over 150 people in management information systems, information technology, and data analytics. Our current and future success is dependent upon having a well-trained workforce. The data analytics positions we employ include data analysts, database engineers, and database administrators - all of which are pivotal in our success. When this talent pool dwindles, we are less successful. Fortunately, we have received a great culmination of skill sets from employees coming from Utah State University. We are anxious for that to continue and increase.

Conservice strongly supports the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. We feel that it will provide more well-trained entry-level workers that will positively impact the data science departments at Conservice. The grant would also simultaneously produce more entry-level workers at Conservice and offer our current employees the ability to upskill while they are working.

Conservice strongly supports BTECH and USU's proposal for Strategic Workforce Investment Grant funds to support the formation of a new MIS pathway. By promoting and developing seamless pathways into the Management Information Systems (MIS) B.S. at USU, the UDAP proposal will facilitate additional training and employment opportunities for high school and tech college-level students. The proposed pathway provides opportunities for students to apply secondary CTE education directly toward degree curriculum at USU and Utah Valley University through BTECH and Mountainland's certificate programs.

As a partner in the UDAP stackable credential pathway, Conservice commits to:

- Participate in annual ongoing advisory meetings
- Review and advise on curriculum
- Contribute to instruction (e.g., guest lectures, classroom teaching, conduct site tours)
- Work-based learning (e.g., externships, mentoring, job shadowing, demonstrations)
- Work with project partners to implement and monitor the project (e.g., collect data about progress toward proposed goals, submit required reports in a timely manner)

Conservice has a strong working relationship with BTECH and USU. We are committed to working with both institutions to align curriculum with workforce needs, expand and improve training pathways, and provide workforce with training development. We are confident that BTECH, USU, and other academic and industry partners will leverage Strategic Workforce Investment funds to improve Utah's economy.

Sincerely,

Shauna Karren, HR Director
Conservice

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Workforce Services

JON S. PIERPONT
Executive Director

CASEY R. CAMERON
Deputy Director

GREG PARAS
Deputy Director

December 12, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Dear Governor's Office of Economic Development,

One of the greatest areas of needs identified by employers is highly qualified people with essential knowledge, abilities, and skills for the management information systems and data analysis process. There has been a workforce supply issue regarding these criteria for the past several years and this gap is significantly widening. It is imperative that we begin resolving this workforce supply issue for our organization and our state.

DWS is excited for the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. We see this as a big step in the right direction, as it will simultaneously produce more entry-level workers for this field and allow current employees to improve their skills while continuing to work. Bridgerland Technical College (BTECH), Utah State University, Utah Valley University, and the included educational institutions in Utah have valuable proven records for creating powerful curriculum and stackable credential pathways. We are excited to begin to offer this as an option for individuals preparing for and finding jobs.

As a partner in the UDAP stackable Data Analytics pathways, DWS commits to:

- participate in annual ongoing advisory meetings
- promote the grant and pathway to jobs seekers aligned with data analytics
- review and advise curriculum and contribute to instruction
- help facilitate work-based learning opportunities (e.g. externships, mentoring, job shadowing, demonstrations)
- provide labor market information and other data resources

DWS has a strong working relationship with Bridgerland as well as UVU, USU, and Mountainland. We are confident that these institutions will work with education and industry partners to close this very real workforce supply skills gap in data.

Sincerely,

Debbie Sparks

Debbie Sparks, Director

January 2, 2020

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

RE: Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant

EarthSoft is the recognized leader in providing environmental data management systems and support worldwide. We provide more than two decades of focused experience on automated workflow solutions for public and private entities in the areas of chemistry, biology, geology, limnology, water, air quality, soil, sediment, waste, and associated compliance monitoring data. EarthSoft is dedicated to enriching the capabilities of our EQuIS product line and our clients' experience.

In our industry, as well as many others, data is often an invaluable asset to an organization. Data specialists, that can help turn data into actionable information, are a growing necessity across industries. We see that the Utah Data Analytics Pathway (UDAP) grant will make great strides in helping prepare data specialists for this growing demand.

As a supporter of the UDAP grant, EarthSoft's participation may include participation in annual ongoing advisory meetings, review of curriculum, and cooperative instruction (e.g. guest lectures, serve as panelists or judges, etc.).

EarthSoft is excited for the UDAP and the positive influence it will have on the data analytics workforce and Utah's economy.

Sincerely,

Mathew Weaver, PhD
Chief Technical Officer
EarthSoft, Inc.

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Eide Bailly Analytics
703 Timpanogos Pkwy., Ste. 1100
Orem, UT 84097-1810

December 27, 2019

Re: *Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant*

Eide Bailly believes in a better way of doing business. At Eide Bailly, we bring our knowledge, passion, and experience to transform the way businesses operate and deliver lasting results by using data analytics. We firmly believe that the future economy is all about data and know that data can help businesses make better decisions, which is why having a strong, statewide partnership committed to creating better pipelines the data analytics profession is so important to our company.

If Bridgerland Technical College, in partnership with USU, MTECH, and UVU, is awarded this grant, we are assured that students will be better prepared to meet our workforce needs. We need to hire qualified people at all levels and having a true partnership between the tech colleges and universities ensures that we will have consistent, high-quality training for our future employees as well as for current employees who wish to continue their education for advancement in the industry.

As a strong supporter of the UDAP stackable credential pathway, Eide Bailly commits to:

- Participate in annual ongoing advisory meetings
- Review and advise on curriculum

Eide Bailly has a strong working relationship with UVU. We are committed to working with all institutions involved to align curriculum with workforce needs, expanding and improving training pathways, and providing workforce with training development. We are confident that BTECH, MTECH, USU, and UVU will work with education and industry partners and leverage Strategic Workforce Investment funds to improve economic vitality across the entire state of Utah.

x _____

Nathan McMurtrey
Eide Bailly LLP
703 Timpanogos Pkwy., Ste. 1100
Orem, UT 84097

December 12, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant

Fox Pest Control employs 4 people in Data Analytics in positions including Director of Information Technology, Business Intelligence Manager, Database Administrator, and Data Analyst. Our success, much like other companies, is dependent on having a well-trained workforce. It is important to find highly qualified people with the essential knowledge, abilities, and skills for the management information systems and data analysis process.

We are excited for the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant, because it will simultaneously produce more entry-level workers at Fox Pest Control and allow our current employees to increase their skills while continuing to work for us. We support Bridgerland Technical College (BTECH) and Utah State University's proposal for Strategic Workforce Investment Grant funds to support the formation of a new Data Analytics pathway.

As a partner in the UDAP stackable credential pathway, Fox Pest Control commits to:

- Participate in annual ongoing advisory meetings
- Review and advise on curriculum
- Contribute to instruction (e.g. guest lectures, classroom teaching, conduct site tours, serve as panelists or judges)
- Provide work-based learning (e.g. externships, mentoring, job shadowing, demonstrations)
- Work with project partners to implement and monitor the project (e.g. collect data about progress toward proposed goals, submit required reports in a timely manner)

Fox Pest Control is committed to helping all educational institutions involved with the grant in creating and sustaining their career-focused curriculum.

Sincerely,

John Peterson

Director of Information Technology

HRI

HARRIS RESEARCH, INC.

December 12, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant

Harris Research, Inc. employs over 175 people in Franchise Services (Chem-Dry, N-Hance, Delta Restoration Services brands). These positions are pivotal in our success, and we cannot be successful without finding highly qualified people. Therefore, these people need to have essential knowledge, abilities, and skills for the management information systems and data analysis process. For the past 4+ years, it has been difficult to find people who meet these qualifications. It is crucial that we begin resolving this workforce supply issue for our company and our state.

Our company is excited for the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. We feel that it will simultaneously produce more entry-level workers at Harris Research, Inc., and, even more exciting, allow our current employees to have the ability to grow their skills while continuing to work for us. Bridgerland Technical College (BTECH) and the Management Information Systems (MIS) department at Utah State University (USU) have an outstanding record for creating effective online learning. We are excited to begin to offer this as an option for upskilling our current workforce.

Harris Research, Inc. strongly supports BTECH and USU's proposal for Strategic Workforce Investment Grant funds to support the formation of a new MIS pathway. By promoting and developing seamless pathways from BTECH and Mountainland Technical College certification programs to the MIS B.S. at USU and Utah Valley University, the UDAP proposal will give high school and tech college-level students opportunities for training and employment.

As a partner in the UDAP stackable credential pathway, Harris Research Inc. commits to the following:

- Participate in annual ongoing advisory meetings
- Review and advise on curriculum
- Contribute to instruction (e.g., guest lectures, classroom teaching, conduct site tours, serve as panelists or judges)
- Provide work-based learning (e.g., externships, mentoring, job shadowing, demonstrations)

Sincerely,

Matthew Tippets, Director of IT
Harris Research, Inc.

124 12TH AVE. SOUTH • SUITE 300 • NASHVILLE, TN 37203 1530 NORTH 1000 WEST • LOGAN, UTAH 84321
TELEPHONE 800 841 6583 • FACSIMILE 615 678 4452 • WWW.HRISUPPORT.COM

ICON HEALTH & FITNESS

December 16, 2019

To Whom It May Concern,

Icon Health & Fitness employs over 1,000 people who focus on innovations that assist our customers in leading a healthy lifestyle. Among our own esteemed workforce, we have positions available in web development, application development, data analytics and security, and IT infrastructure. As these positions are central to our current and future success, it is imperative for our company to have a stream of highly qualified people with essential knowledge, abilities, and skills for the management information systems and data analytics process.

Data analytics is a new and quickly growing field. The recentness of the field, along with how quickly it is growing, has made it difficult to find local employees that meet these criteria, especially in the past five years. It is imperative that we begin resolving this workforce supply issue for our company and our state.

We feel that Bridgerland's Utah Data Analytics Pathway (UDAP) will not only produce more entry-level workers in data analytics and IT at Icon Health & Fitness, but it will also give our current employees the opportunity to expand their skills while working for us. Through this stackable credential pathway, students will advance upwards from K-12 to Technical Colleges and then to associate and bachelor's degrees. Bridgerland has a fantastic record for creating powerful online learning with other regional technical colleges and universities.

As a partner in the UDAP stackable credential pathway, Icon Health & Fitness commits to:

- Participate in annual ongoing advisory meetings
- Review and advise on curriculum
- Contribute to instruction (e.g. guest lectures, classroom teaching, conduct site tours, serve as panelists or judges)
- Provide work-based learning (e.g. externships, mentoring, job shadowing, demonstrations)
- Work with project managers to implement and monitor the project (e.g. collect data about progress toward proposed goals, submit required reports in a timely manner)

Icon Health & Fitness is committed to assisting BTECH and other educational partners in building and maintaining this career-focused curriculum. We are confident that all of the educational and industry partners will leverage Strategic Workforce Investment Grant funds to improve economic vitality across the entire state of Utah.

Sincerely,

Tracy Cox, IT Ecommerce Director

[redacted]

INSTRUCTURE

canvas · bridge

December 20, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: Utah Data Analytics Pathway (UDAP) Grant

Dear Kimberlee Carlile,

Instructure is growing. It has been difficult at times to find skilled software developers to continue to be an innovative technology leader. However, no job type has been more difficult to fill than data jobs. Companies here in Utah, as well as the West coast, are engaging in bidding wars over people skilled in data due to the low supply. This decrease in the pool of qualified applicants stifles our growth as an innovative leader in our industry.

Instructure is in full support of the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. We believe that it will be a big step towards producing more highly qualified entry-level workers in the field of data analytics to enable Instructure to grow. Increased growth and technological advancement at Instructure will also leave a positive impact on educational institutions throughout Utah that use our learning management platforms to facilitate student learning. The stackable credential pathway will also enable our own employees to continuously upskill while they are working for us.

Instructure commits to support the UDAP grant by:

- Giving feedback on curriculum to ensure it meets our needs
- Promoting the pathway
- Contributing to instruction (i.e., site tours)
- Participating in advisory meeting,
- Provide work-based learning opportunities (e.g., externships, mentoring, job shadowing, demonstrations).

This grant is aligned to our most pressing workforce needs. Instructure is committed to working with Bridgerland Technical College, Mountainland Technical College, USU, and UVU to ensure that this grant, if funded, is successful.

Sincerely,

Jeff Weber
EVP of People and Places
Instructure

101 WEST CENTER STREET, LOGAN, UTAH 84321
WWW.LOGANSCHOOLS.ORG
P 435 755 2300
F 435 755 2311

December 11, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant

Logan School District is excited for the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. We are especially excited for BTECH's proposal for Strategic Workforce Grant funds to support the formation of a new data analytics pathway. This proposal will begin resolving Utah's workforce supply issue by giving students the opportunity to become highly skilled and, in turn, highly qualified in management information systems, database administration, and data analytics. By promoting and developing seamless pathways to USU and UVU, the UDAP proposal will facilitate additional training and employment opportunities for high school and tech college-level students. The proposed pathway also provides opportunities for our CTE teachers to gain highly desired industry skills.

As a partner in the UDAP stackable credential pathway, Logan School District commits to:

- Participate in CTE Directors meetings
- Review and advise on curriculum
- Coordinate STEM IT after-school courses and high school teacher facilitators
- Marketing of courses and stackable credential pathway
- Collect data about progress toward proposed goals, submit required reports in a timely manner in order to ensure the project's success

The Logan School District has a strong working relationship with BTECH, and we are dedicated to working with all partner institutions involved to align curriculum with workforce needs, expand and improve training pathways, and provide workforce with training development. We are confident that BTECH will work with education and industry partners and will use Strategic Workforce Grant funds to improve the economic vitality of Utah. Our district strongly supports BTECH's proposal for Strategic Workforce Grant funds to support the formation of a new data analytics pathway.

Sincerely,

Daryl Guymon
Director, Educational and Technical Services
Logan City School District

December 9, 2019

Dear Mason,

This letter is to express our support for the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. We have hired, and as we as we continue hire employees that specialize in data analytics, relating to business and marketing, we know the importance of having a highly skilled pool of candidates in this field. In the past few years, it has been increasingly difficult to find well-trained entry-level candidates to fill open positions in data analytics. It is crucial that we help solve this issue for the future success of our company and the economy of Utah as a whole.

We believe this grant will supply Marketing AI with more highly skilled candidates for open job positions relating to data analytics in business and marketing through the formation of a new Data Analytics pathway. This stackable credential pathway will allow high school students to gain entry-level skills at Bridgerland and/or Mountainland Technical Colleges and apply their technical certificates toward degrees in Management Information Systems (MIS) at Utah State University or Utah Valley University.

As a partner in the UDAP grant, we commit to:

- Participate in annual ongoing advisory meetings
- Review and advise on marketing and analytics curriculum
- Contribute to instruction (e.g., guest lectures, classroom teaching, conduct site tours, serve as panelists or judges)
- Work-based learning (e.g., externships, mentoring, job shadowing, demonstrations)
- Work with project partners to implement and monitor the project (e.g., collect data about progress toward proposed goals, submit required reports in a timely manner)

We commit to working with all of the academic and industry partners to review curriculum, expand and improve the educational pathways, and provide training development for our employees.

Sincerely,

R. Ratliff

Rob Ratliff
Owner Marketing Ai

Office of the President
Clay Christensen

2301 West Ashton Blvd. Lehi, Utah 84043
CChristensen@mtec.edu
801.753.4123

December 18, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant

Demand for trained information technology workers skilled in data analytics continues to grow. It is abundantly clear that Utah is not producing enough data industry workers to satisfy demand, and that the situation isn't improving. During industry advisory meetings, local employers have communicated that they need data analytic specialists if they are going to be able to grow or even maintain their businesses. Mountainland has been making strides to fill this workforce supply gap by 1) adding on a marketing analytics certificate program, 2) increasing the size of our IT facilities so that we can double the number of students taught, and 3) adding more instruction on data, analytics, and database management into our current certificates. Our new facilities will be ready by the fall of 2020 and we will use these funds to hire instructors, purchase computers, and train our teachers. Without these funds, it will be difficult to scale up to the size we need to be in order to satisfy industry demand. Furthermore, this grant will also create a pathway for our entry-level workers to continue to gain expertise so that they are able to fill advanced data science positions.

The Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant proposal resolves many of our immediate needs and will help us close the current data workforce skills gap through a statewide stackable credential pathway. Mountainland Technical College (MTECH) strongly supports BTECH's proposal. This pathway will create a crucial career pathway in a field that is currently in need around the state and will only grow exponentially going forward.

As a partner in the UDAP SWI Grant, MTECH will provide managerial oversight for the program as it relates to our students. Specifically, MTECH commits to:

- Use funds to hire Adjunct Analytics Instructor(s) to help more students successfully complete the MTECH Technology Programs;
- Allocate funds annually for the incremental and ongoing updating of student computers;
- Create and maintain new data analytics curriculum with other educational institutions in Utah through a closed Canvas Consortium;
- Participate in the monitoring of progress toward grant objectives by submitting information to BTECH in a timely manner.

MTECH already has strong working relationships with Bridgerland Technical College and Utah Valley University. These institutions are committed to aligning curriculum with workforce needs; expanding and improving training pathways, and providing workforce for data analytics in Utah. We are confident that BTECH and the other included educational institutions will work with industry partners to leverage Strategic Workforce Investment funds to improve the economic vitality across the entire state of Utah.

Sincerely,

Clay Christensen, College President
Mountainland Technical College

MX | DATA FOR **BETTER BANKING**

3401 North
Thanksgiving Way Ste
500
Lehi, UT 84043
(801) 669-5500
www.mx.com

December 17, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: *Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant*

MX Technologies puts a user's data on center stage, molding it into a cohesive, intelligible, and interactive visualization. As a result, users engage more often and more deeply with a company's digital banking products. Placing this emphasis on data means we need highly qualified and highly skilled employees with backgrounds in data science. However, the recent acceleration of the data science field means there are not a lot of candidates with the needed knowledge and experience for these positions. It is imperative to the ongoing growth of our company and State that we begin resolving this workforce supply issue.

MX Technologies is excited for the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. We feel that it will simultaneously produce more entry-level workers while also offering a pathway for our current employees to increase their skills while continuing to work for us. The stackable credentialed pathway is much needed in the State and will help direct more students to these high wage jobs.

As a partner in the UDAP stackable credential pathway, MX Technologies commits to participate in annual ongoing advisory meetings, review and advise on curriculum, and contribute to instruction. We have a strong working relationship with Mountainland Technical College and Utah Valley University and look forward to working with the other academic partners on the grant. MX Technology is committed to working with these institutions in aligning curriculum with workforce needs, expanding and improving training pathways, and providing workforce with training development.

Sincerely,

Brett Allred
Chief Product Officer

December 19, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: *Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant*

Pope Tech is a Cache Valley, UT-based small business specializing in web application development, security, and website accessibility. We employ a handful of talented data science professionals that require up-to-date skills. When we hire for these positions, we value finding candidates with the knowledge, skills, and abilities required for software development and data. Often, these positions cannot be filled, because there are not enough candidates for this new and quickly-developing field. The burden of getting these employees to a point that they add value to our organization often leaves us choosing not to hire and to make do with what we have. The programs students are attending need stronger alignment with what the industry is doing so that graduates of their programs are readily able to step into jobs.

USU has a fantastic record for creating powerful online learning. We are excited to begin to offer this as an option for creating more experiences and better opportunities in our community.

Thus, we are pleased to support the proposed Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. This grant will produce more qualified entry-level candidates and prepare them to stay informed and knowledgeable of data technology development as it occurs. We feel that it will simultaneously produce more entry-level workers as well as improve the quality and the experiences these workers receive in their academic preparation to enter the workforce. The grant will also give our current employees the opportunity to upskill in the data analytics field.

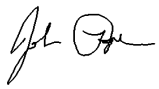
Pope Tech strongly supports Bridgerland Technical College (BTECH) Mountainland Technical College, Utah State University (USU), and Utah Valley University's (UVU) proposal for Strategic Workforce Investment Grant funds to support the formation of a new statewide stackable credential pathway. By promoting and developing seamless pathways from K-12 to Technical Colleges and then into associate and bachelor's degrees, the Utah Data Analytics Pathway (UDAP) proposal will facilitate additional training and employment opportunities for high school students, tech college-level students, current employees, and future employees.

As a partner in the UDAP statewide stackable credential pathway, Pope Tech commits to:

- Collaborate to develop program-specific analytics curriculum (web analytics - added to Web Development, etc.).
- Participate in annual ongoing advisory meetings
- Review and advise on curriculum
- Contribute to instruction (e.g., guest lectures, classroom teaching, conduct site tours, serve as panelists or judges)
- Provide work-based learning (e.g., externships, mentoring, job shadowing, demonstrations)

Pope Tech is committed to working with BTECH, MTECH, USU, UVU, and industry partners to create and sustain a data analytics career-focused curriculum for students and the workforce.

Sincerely,



John Pope
Partner, VP of Software Development

RentDynamics

Rent Dynamics
91 E. 700 S.
Logan, UT 84321

April 22, 2019

Management Information Systems & Data Analytics Pathway - Talent Ready Utah Grant

Rent Dynamics offers multiple products in the multi-family industry. We provide a revolutionary lead management product for prospects seeking to move into an apartment. We help facilitate and manage the process from initial call until they ultimately move into the apartment. In addition once they are residents we work with the credit bureaus to report their on-time rent payments to help build our residents credit. We also have a full-service contact center to help fill any staffing gaps or needs our clients may have.

As our company continues to expand we find ourselves in need of a data analytics and business intelligence team in order to put our data to work. We currently have a smaller team of 2-5 people that are responsible for this area of work. In addition to our data analytics teams we also have 18 full time developers who are comprised of both Management Information Systems graduates as well as Computer Science graduates. We are continually in need of additional help and our team will continue to grow. We've attended multiple career fairs from USU and around the valley and there just are not enough students that have good hands on experience to fill all of our positions.

Rent Dynamics fully supports Bridgerland Technical College (BTECH) and Utah State University's (USU) Management Information Systems & Data Analytics Pathway (MISDAP) proposal for Talent Ready Utah Grant funds to help support the formation of a new MIS pathway.

As a partner in the MISDAP stackable credential pathway, Rent Dynamics commits to:

- Participate in annual ongoing advisory meetings
- Review and advise on curriculum
- Contribute to instruction (e.g., guest lectures, classroom teaching, conduct site tours, server as panelists or judges, allow job shadowing opportunities and mentorship)
- Work based learning (e.g., externships, mentoring, job shadowing, demonstrations)

Rent Dynamics is confident that BTECH and USU will work with industry partners and leverage Talent Ready Utah funds to improve Utah's economy and eligible workforce.

Best Regards,

Skyler Cain
Software Development Manager
435.232.9498

Rich High School

Rick Larsen • Principal
Tammy Hoffman • Secretary

P.O. Box 278 • Randolph, Utah 84064 • (435) 793-2365 • FAX: (435) 793-2375

December 12, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant

Rich High School is excited for the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. We are confident that BTECH and USU's proposal for Strategic Workforce Investment Grant funds will begin resolving Utah's educational and employment gaps by giving students the opportunity to become highly qualified in management information systems and the data analysis process. By promoting and developing seamless pathways from BTECH to the Management Information Systems (MIS) B.S. at USU, the UDAP proposal will facilitate additional training and employment opportunities for our high school students.

As a partner in the UDAP stackable credential pathway, Rich High School commits to:

- Participate in annual ongoing advisory meetings
- Review and advise on curriculum
- Contribute to instruction (e.g., guest lectures, classroom teaching, conduct site tours, serve as panelists or judges)
- Work with project partners to implement and monitor the project (e.g., collect data about progress toward proposed goals, submit required reports in a timely manner)

Rich High School is dedicated to helping BTECH, USU, and other academic partners expand and improve training pathways by teaching students about and encouraging their participation in this great program. We are confident that BTECH and USU will work with education and industry partners and will use Strategic Workforce Investment Grant funds to align curriculum with workforce needs and, in turn, improve the economic vitality of Utah. Our school strongly supports BTECH and USU's proposal for Strategic Workforce Investment Grant funds to support the formation of a new MIS pathway.

Sincerely,

Rick Larsen MBA, M.Ed.
CTE Director, Principal
Rich High School

"Home of the Rebels"

EXTENSION

UtahStateUniversity

Rural Online Initiative

December 17, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111
Re: Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant

The purpose of the Rural Online Initiative (ROI) program is to provide Utah's rural workforce and businesses with education, training, and services for online opportunities in remote employment, freelance work, and e-commerce. The continued success we are having in Utah is dependent on finding highly qualified people with essential knowledge, abilities, and skills for the management information systems and data analysis process. However, there is a shortage of available candidates in the data field. It is imperative that we begin resolving the workforce supply issue within our state by promoting and developing seamless pathways from K-12 to higher education. In the case of the Utah Data Analytics Pathway (UDAP), higher education includes the progression of Technical Colleges to associate and bachelor's degrees.

The proposed UDAP is a big step in the right direction. We feel that it will simultaneously produce more entry-level workers for our data-focused jobs as well as provide those employees with the ability to grow in skills while working. The ROI program is particularly aligned with the objectives of this grant. While educational partners reach across the state into rural areas, we can help prepare the unemployed and underemployed in rural areas fill some of the workforce needs in the data sciences. We look forward to being part of UDAP by helping to prepare the students in this pathway for remote work opportunities.

The ROI program strongly supports Bridgerland Technical College (BTECH), Mountainland Technical College (MTECH), Utah State University (USU), and Utah Valley University's (UVU) proposal for Strategic Workforce Investment Grant funds to support the formation of a new statewide stackable credential pathway in data analytics.

We are committed to working with all educational institutions involved in the UDAP to align curriculum with workforce needs and help students grow in their desire to compete in the data science field. We are confident that Utah State University and Bridgerland Technical College will work with education and industry partners to leverage Strategic Workforce Investment funds to improve Utah's economy.

Sincerely,

Paul Hill
Extension Associate Professor
Utah State University
Rural Online Initiative

339 S 5500 W
Hurricane, UT 84737

Learn | Connect | Serve
siliconslopes.com

Dear Governor's Office of Economic Development,

Silicon Slopes is the voice, hub, and heart of Utah's startup and tech community. As a 501(c)(3) nonprofit organization, we empower Utah's startup and tech community to learn, connect, and serve in an effort to make entrepreneurship and opportunity in Silicon Slopes open and accessible to all.

Utah, as a whole, has an urgent need in the State of Utah for qualified people with the specific knowledge and skills in data analytics. We are working with several entities to try to resolve the workforce supply issue within our state and are completely supportive of the Utah Data Analytics Pathway (UDAP) strategic workforce initiative grant.

The proposed pathway is a much-needed collaboration between education and industry. We feel that it will simultaneously produce more entry level workers for our IT dependent companies as well as provide those employees with the ability to grow in skills while continuing to work. We look forward to being part of this program by helping to forge additional relationships between

these entities and by helping to let interested employers and employees know about the opportunities it affords.

The Silicon Slopes organization strongly supports Bridgerland Technical College, Utah Valley University (UVU), Utah State University's (USU), and Mountainland Technical College in this proposal for Strategic Workforce Investment Grant funds to support the formation of a new statewide stackable credential pathway in data analytics.

We are committed to working with both institutions to align curriculum with workforce needs and help students grow in their desire to compete in data and IT fields. We are confident that Bridgerland, UVU, USU, and Mountainland will work with industry partners to leverage Strategic Work- force Investment funds to help ensure the continued economic vitality across the entire state of Utah.

Sincerely,

Garrett Clark

Garrett Clark
Director of Operations

STORM PRODUCTS, INC.
THE BOWLER'S COMPANY

December 16, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Dear Selection Committee,

Storm Products in Brigham City, the fourth-largest manufacturer of bowling balls in the world, employs over 150 people. We value our employees, but we need more employees related from a data analytics and management information systems (MIS) background. The amount of data we receive each day is increasing, and we want to take advantage of this data to improve upon our company. These positions are pivotal to our success. Unfortunately, we have suffered from a statewide lack of qualified applicants for such essential positions. Thus, we need to resolve this workforce supply issue.

For this reason, Storm Products is excited for and strongly supports the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant, which will form a new MIS educational pathway. By allowing students to apply technical certification, which they can start earning in high school, toward associate and bachelor's degrees, we feel that this pathway will increase our ability to find and hire qualified entry-level workers as well as increase our current employees' ability to move up in their education and in the business.

Storm Products commits to assist in the development and sustainment of the UDAP stackable credential pathway by: 1) providing student tours, job talks, and guest lectures; 2) participate in annual ongoing advisory meetings; and 3) supply students with externship and job shadowing opportunities.

Storm Products will work with Bridgerland Technical College (BTECH), Mountainland Technical College, Utah State University, and Utah Valley University on their UDAP proposal to align curriculum with workforce needs. We are confident in BTECH's and USU's abilities to work with each other and each partner to leverage Strategic Workforce Investment funds for the economic benefit of our esteemed state.

Sincerely,

Mike Chadwick, CIO
Storm Products, Inc.

January 2, 2020

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: *Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant*

Dear Colleagues,

I am writing to offer our enthusiastic support for the proposed Utah Data Analytics Pathway SWI grant. Utah is failing to satisfy the growing demand for qualified employees to fill in data analytics, information systems, and database administration. The Utah Data Analytics Pathway (UDAP) proposal resolves the workforce supply gap by increasing both entry-level and upper-level workers. This increase will be achieved with a stackable credential pathway in data analytics. Through this pathway, students will a) be encouraged to study data analytics; b) enter universities' MIS associate and bachelor's degrees better prepared; and c) be smoothly guided into advanced positions in data analytics.

Utah State University strongly supports our shared proposal with Bridgerland Technical College (BTECH), Utah Valley University (UVU), and Mountainland Technical College (MTECH) for the Strategic Workforce Investment Grant funds to support the formation of a new MIS and data analytics pathway. The grant funds will allow USU to expand our MIS and data analytics courses across the state by hiring more faculty. As a partner in the UDAP, USU commits to exploring how we can better coordinate our curricula and articulation agreements with tech college certificates. We will also leverage our statewide delivery system to expand opportunities for students to take courses in data analytics and information systems. We will work with project partners to

- implement and monitor the progress on objectives;
- participate in professional development workshops; and
- submit required reports in a timely manner.

USU, along with all other institutions involved, is committed to aligning curriculum with workforce needs, expanding and improving training pathways, and providing MIS and data analytics training development in Utah. We know that USU and BTECH will work with education and industry partners and use Strategic Workforce Investment funds to vitalize Utah's economy.

Sincerely,

Chris Corcoran
David B. Haight Endowed Professor of Analytics
Head, Department of Management Information Systems

UTAH VALLEY UNIVERSITY
COMMUNITY OUTREACH & ECONOMIC DEVELOPMENT

December 18, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: *Utah Data Analytics Pathway (UDAP) - Strategic Workforce Investment Grant*

Although Utah is a hot spot for information systems and data analytics, it currently fails to satisfy the growing demand for qualified employees to fill these positions. This has created a workforce supply gap.

Utah Valley University has recently expanded to a space at Thanksgiving point. While there is new space to expand offerings, the Lehi campus needs technology in order to offer more courses to produce more data scientists as well as additional adjunct instructors to meet growing capacity. Supplementary professional development is also needed in order to keep our faculty and instructors up-to-date on the latest technology needs of industry.

This proposal resolves both sides of the skills gap, increasing both entry-level and upper-level workers, through a stackable credential pathway in Management Information Systems (MIS) and data analytics. With this, students will be encouraged to begin study in the data analytics field and provided with an articulated pathway into advanced IT positions, which will help close this workforce supply gap.

Utah Valley University is committed to partnering with Bridgerland Technical College (BTECH), Utah State University (USU), and Mountainland Technical College's (MTECH) on this shared proposal for the Strategic Workforce Investment Grant as well as the formation of a new MIS and data analytics pathway. Through this career pathway, students will progress upward from secondary schools to technical colleges to universities. Then, they will enter the MIS and data analytics workforce, which is a quickly growing field that the state increasingly needs to fill.

The proposed Utah Data Analytics Pathway (UDAP) program will facilitate additional training and employment opportunities for secondary and postsecondary students by promoting and developing seamless pathways to the new Management Information Systems (MIS) B.S. at UVU, USU, and other higher-learning institutions. We are confident that allowing students to readily climb up the stackable credential pathway

800 WEST UNIVERSITY PARKWAY · OREM, UTAH 84058-6703 · MS 303 *phn* 801 863 7570 *fax* 801 863 6171

will encourage students to pursue a degree in MIS and data analytics, and, in turn, enter the MIS and data analytics workforce.

As a partner in the UDAP, UVU commits to:

- work with BTECH,USU, MTECH, and other academic partners to coordinate the horizontal and vertical articulation of curriculum to grant partners
- Aid in the expansion of the pipeline by hiring more faculty and expanding our curriculum to our mobile section at Thanksgiving Point
- work with project partners to implement and monitor the project
- monitor project budgets and spending
- participate in professional development workshops
- implement curriculum in accordance with the state of Utah's education standards
- collect data about progress toward proposed goals
- submit required reports in a timely manner

UVU is excited to help align curriculum with workforce needs, expand and improve training pathways, and provide MIS and data analytics training development throughout Utah. We have confidence that all partners involved will use Strategic Workforce Investment funds to close the workforce supply gap and ignite economic success in Utah.

Sincerely,

C. Paul Morrey 12/18/2019

C. Paul Morrey, Ph.D.
Department Chair
Associate Professor
Information Systems and Technology Department
Utah Valley University

Jessica Gilmore 12/18/2019

Jessica Gilmore, Ed.D.
Associate Provost
Community Outreach & Economic Development
Utah Valley University

Xactware

December 18, 2019

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

To Whom It May Concern:

Xactware Solutions, a Verisk company, was established in Utah and has contributed to Utah's reputation as a center for technology development. We provide computer software and data system solutions for professionals involved in estimating all phases of construction, repair, and property claims resolution. Xactware, with its sister companies co-located in Lehi, Utah, and elsewhere, is a leading source of information about property/casualty insurance risk.

To execute our mission and address customer needs, we have development teams spanning a variety of technologies. We have need of database engineers, database administrators, data analysts, and other data-focused jobs. Our success depends upon the quality of the people we can bring into these positions. They must have the knowledge, abilities, and skills required for software development and data. Too often, it is difficult to find people with the requisite skills and ability to learn and grow with advancing technologies.

Xactware has been pleased with the number of qualified personnel we've been able to draw from Mountainland Technical College (MTECH), Utah Valley University (UVU), and Utah State University (USU) over the years and believe that more can be done to enable our technical schools statewide to address what often appears to be a deficit of qualified personnel available in the workforce. We have enjoyed fruitful relationships with MTECH and UVU locally, and we strongly support efforts to enable our state's education system to become more agile in enhancing the state's workforce with in-demand knowledge, abilities, and skills.

Therefore, Xactware is pleased to support the pursuit of the Utah Data Analytics Pathway (UDAP) Strategic Workforce Investment Grant. We believe the grant will fund programs to produce better qualified entry-level personnel and prepare them with a greater capacity to stay abreast of data technology development over time. Additionally, we see opportunities to upskill current employees in preparation for new development challenges as they arise.

Specifically, Xactware strongly supports Bridgerland, MTECH, and UVU's proposal for Strategic Workforce Investment Grant funds to support the formation of a new statewide stackable credential pathway in data analytics. By promoting and developing seamless pathways from K-12 to Technical Colleges and then to associate and bachelor's degrees, the UDAP proposal will facilitate additional training and employment opportunities for our current and future employees.

As a partner in the UDAP statewide stackable credential pathway, Xactware commits to:

- Collaborate to develop program-specific analytics curriculum (web analytics - added to Web Development, etc.).
- Participate in annual ongoing advisory meetings
- Review and advise on curriculum
- Contribute to instruction (e.g., guest lectures, classroom teaching, conduct site tours, serve as panelists or judges)
- Provide work-based learning (e.g., externships, mentoring, job shadowing, demonstrations)

Based on past success with Bridgerland, MTECH, USU, and UVU, we are confident in their ability to leverage Strategic Workforce Investment Grant funds effectively. We are committed to working with all these institutions to develop a curriculum that aligns with business needs, expands and improves training pathways, and supports the development of the state's workforce. We believe that partnerships like this, between business and education, to effectively leverage public sector resources are critical to improving sustainable economic vitality throughout Utah.

Sincerely,

Kevin Crandall
VP, Employee Development

Applicant Name:	Davis Technical College
Project Title:	Composite Materials Technology Pathways Expansion
Primary Contact Person:	Marcie Valdez, marcie.valdez@davistech.edu 801-593-2374
Project Partners:	Davis Technical College Davis School District Morgan School District
Funding Level Requested:	$250,000 One-time funds $125,000 On-going funds
Strategic Industry Cluster:	Aerospace and Defense

Summary of First Proposal

During the 2017 Legislative session, Davis Tech in partnership with Davis School District was awarded a Strategic Workforce Initiative grant to create a stackable credential pathway in Composite Materials Technology. In coordination with Davis School District, Davis Tech developed curriculum for a yearlong course that combines basic composites training with the Manufacturing Principles I course, which is a required course for participation in the Utah Aerospace Pathways Program (UAP). The stackable credential pathway is currently being offered in three Davis County High Schools. This pathway provides students in Davis School District with the opportunity to explore options and career pathways that support the growing demand for skilled workers in aerospace and other composite materials industries.

Funding from the grant over the past three years has supported the renovation of labs and the purchase of equipment at Woods Cross and Syracuse High Schools. Ongoing funding supports the salary of three faculty. As the consumable training materials are very expensive for this program, funding supplements in-kind materials and supplies that Davis Tech receives from industry partners.

Building renovations were completed and equipment purchased in summer of 2017, with classes beginning at Woods Cross and Syracuse High Schools in the 2017/18 school year. The program was expanded to Farmington High School when it opened for the 2018/19 school year. We are now in our third year of offering the program, and student interest and enrollment continues to grow.

2017 SWI Composite Materials Technology Current Funding & Budget

	One-time Funds	Ongoing Funds	Total Investment FY 2018 – FY 2020
Faculty	$80,000	$170,000	
Building Renovations & Equipment	$247,000		
Supplies	$93,000	$10,000	
Total	**$420,000**	**$180,000**	**$780,000**

Goals and Successes

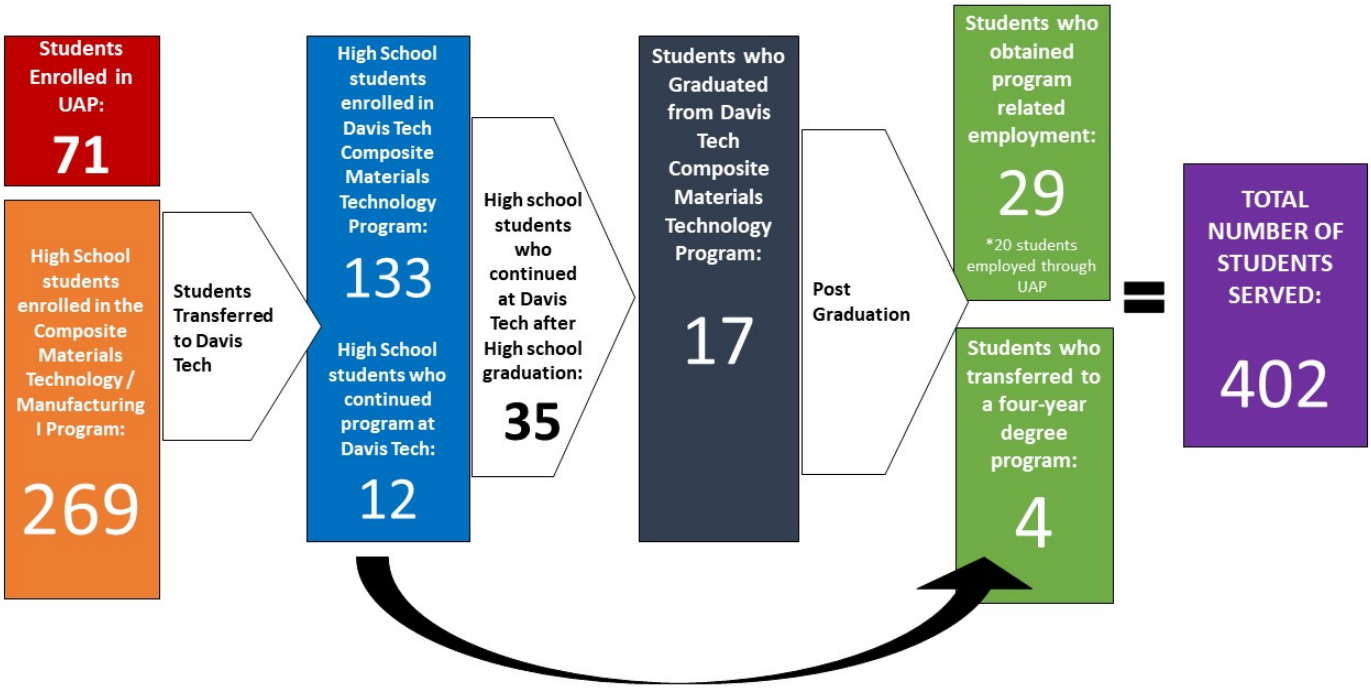
The pathway program has far exceeded initial goals with enrollment. Over the past three school years, 269 students enrolled in the high school course, and 133 high school students have enrolled in the full program at Davis Technical College. One of the goals of the program was to increase participation in the Utah Aerospace Pathways Program. Davis School District has the highest rate of participation in the State. This is due in large part to the way the course was designed and the collaboration with CTE Directors and Counselors.

In the original SWI application, we projected 75% of the students enrolled in the high school course would transfer into the full program at Davis Tech. To date, the percentage of overall students who transfer to the full Davis Tech program is lower than initially projected. We believe there are many reasons for this, including:

1.) Many students are still in high school, or may have opted for a religious mission directly following high school graduation.
2.) There is strong interest and enrollment from students who are exploring career options and taking the course as a CTE elective.
3.) A large number of students take the course as a requirement for UAP. Many of the UAP participants are working towards an engineering degree rather than a technical certificate and may not realize the articulation benefits.
4.) Transportation and competition for time continue to be a barrier for students to attend programs at the Davis Tech Campus.

As more of the first, second and third year students graduate high school, we expect to continue to see increases in the number of students completing certification and job placements. Working with the district CTE coordinators and instructors at each high school, Davis Tech will increase recruitment efforts with students. This will include the implementation of an entry and exit survey that will help develop individualized recruitment plans based on student interest and long-term college and career goals.

Graphic: Composite Materials Technology Pathways Student Outcome Data
School Years 2017/18 -2019/20

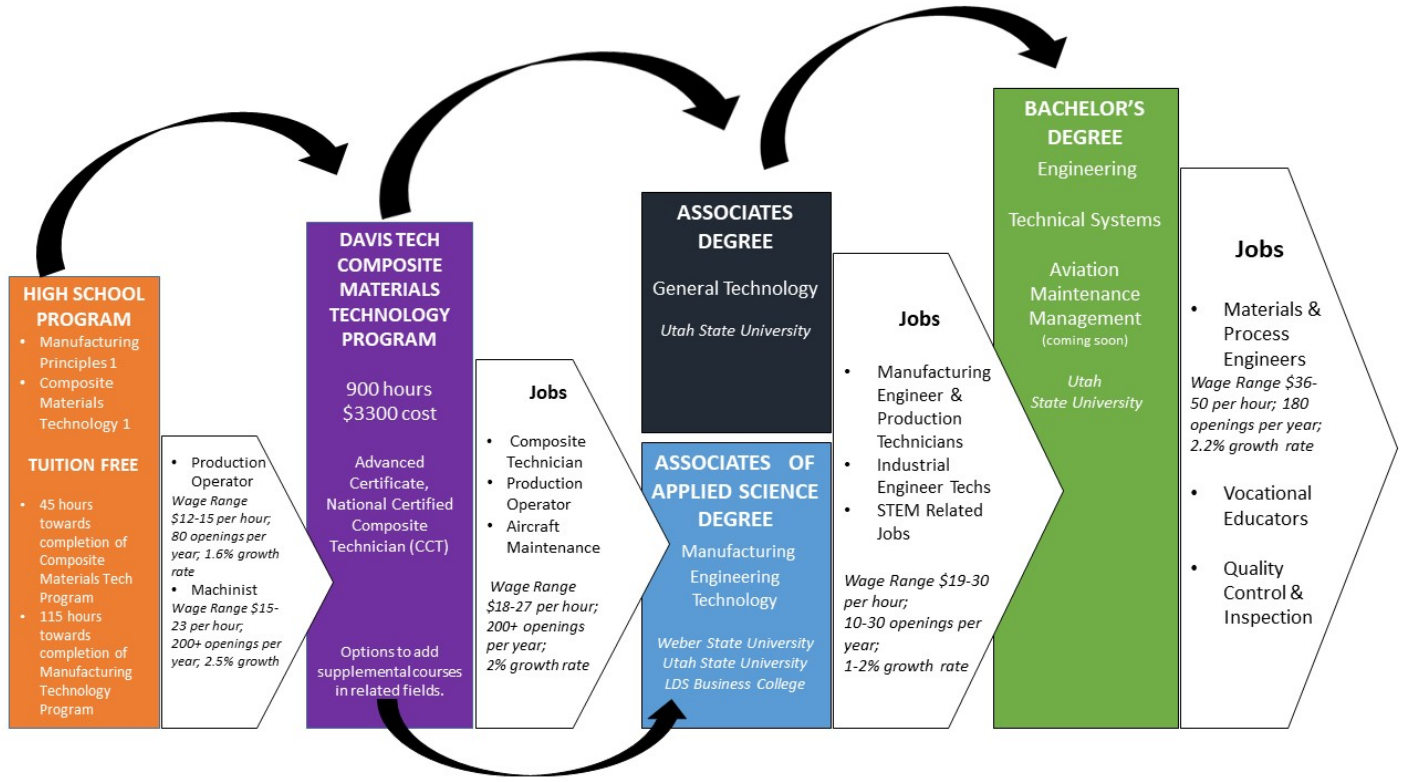


*Actual employment and USHE transfer numbers are higher than indicated above. Data collection methods between UAP, DSD and Davis Tech are being coordinated and improved for future reports.

Stackable Credentials

Students who take the Composite Materials Technology and Manufacturing Principles course at the high school can transfer 45 hours towards the Davis Tech Composite Materials Technology Certification. High school students can transfer into the full program tuition free their Junior and Senior year. Davis Tech currently offers free tuition for high school graduates for up to one-year following graduation. Students who complete their 900-hour certification can articulate 30 credit hours towards an A.A.S Degree at WSU, USU, and LDS Business College. USU offers students the opportunity to articulate 30 credit hours towards an A.S. Degree in General Technology, which can then be transferred towards a Bachelor's Degree in Technical Systems and coming soon, USU will offer a B.S. Degree in Aviation Maintenance Management.

Graphic: Stackable Credentials Pathway



Budget Request

Program Expenses	Year One & One-time Funding	On-going funding
Morgan High Lab Equipment	$40,000	
Clearfield High Lab Equipment	$45,500	
Northridge High Lab Equipment	$48,500	
Pathway Promotional Materials	$8,000	$5,000
Faculty	$108,000	$108,000
Supplies		$12,000
Total Budget Request	**$250,000**	**$125,000**

Funding Request and Justification

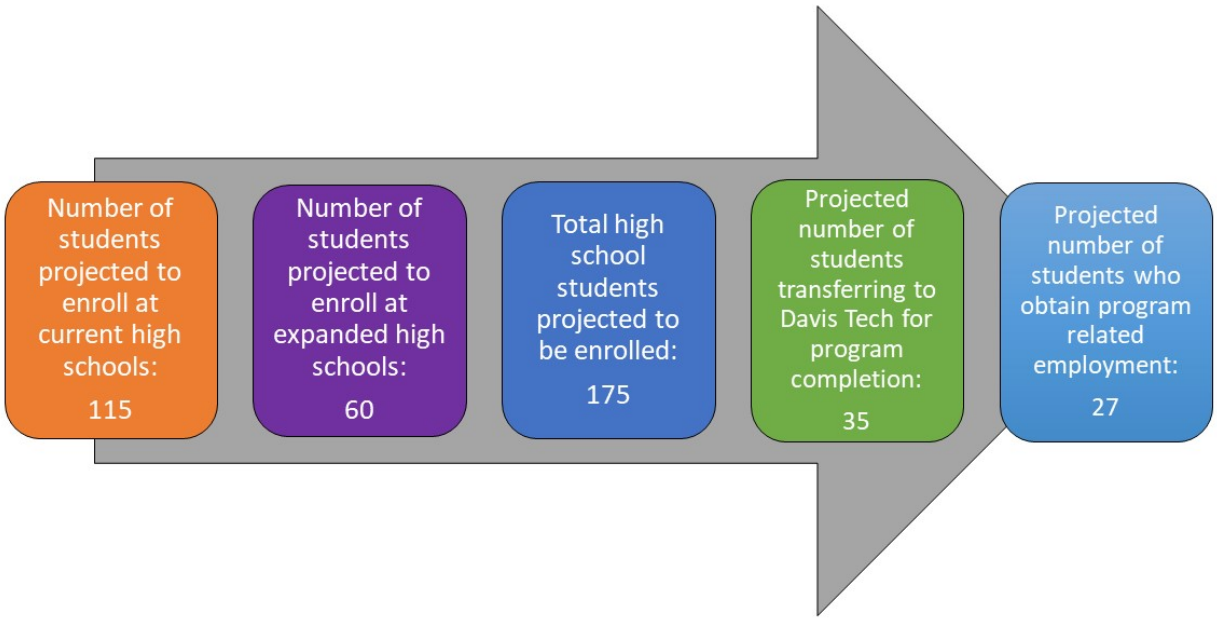
The Composite Materials Technology Pathway program with Davis School District has proven to be very successful. Davis Tech is requesting additional funding from the Strategic Workforce Initiative grant to expand this program to an additional three high schools. We are requesting one-time funding to purchase equipment for Clearfield, Northridge and Morgan High Schools. We are requesting ongoing funding to support one additional full-time instructor who will teach at the high schools, and assist with coordinating curriculum and outcomes at the six schools. On-going funds will support supplies and materials for the additional students, and some limited promotional materials.

Timeline and Projected Outcomes

Davis and Morgan School Districts will begin offering Composite Materials Technology and Manufacturing Principles I at the three new high school locations for the 2020/21 school year. Below is a chart that shows projected enrollment for the 2020/21 school year at the three current schools, and the projected increase with the additional schools.

Based on past performance, our projected outcomes represent increased enrollment goals, a 20% pathway continuation goal, and a goal that 76% of students who complete will find related employment. These new goals reflect our success with increased enrollment, while still showing a significant number of students who will complete the full certification and become employed in the composite materials industry.

Graphic: Current and Projected Annual Enrollment Numbers



In addition to expanding the Composites Materials Technology and Manufacturing Principles I course to three new schools, Davis Tech will pilot an advanced course at Syracuse High School. The advanced course will provide students with the opportunity to complete the Davis Tech certification at the high school, eliminating barriers students have with transportation and time. If the pilot course is successful, Davis Tech will work with DSD and MSD to offer the advanced training at additional schools.

Collaboration and Partnership

Davis Tech has been successfully collaborating with the Davis School District, major aerospace and defense companies, and post-secondary institutions to establish and grow the Composite Materials Technology program in the high schools. We are eager to add Morgan School District to this dynamic consortium. While students from Morgan High School have high interest in participating in Davis Tech programs, the distance from the school to Davis Tech and the lack of public transportation has been a barrier to access. Morgan High School recently finished an addition to the high school to meet the increase in student population. In addition, they received a Talent Ready Utah Grant in 2019 in order to renovate and purchase new equipment for their CTE labs. They currently teach a basic composites class, this funding would allow them to transition this course to the Davis Tech Composite Materials Technology and Manufacturing Principles I course, which will allow students to participate in UAP.

Davis School District has seen continued growth in the participation of their high school students in several of our programs. They see the value in being able to offer the Composite Materials Technology program in additional schools moving forward. Being able to offer this program to students at Northridge and Clearfield High Schools would reach a demographic that is geographically aligned with many of our industry partners, as well as Hill Air Force Base.

Our industry partners play a vital role in the continued growth of the Composite Materials Technology program. They see the need for training programs that provide students with the necessary skills to compete in a strong and competitive workforce. They provide continued support in defining performance standards with underlying skills to support curriculum development, along with the development of performance proficiencies that can be used as end-of-course assessments. They provide ongoing feedback to refine the training program curriculum, and make generous donations of consumable materials. These companies also provide work-based learning opportunities for students in multiple ways including locations tours, job shadowing and Utah Aerospace Pathway Internships.

Key Partners

Partner	Partner Support For Program
Boeing	Davis Tech Occupational Advisory Committee Member UAP Internships Curriculum Development Student Speaking Engagements and Tours
Northrup Grumman	Davis Tech Occupational Advisory Committee Member Talent Ready Utah, Utah Works Grant Partner In-kind Training Consumable Donations Curriculum Development Student Speaking Engagements and Tours UAP Internships
Janicki Industries	Davis Tech Occupational Advisory Committee Member UAP Internships Curriculum Development
KIHOMAC	Davis Tech Occupational Advisory Committee Member Curriculum Development In-kind Training Consumable Donations
Composites One	Davis Tech Occupational Advisory Committee Member In-kind Training Consumable Donations Curriculum Development DOD, Manufacturing Education Extension Program Grant Partner
Albany	Davis Tech Occupational Advisory Committee Member UAP Internships Curriculum Development In-kind Training Consumable Donations Student Speaking Engagements and Tours
Hill Air Force Base	Davis Tech Occupational Advisory Committee Member Curriculum Development
General Atomics	Davis Tech Occupational Advisory Committee Member Student Speaking Engagements and Tours

Industry Demand

Utah has one of the highest concentrations of advanced composite companies in the world and it is continuing to grow at a rapid pace. At present, well over 100 Utah companies are active in the industry accounting for nearly 12,000 jobs. One of the major concerns facing this industry in Utah and elsewhere is the shortage of talented technicians necessary to supply the demand. Large Aerospace and Defense companies in Northern Utah are collaborating with Davis Tech to get more of these skilled workers in the pipeline to work at their Davis and Weber County locations. Northrup Grumman Innovation Systems is just one of our industry partners. They currently employ 1800 people, including approximately 700 Composites Production Operators. Because they expect to grow by $50 million in the next 12-24 months, an additional 150 Composites

Production Operators will be needed. Additionally, Janicki Industries needs ten new composites technicians in the next 12 months, and another 150 over the next five years. Similarly, KIHOMAC predicts it will require 50 new composites technicians in the next 12 months, with another 100-150 needed in the next five years. This represents a total, across just these three companies, of approximately 210 new composites technicians in the next 12-24 months, and hundreds more over the course of the next five years.

In addition to this private industry growth, a large number of job openings can be attributed to the expansion of two missions at Hill Air Force Base – the Ground Based Strategic Deterrent program and the aircraft maintenance depot. According to The Standard Examiner, these two programs, along with others, are poised to ramp up in the future. In the coming years, Hill is looking to hire as many as 5,000 new employees – a 20% increase from the base's current personnel total. These new workers will "include high-paying, skilled positions that draw largely from higher education and technical institutions in Northern Utah."

(Sen. Romney and Rep. Bishop Say Hill Air Force Base Is Poised For Major Workforce Increase Nearing 20 Percent Standard-Examiner MITCH SHAW - https://www.standard.net/news/military/sen-romney-and-rep-bishop-say-hill-air-force-base/article_92f1c66e-b4b3-5566-a4f8-9da799e581ec.html)

The Governor's Office of Economic Development 2019 annual report shows the Aerospace and Defense cluster continued to grow through 2018. Advanced manufacturing is a key industry driver for aerospace and defense and all strategic clusters. The economic impact of the composite material industry is significant to Utah's overall production. On average, these skilled workers have salaries that are 10-15% above the average Utah wage and contribute over $650 million to the state's economy.

Industries requiring employees skilled in Composite Materials Technology are not just limited to the Aerospace and Defense industries. Skilled composite workers can also find jobs in automotive, prosthetics, bridge building, marine products, sporting goods and parts assembly.

Student Success Story

Michael Clark

Senior – Syracuse High School

Michael first heard about the composites program when he participated in the "Fly Away with Composites" event last year. He saw the demonstrations of all the different products and processes and thought it looked interesting. He had heard about both the Davis Tech welding and composites classes offered at Syracuse High School and decided to get signed up for composites. He started in the program as a junior, finishing the class at Syracuse in the spring and immediately started taking classes at Davis Tech this summer. He is participating in the UAP and is on track to have his certificate by spring 2020. He will also have his Composite Certificate from Davis Tech completed by this spring, all before he graduates from high school.

Since he is participating in the UAP, he hopes to do an externship with Northrup Grumman once he has his certifications completed. His goal is to be able to get a job there and work for a year before he leaves on a religious mission. He would like to continue working in composites when he returns. His long-term goal is to get a degree in Materials Engineering at either Weber State University or Utah State University.

He loves the composites program at Davis Tech. He likes being able to make his own projects and continually figure out new things to create with all the different processes. He likes that there are so many different industries that use composites, giving him lots of job options when he is finished with his degree. He said everyone in the program has been incredibly helpful to him. The instructors have gone above and beyond to make sure the students are prepared for the workforce once they complete the program. They have made sure he has the right job skills and have even helped him work on his resume. He loves the fact that he was able to start this program at his high school, transfer to Davis Tech to finish, and do it all for free.

Strategic Work Force Initiative Proposal 2020

Application Partners Signature Sheet

Name of Institutions: Davis Technical College, Davis School District, Morgan School District,

By signing below, the following individuals attest that they have reviewed and approve the attached proposal for SWI funding:

Davis School District Superintendent	Reid Newey	12-18-19 Date
Morgan School District Superintendent	Dr. Douglas Jacobs	12/27/19 Date
Davis Tech President	Darin Brush	19DEC2019 Date
Davis Tech Grant Administrator	Marcie Valdez	12/19/19 Date

Davis School District
LEARNING FIRST

January 2, 2019

To Whom It May Concern,

I am writing this letter of support on behalf of the Davis School District. I currently serve as the Director of Career and Technical Education in the district. Our district is the second largest in Utah, with a student enrollment of 72,897. Approximately 34,000 of those students are in grades seven through twelve. Our district has 17 junior high schools and 10 high schools, which includes our alternative high school, Mountain High. All high schools are comprehensive schools offering college preparatory programs.

Davis School District offers a full program of Career and Technical Education (CTE) courses and Career and Technical Student Organizations (CTSO). Through our partnership with Davis Technical College, we have been able to expand our programs to include Composites 1, Welding, and AM STEM at several of our district high schools. Through the current Strategic Workforce Initiative (SWI) grant, Davis Tech has been able to provide an instructor, equipment and materials to teach these courses at Davis District schools.

As Davis Tech looks to partner with Davis School District to expand these programs to additional schools in the Davis District, additional funding will be required. For this reason, the Davis School District supports Davis Tech in their submission of the application for the SWI Composites Grant. As a district, we value our partnership with Davis Tech and are committed to assisting them in making these programs a reality for our students in as many schools as possible.

Should you require additional information from me, my contact information is listed below.

Sincerely,

Jay Welk
Director
Career and Technical Education
Davis School District
jwelk@dsdmail.net
(801) 402-5113

PO Box 588 | 45 East State Street, Farmington UT 84025 | 801-402-5261 | davis.k12.ut.us

BOARD OF EDUCATION
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MORGAN COUNTY
SCHOOL DISTRICT
United For Excellence

This letter is written in partnership and commitment to Davis Technical College's proposal for additional Strategic Workforce Funding to expand the Composite Materials Technology program at Morgan High School from introductory to an Advanced Composites program. We are grateful for the opportunity to partner with Davis Technical College to create strong career pathways that support the growing Aerospace and Manufacturing Industries in Utah.

Morgan High School is invested in providing CTE and CE opportunities for students in Morgan County. As a rural community, it has been difficult to build the infrastructure needed to facilitate growth in this area. By collaborating with Davis Technical College in this initiative, we will be bringing a much-needed program directly to our students at Morgan High School. Having the Advanced Composites program onsite will allow far more students to participate, especially those who would otherwise be unable to make the drive to the Davis Technical College campus. This grant will also provide us with the opportunity to be fully engaged in designing, supporting and providing educational programs that support pathway programs at Davis Technical College, Weber State University, and Utah State University.

We believe this partnership will strengthen and diversify the workforce, enhance critical job skills, and promote the development of Aerospace and Manufacturing occupations in northern Utah.

Robert Kilmer

Career and Technology Education Director

Morgan School District

240 East Young Street ◆ P.O. Box 530 ◆ Morgan, Utah 84050
Office : (801) 829-3411 ◆ Fax: (801) 829-3531 ◆ www.morgan.k12.ut.us

Date: 1/2/2020

To Whom It May Concern:

Northrop Grumman, is pleased to support Davis Technical College's proposal for Strategic Workforce Initiative funding. This funding will further develop and expand the Composite Materials Technology career pathway and stackable credentialing program in partnership with the Davis and Morgan School Districts.

As an Aerospace Industry partner, we clearly see the need for training programs that provide students with the necessary skills to compete in a strong workforce. By supporting the growing interest at the high school level, this program will continue to be vital to the rapidly developing Aerospace Industry in Utah. We feel this program complements other state initiatives that we already take part in, including the Utah Works Program and the Utah Aerospace Pathway. These partnerships are critical for Northrop based on the following factors:

1. Providing opportunities for our high school students to have career options
2. Providing exposure to students to the businesses within their communities
3. A lot of students have parents/relatives already working at Northrop, by having an active working relationship with the schools we can extend opportunities to the students

Representatives from Northrop are committed to continuing this work supporting the proposal in the following ways:

- Continued support in defining performance standards with underlying skills to support curriculum development.
- Development of performance proficiencies that can be used as end-of-course assessments.
- Ongoing communication to refine training programs developed for secondary and postsecondary partners.
- Ongoing participation in outreach efforts with a focus on changing community perception of the manufacturing industry and to support recruitment efforts at both the secondary and postsecondary level.
- Ongoing support for work-based learning opportunities for students including UAP internships, job shadowing,

Northrop is excited to continue to support this workforce development effort. It is believed that Northrop will benefit from this initiative and we are pleased to make a commitment to the Davis Technical College, Morgan School District, and Davis School District Composite Materials Technology Pathway program.

Sincerely,

Scott Harper/Principal Training Representative

Northrop Grumman

KIHOMAC

ISO 9001:2015 · AS9100D Certified · CMMI Level 2 Appraised · OSHA SHARP Awarded

31 May 2019

FROM: KIHOMAC Inc

SUBJECT: Support for Davis Technical College Composite Program

To whom it may concern,

KIHOMAC Inc, is proud to submit this letter of support for the Davis Technical College (DTC) composite program.

Over the past 10 years, KIHOMAC Inc has heavily recruited and hired graduates of the Davis Technical College composite program due to the quality of their training and their expertise. This active partnership has evolved into a mutually beneficial relationship. KIHOMAC Inc routinely provides excess material to enhance hands-on experience at DTC. The ability to manipulate these materials and structures further develops the specific job skills required for advanced aerospace manufacturing.

KIHOMAC Inc provides full spectrum aviation support services to a variety of Department of Defense aircraft, employing more than 40 technicians to manufacture various structural components of combat aircraft. The challenges of this work require a highly technical work force which is able to meet the evolving demands of new and aging aircraft. DTC has proven exceptionally capable at training a cadre of graduates with the technical ability and work ethic to excel in the aerospace manufacturing market.

KIHOMAC Inc enthusiastically supports Davis Technical College's composite program. We anticipate hiring 20 – 40 more composite technicians over the next 3 years.

Christopher Gough

Christopher S. Gough
Vice President, Aerospace Engineering Group
KIHOMAC Inc

Reston, VA • Layton, UT • Warner Robins, GA • Lexington Park, MD • Midwest City, OK • Dallas, TX • Fairborn, OH • Melbourne, FL
(866)-544-6392 • www.kihomac.com

Automatic Manufacturing Strategic Workforce Initiative Proposal

Partnership

Mountainland Technical College, in association with Utah Valley University and the Utah Department of Workforce Services, is applying for Strategic Workforce Initiative support of $236,000 in one-time funding and $175,000 in ongoing funding (see Fig. 4.1) for a new cooperative project in meeting the needs of the automated manufacturing industry. The consortium is led by the following partners:

- Mountainland Technical College (MTECH) - Clay Christensen, President
- Utah Valley University - Jessica Gillmore, Associate Provost
- Department of Workforce Services - John Talcott, Mountainland Area Director

Overview of Need

Over the next 10 years, Utah County will see exponential growth across all industry sectors, including manufacturing and information technology. According to statistics from JobsEQ (*www.chmuraecon.com/jobseq/*), Utah County will see a 12.24% increase in workforce demand for manufacturing within the decade.

One of those companies, Micron/IM Flash, is in need of Equipment Technicians and has never been fully staffed in this position. They hire approximately 60 to 80 Equipment Technicians per year and almost 50% of these hires have come from out of state due to a lack of local talent. The new training will provide a strong basis of electronics and automated manufacturing skills that form the foundation for equipment technicians with Micron/IM Flash and many other positions within the industry.

To help support this workforce need, the Mountainland Consortium is proposing a partnership to accelerate hiring and technical skills training that will lead to economic growth. The proposed request of the consortium which will result in an increased throughput of sixty (60) skilled workers for the industry including Micron/IM Flash, and a $21 million economic impact on an annual basis.

Stackable Sequence of Credentials

The proposed program begins when a student/trainee (recruited by the Consortium) enters the MTECH Automated Manufacturing Program. Upon completion of the certificate program (approximately one year), the student/trainee will be qualified to enter the workforce as an entry level technician. The student/trainee will then have the opportunity to continue their education/training through an Associate of Applied Science program at UVU. UVU will be offering two program options in either their Electrical Automation and Robotics Technology (EART) AAS program, or their Technology Management AAS program. Once awarded their Associate's degree from UVU, the student would qualify for additional positions within the workforce.(Figure 1.1)

For example, once an MTECH student completes their Automated Manufacturing certificate, they would then qualify for certificate level employment (Figure 1.2). While working in a certificate job they could then attend UVU, applying the credits received from their MTECH certificate, towards completing their Associate's degree. This would qualify them for degree level employment (Figure 1.3).

Fig 1.1 - Stackable Credential Path

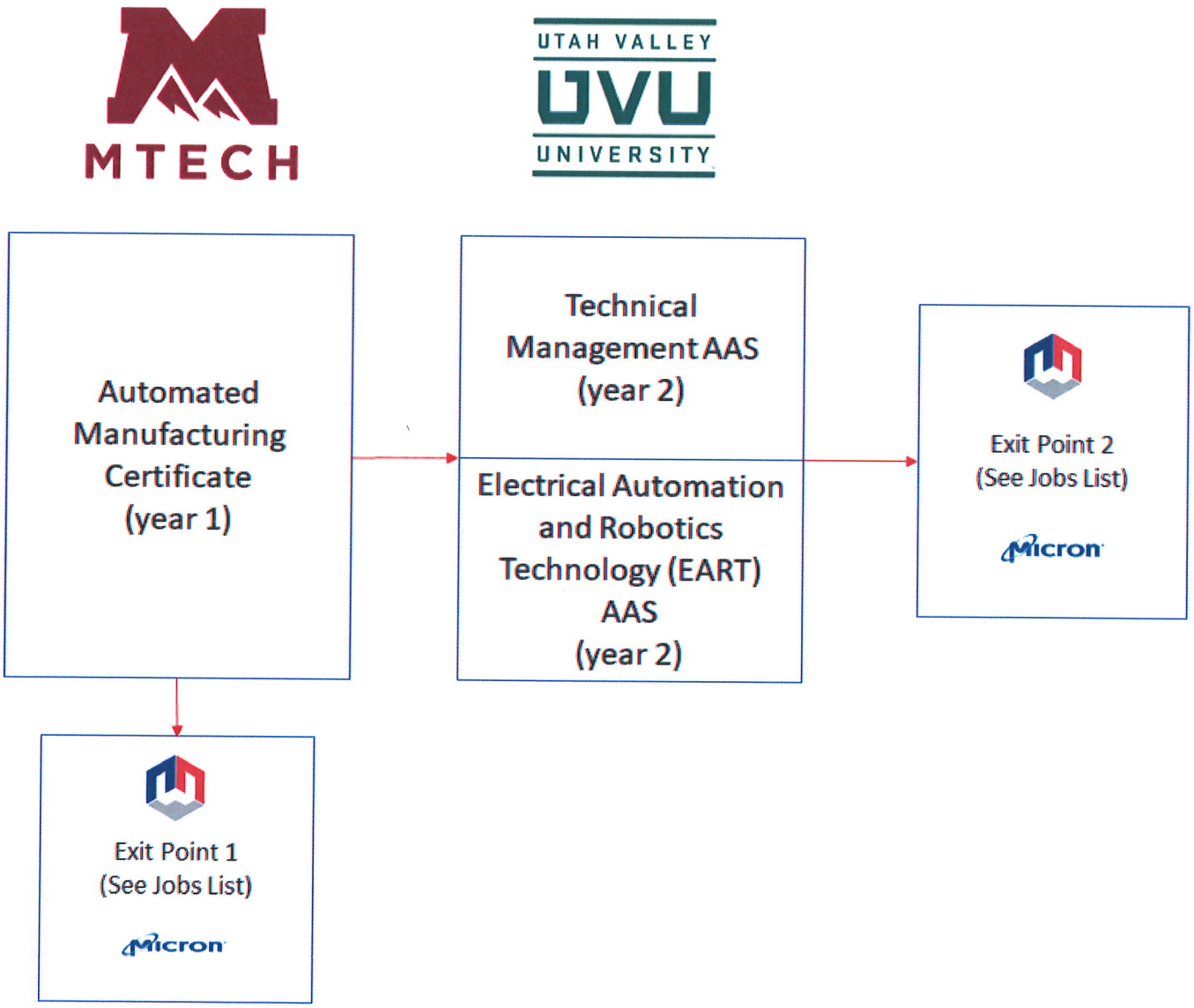


Fig 1.2 - Certificate Level Exit Point (Statewide DWS data for typical positions)

SOC Code	SOC Title	Rating	2016 Employment	2026 Employment	Annual Growth	Annual Openings	2017 Inexperienced Wage	2017 Median Wage
49-9071	Maintenance and Repair Workers, General	3	12,180	15,550	2.80%	1,670	$24,180	$37,290
49-9099	Installation, Maintenance, and Repair Workers		1,380	1,820	3.30%	190	$22,070	$36,380
51-1011	First-Line Supervisors of Production and Operating	5	6,050	7,570	2.50%	810	$36,210	$56,090
49-9041	Industrial Machinery Mechanics	5	3,370	4,180	2.40%	400	$39,190	$55,860
49-9043	Maintenance Workers, Machinery	4	1,020	1,320	2.90%	150	$34,360	$49,870

Fig 1.3 - Degree Level Exit Point (Statewide DWS data for typical positions)

SOC Code	SOC Title	Rating	2016 Employment	2026 Employment	Annual Growth	Annual Openings	2017 Inexperienced Wage	2017 Median Wage
17-3023	Electrical and Electronics Engineering Technicians	4	250	340	3.60%	40	$41,430	$52,120
17-3024	Electro-Mechanical Technicians	2	130	160	2.40%	10	$43,600	$57,930
17-3026	Industrial Engineering Technicians	4	660	880	3.30%	90	$37,040	$59,660
17-3027	Mechanical Engineering Technicians	4	440	610	3.90%	60	$40,160	$53,430
17-3029	Engineering Technicians, Except Drafters, All Other		770	990	2.90%	100	$31,690	$54,590
41-4011	Sales Reps, Manufacturing, Technical and Scientific Products	5	4,110	5,550	3.50%	630	$38,150	$78,740

Implementation Timeline

With funding, the expansion and curriculum update of the MTECH program for automated manufacturing is scheduled to begin immediately with the first expanded cohort expected to begin in August of 2020 (Fig 2.1). MTECH is targeting August of 2021 to achieve full capacity of the program. It is projected that 83.5% of enrolled students will complete the program with a job placement rate of 94% (Fig 2.2)

Fig 2.1 - Program Implementation Timeline

DATES	ACTIVITY
February 2020	· Hire Program Coordinator
	· Determine skill gaps between MTECH Automated Manufacturing Program and Technician skills needed
	· Begin writing course standards and objectives
	· Determine which high schools will be offering Pre-requisite courses
	· Determine which high schools will be offering UVU concurrent enrollment for General Education requirements
	· UVU begins development/implementation of AAS
March 15, 2020	· Course standards and objectives complete
	· Equipment list finalized for lab. Equipment ordered.
March 31, 2020	· Curriculum developed for gap areas.
	· All hybrid curriculum complete and tested.
	· Marketing campaign kicks off for program
April 21, 2020	· Enroll students for initial start date on August 18th
May 31, 2020	· Faculty hired and trained for August start date.
August 18, 2020	· First cohort begins class at MTECH
	· First MTECH students complete program certificate
August 2021	· MTECH certificate completers enter AAS program at UVU
May 2022	· First AAS graduates at UVU

Fig 2.1 - Target Enrollment, Completion, and Job Placement

Current

	Students	Completion	Job Placement	Output
Aug 2018 Start - Initial Cohort	4	75%	100%	3
Aug 2019 Cohort - Projected	19	83.50%	94%	14.91

Targets

	Students	Completion	Job Placement	Output
Aug 2020 Cohort (1st) - Projected	50	83.50%	94%	39.25
Aug 2021 Cohort - Projected	90	83.50%	94%	70.64
Aug 2022 Cohort Projected	90	83.50%	94%	70.64

Economic and Industry Impact

The automated manufacturing industry and the companies that employ these positions play a significant role in the economy of the Mountainland Region. An increase of 60 direct employees in this industry would constitute a $21,000,000 annual impact to the region's economy (Fig 3.1). Over the next 10 year this industry is expected to have a growth demand of 2,490 new employees, which reflects more than 12% growth over that time span (Fig 3.2). This proposed program would significantly aid in meeting this need.

Fig 3.1 - Mountainland Region Annual Impact of Manufacturing

Mountainland Region, Utah Annual Impact of Manufacturing (Event Size = 60)

	Direct	Indirect	Induced	Total
Employment	60	16	20	96
Sales/Output	$15,512,429	$2,646,559	$2,933,782	$21,092,770
Compensation	$3,427,405	$805,167	$930,889	$5,163,461

Source: JobsEQ®
Data as of 2019Q2
Note: Figures may not sum due to rounding.

Fig 3.2 - Mountainland Region 10 Year Forecast of Manufacturing

Industry Data Utah County, Utah Manufacturing 31-33 Latest Available Data

Rows	Empl	10 Year Change in Empl	10 Year Forecast Growth Demand
	20,334	2,640	2,490

Source: JobsEQ®
Note: Figures may not sum due to rounding. Growth demand is based on 4-qtr moving avg employment from the latest available date.
Data as of 2019Q1

Funding Request

MTECH is requesting the following funding through the Strategic Workforce Initiative in order to implement the proposed program. (Fig 4.1)

Fig 4.1 - Budgeted Funding Request and Coalition Funding

		SWI Funded		Coalition Funded	
One Time	**Cost**	**Quantity**	**Total**	**Quantity**	**Total**
AC/DC Trainers	11,000	2	22,000	2	22,000
Relay Station Trainers	10,000	2	20,000	2	20,000
Motor Controls Trainers	18,000	2	36,000	2	36,000
Rotating Motor Trainers	15,000	2	30,000	0	0
Pneumatic Trainers	20,000	2	40,000	0	0
Hydraulic Trainers	23,000	2	46,000	0	0
PLC Trainers	21,000	2	42,000	2	42,000
Computer Workstations	1,000	0	0	35	35,000
		SWI One-Time	**236,000**	**Coalition One-Time**	**155,000**
Ongoing	**Cost**	**Quantity**	**Total**	**Quantity**	**Total**
Faculty	100,000	1.5	150,000	1.5	150,000
Equipment Maintenance	25,000	1	25,000	0	0
Marketing & Outreach	50,000	0	0	1	50,000
		SWI Ongoing	**175,000**	**Coalition Ongoing**	**200,000**

SWI OneTime Funding	**236,000**
SWI Ongoing Funding	**175,000**

Total One-Time Funding	**391,000**
Total Ongoing Funding	**375,000**

Board of Regents Support

The Board of Regents supports this proposal, as shown in a separate message of support.

System of Technical Colleges Support

The UTECH Trustees support this proposal, as shown in a separate message of support.

Evidence of Support from Industry

Please see the attached letter of support from Micron, an important Industry partner within the Mountainland region.

Micron's Lehi facility has a need to hire approximately 70 high-paid manufacturing technicians every year. Although they would very much prefer to hire Utahns, they have been forced to travel nationwide to actively recruit the technical talent they need to fill these positions. These are well-paid, full-time positions with benefits and paid vacation--paying at or higher than the top ranges of the above statewide DWS pay charts.

As this letter demonstrates, Micron is prepared to hire graduates both with an MTECH certificate, as well as Associate's and Bachelor's graduates who have completed the proposed automated manufacturing program. They currently serve on advisory councils and are willing to help in a variety of ways.

In addition, see the attached letter from US Synthetic. US Synthetic is a prominent manufacturer of synthetic diamonds that produces a large portion of the diamonds for the global oil and gas industry. This company has close relationships with MTECH and is willing to hire graduates and support the automated manufacturing program.

December 19, 2019

Mountainland Technical College
2301 West Ashton Blvd.
Lehi, UT 84043

Dear President Christensen,

This letter expresses Micron's commitment to support a Strategic Workforce Initiative grant in automated manufacturing at a Mountainland Technical College (MTECH). Micron would like to hire more qualified people with these skills. Micron hires ~70 technicians per year, competing with many other manufacturing companies which has created a deficit in this skill set. This will help Micron and other companies fill their needs.

We would consider hiring people who have completed MTECH's automated manufacturing programs without an associates or bachelor's degree and would also like associates and bachelor's graduates to also have these skills. As a company we would commit to provide the following support to the development of the program:

- Attend advisory meetings to help design and adjust the curriculum to meet industry needs
- Provide, recommend or recruit instructors with the necessary skills
- Interview students for internships at our company
- Interview students for full time positions at our company
- Provide financial support for employee's tuition reimbursement
- Allow our current employees flexible time in order to attend training in the program
- Give higher wages to employees who have the certification than to those who are not certified
- Assist with encouraging others in the industry to participate

MTECH's Lehi location very close to our company is ideal for this program, and automated manufacturing technician skills are very important to our growth in Utah. We strongly support the use of Strategic Workforce Initiative Funds to support this program.

Sincerely,

Brian Verwer

Micron, Lehi – External Relations

January 2, 2020

Mountain Land Technical College
2301 West Ashton Blvd.
Lehi, UT 84043

Dear President Christensen,

This letter expresses USSynthetic commitment to support a Strategic Workforce Initiative grant in automated manufacturing at a Mountain Land Technical College (MTECH). US Synthetic would like to hire more qualified people with these skills. Our company currently has 35 Maintenance technicians that keep our production lines producing.

We would consider hiring people who have completed MTECH's automated manufacturing programs without an associates or bachelor's degree, and we would also like associates and bachelor's graduates to also have these skills. As a company we would commit to provide the following support to the development of the program:

- Attend advisory meetings to help design and adjust the curriculum to meet industry needs
- Provide, recommend or recruit instructors with the necessary skills
- Interview students for internships at our company
- Interview students for full time positions at our company
- Provide equipment for use in the program
- Provide financial support for students through scholarships or tuition reimbursement (if employed at USSyntehtic.)
- Provide access to our company facilities
- Allow our current employees flexible time in order to attend training in the program
- Give higher wages to employees who have the certification than to those who are not certified
- Assist with encouraging others in the industry to participate

MTECH's Lehi location very close to our company is ideal for this program, and automated manufacturing technician skills are very important to our growth in Utah. We strongly support the use of Strategic Workforce Initiative Funds to support this program.

Sincerely,

Dennis Knuteson

Maintenance Manager, USSynthetic

Industrial Automation - Youth Apprenticeship

FY21 Strategic Workforce Initiative

Consortium Partners:

Ogden-Weber Technical College
Ogden City School District
Weber School District
Utah State University

ABSTRACT

Project Title:	Industrial Automation Youth Apprenticeship Pathway
Applicant:	Ogden-Weber Technical College
Primary Contact:	Monica Schwenk, Development Office Ogden-Weber Technical College 801.395.3781 monica.schwenk@otech.edu
Educational Partners:	Ogden School District – Tim Peters, Executive Director of Career & Technical Education – peterst@ogdensd.org Weber School District –Rod Belnap, CTE Director - rbelnap@wsd.net Utah State University – Steve Williams, Technology & Engineering Education – steve.williams@usu.edu
Industry Partners:	Autoliv, Fresenius, Parker Hannifin, Setpoint
Funding Level Requested:	FY21 - $357,316 FY22 - $255,858 FY23 - $194,908
Strategic Industry Cluster:	Aerospace and Manufacturing
Targeted Occupation:	Industrial Automation
County Served:	Weber
School Districts Served:	Ogden & Weber
Projected Outcomes:	Goal to serve 335 students over a three-year period.

OWTC has formed a consortium with Ogden City School District (OCSD), Weber School District (WSD), and Utah State University (USU) to increase the number of schools participating in the Industrial Automation (IA) Program through AM STEM and Robotics classes.

The project will fulfill Strategic Workforce Initiative's focus on establishing educational pathway partnerships to provide a workforce for high-growth, high-wage occupations.

I. PROJECT OVERVIEW

The need for industrial automation spans every industry from automated aerospace manufacturing to health care to Disneyland rides. Ogden-Weber Technical College (OWTC) will expand the Industrial Automation (IA) Youth Apprenticeship program to address aerospace and manufacturing companies need for middle-skill technicians. By combining technical training and employer interaction, high school students will have dual-college enrollment with an opportunity to earn industry-recognized credentials and apprenticeship job opportunities. Once completed, the credentials will stack to OWTC's Industrial Automation (IA) Certificate with a seamless path to Utah State University's Associate of Applied Science in General Technology and the Bachelor of Technology Systems or Weber State University's Controls Technology Associate Degree.

OWTC has formed a consortium with Ogden City School District (OCSD), Weber School District (WSD), and Utah State University (USU) to increase the number of high schools participating in the Industrial Automation (IA) Program through AM STEM and Robotics classes.

Phase I: A FY19 Talent Ready Utah grant helped pilot the program and completed Phase I of this initiative:

- Robotics equipment provided for Ogden and Weber School District's grades 3-8
- The first AM STEM program successfully established at Ben Lomond High School (BLHS)
- Corrected STEM curriculum duplicity between high school and technical college courses
- Hands-on IA training for 120 students and 45 school district instructors
- Hands-on robotics equipment experiences for 7,000 elementary and junior high students
- 12 students completed AM STEM I; 9 completed AM STEM II; 6 enrolled in OWTC's IA program
- Fall 2019 enrollment demand exceeded the 25-student capacity; 8 students are already enrolled in OWTC's IA program

The AM STEM class was the genesis for Phase I of the youth apprentice project. Students attend at 7:00 a.m., five days per week, to complete units on mechanical fabrication, PLC programing, and robotic programming. Learning includes hands-on activities with industry tools and equipment, computer-based simulations, and online instruction to facilitate conceptual learning and assessments. Industry partners give students opportunities to interact with subject-matter experts and experience industry first hand through company tours. The model provides technical skills training, but cohort team projects encourage critical professional skills development such as work ethic, analytical skills, and teamwork.

Phase II: 2020 SWI funds will deepen and expand the pathway:

- Increase number of employer partnerships, interactions, and youth apprentice opportunities
- Expand BLHS's AM STEM program to accommodate increased demand
- Increase AM STEM II enrollment from AM STEM I class
- Open AM STEM classes at two additional high schools
- Consolidate Robotics I and II tracks and align curriculum to eliminate duplicity and seamlessly stack to OWTC's IA certificate
- Identify solutions to employer hiring-age minimums (18 years or older)
- Improve youth apprenticeship employer agreement process
- Increase transfer pathway (OWTC to USU) to optimize post-secondary certificate to university majors

II. INDUSTRY NEED

Forbes ranked Ogden as one of the fastest-growing cities in America with an overall manufacturing growth rate of 3.5%.[1] Weber County is designated as a Manufacturing and Aerospace Cluster, and IA skills span *all* industries, including manufacturing, retail, education, health care, food services, and other professional and technical services.[2] The fields related to IA produced $22.5 million in GDP for the Ogden-Clearfield MSA (OCMSA),[3] and manufacturing is the number one industry in the OCMSA.

A recent Brookings Institution study predicts that the OCMSA is among the 10 top regions in the United States for workforces impacted by artificial intelligence.[4] The report includes the fields of automation, robotics, and software.

Employers across sectors are competing for experienced candidates from a fast-shrinking talent pool as an estimated 10,000 baby boomers reach retirement age every day.[5] With an unemployment rate ranked second in the nation (2.5%)[6] and one of the most diverse economy in the country, Utah's workforce needs are substantial.[7]

[1] https://jobs.utah.gov/wi/data/employment/shorttermindprojections.html
[2] 2018 Burning Glass International Inc. Labor Insights; Regional Scan for Ogden-Clearfield MSA
[3] JobsEQ, Industry Spotlight Report
[4] https://www.deseret.com/2019/12/7/20984831/artificial-intelligence-will-affect-utah-more-than-other-states-new-study-says
[5] Investing in the American Workforce, Huffington Post, September 2015
[6] https://money.cnn.com/interactive/economy/state-unemployment-rates/
[7] http://business.utah.gov/why-come-to-utah/dynamic-economy/

Stackable Education Level	Job Title	Stars	OCMSA Projected Job Openings	Statewide Projected Job Openings
OWTC Certificate	Electrical and Electronics Repairers, Commercial and Industrial Equipment	3	20	30
	Industrial Machinery Mechanics	5	50	210
	Maintenance Workers, Machinery	4	20	50
	Maintenance and Repair Workers, General	3	110	570
USU & WSU Associates	Industrial Engineering Technicians	4	20	30
	Electronic and Electronic Engineering Technicians	5	20	70
USU Bachelors	Industrial Engineers	5	40	110
	Mechanical Engineers	5	70	200
	Industrial Production Managers	5	30	90

Table 1 – Utah Department of Workforce Services[8]

With almost 400 current job openings in OCMSA alone, adding new skilled workers must come from the secondary student pipeline. Through increased attention by all partners, secondary enrollment at OWTC is building momentum. In FY19, secondary headcount increased by 32.15% over the previous year—the second highest growth out of eight technical colleges with 1,829 high students served. By enrolling while in high school, students saved $731,668 in tuition expense.

Still, employer demand exceeds OWTC IA program output. As the largest IA program in the Utah System of Technical Education (UTech), cumulative postsecondary enrollment is 168 with 73 total program completers. In FY19, the four UTech colleges offering IA programs produced 192 graduates, far short of employer hiring needs.

a. Skills Needed

Demonstrated proficiencies, on-the-job training, and employer needs have been mismatched in the current push-through education model. With the expansion of the AM STEM program, career and technical education (CTE) courses are better aligned, articulation identified, and proficiencies delineated for the apprenticeship track. Eliminating educational duplications and providing frequent connection with industry mentors accelerates the learning process and creates a "pull-through model" for youth apprentices.

The skills required for IA positions includes robotics, industrial safety, automation basics, fluid power, electrical systems, programmable logic controllers, critical thinking and a good work ethic. An employer advisory board oversees the IA program's skill set and curriculum. Representatives from six companies perform this function: Autoliv, Fresenius, Elkay, Systems

[8] https://jobs.utah.gov/jsp/almiswage/#/basicsearch/036260/Ogden Clearfield%20Metro/engineering%20manufactur/17-2199.04

Integrators, Kimberly Clark, and Champion Technology Services, Inc. Annual employer program evaluations reflect that the IA program content is consistent with industry needs, and the program's Fanuc robots are identical to industry environments. OWTC is the largest apprenticeship training provider in the state of Utah, and the program lead for IA youth apprentice project is one of only two FANUC robotic-certified instructors.

b. Wages

Wages for entry-level IA-related jobs in OCSMA range from $11 - $23 per hour.[9] Completion of a youth apprenticeship training program fast-tracks students past the $10.95 entry-level IA operator wage and into the middle-skill IA-technician range of $13 - $15.

Stackable Education Level	Job Title	Hourly Inexperienced	Annual Inexperienced	Hourly Median	Annual Median
Certificate	Electrical and Electronics Repairers, Commercial and Industrial Equipment	$23.77	$49,296	$28.45	$59,176
	Industrial Machinery Mechanics	$19.79	$41,163	$27.83	$57,886
	Maintenance Workers, Machinery	$20.00	$41,600	$25.38	$52,790
	Maintenance and Repair Workers, General	$10.95	$22,776	$17.65	$36,712
Associates	Electronic and Electronic Engineering Technicians	$26.33	$54,766	$33.77	$70,241
	Industrial Engineering Technicians	$24.52	$51,000	$31.85	$66,248
Bachelors	Industrial Engineers	$29.39	$61,131	$38.11	$79,268
	Mechanical Engineers	$29.07	$60,465	$39.71	$82,596
	Industrial Production Managers	$29.27	$60,881	$45.19	$93,995

Table 2 – Utah Department of Workforce Services[10]

III. PROGRAM DETAILS

The IA youth apprenticeship program addresses workforce needs by transforming educational pathways and helping employers become producers of young talent. High school students will be able to choose from two entry points:

1. AM STEM – 120 hours - early-morning industrial automation program
2. Robotics – 75 hours

[9] https://jobs.utah.gov/jsp/utalmis/#/occupation/499043/report
[10] https://jobs.utah.gov/jsp/almiswage/#/basicsearch/036260/Ogden Clearfield%20Metro/engineering%20manufactur/17-2199.04

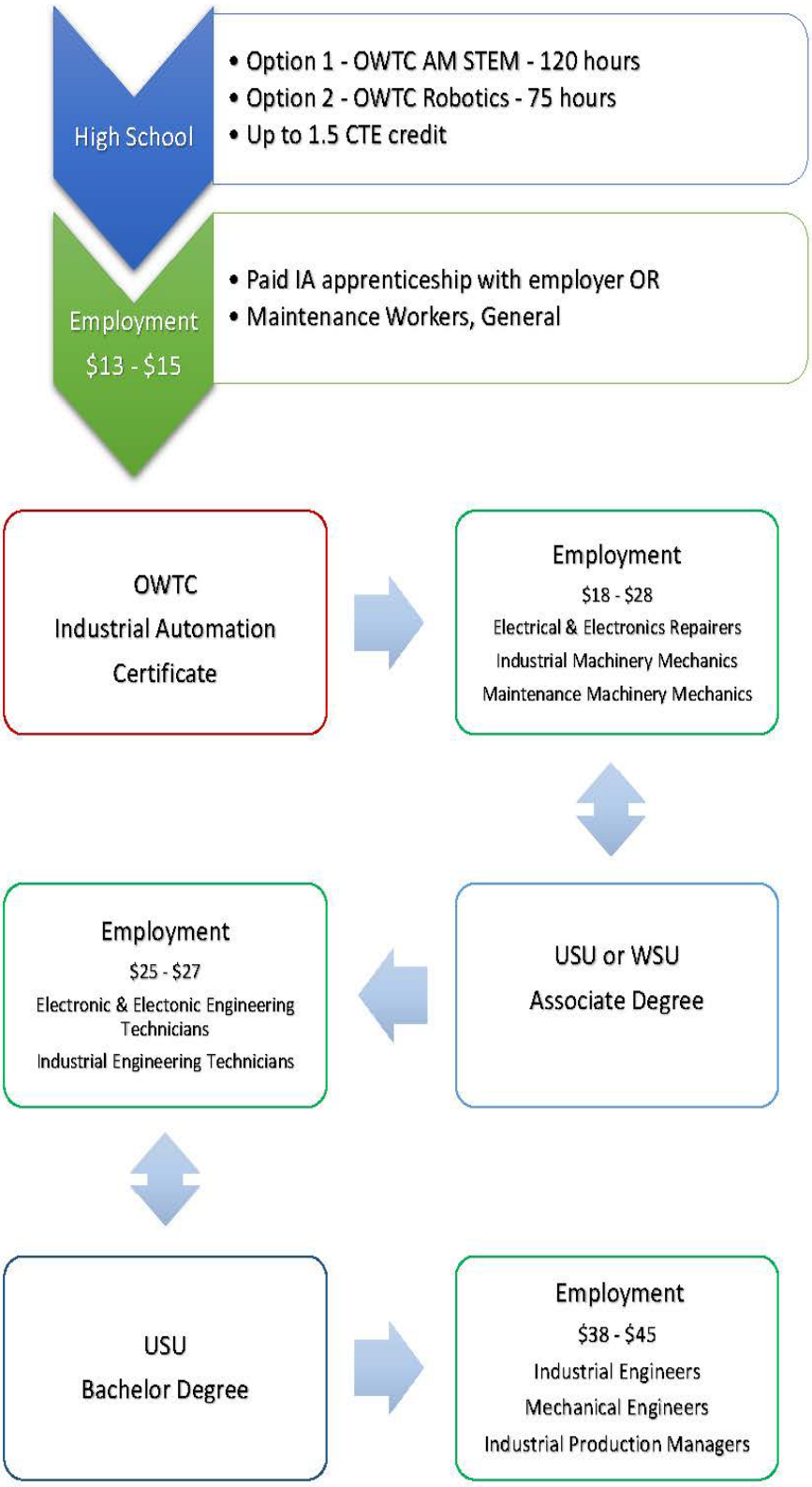
Completers will earn entry-level IA credentials that stack to OWTC's 900-hour IA certificate. Completers of the OWTC's IA certificate will be on track to continue at USU or WSU.

USU is developing articulation pathways for all technical college certificates. They now offer OWTC IA Program graduates a pathway to an Associate of Applied Science in General Technology, which stacks seamlessly to a Bachelor of Science in Technology Systems. Students with an automation background have multiple emphasis options: robotics, automation, and controls; technical management; quality and reliability. USU's Brigham City Campus provides easy access and working students will find that most of the training available is available online.

Phase I of the project proved that the cohort model of instruction kept high school students accountable to each other for attendance and classwork. Initially, employer/student interaction was scheduled for later in the semester, but students wanted to have their *own* experiences earlier. Simply *telling* them about stackable credentials and educational on/off ramps did not ignite their imaginations. Students developed personal investment when employers validated the power of combining technical skills with real-work experiences. AM STEM students said they were able to relate what they were learning to real-word applications because of **consistent** contact with employers. Every month, students interacted with local employers through presentations or tours. Students then toured OWTC to help connect the dots of secondary education—certification—employment—university-level education.

Earlier employer and parent involvement was implemented for the fall 2019 AM STEM class. During the first week of class, students and parents were invited to an AM STEM class kickoff dinner. Families heard from President Taggart, OCSD Superintendent Nye, BLHS Principal Poll, and two AM STEM alumni. Representatives from Parker Hannifin, Fresenius, and Autoliv presented on the value of IA skills and the employment opportunities upon completion of each step. The benefits of this early employer interaction have already been realized through student retention and commitment.

OWTC INDUSTRIAL AUTOMATION – YOUTH APPRENTICE PATHWAY



IV. BUDGET

The funding will facilitate a collaboration with students, employers, and educators to create a youth apprenticeship pathway designed to attract the next generation of workers. Remarkably, 87% of apprentices are employed after completing their programs at an average starting wage above $50,000.[11] The program will be expanded over three years:

Year 1 - $357,316
Year 2 - $255,858
Year 3 - $194,908

(See Budget – Attachment A)

V. RETURN ON INVESTMENT

Exposure to technical skills training yields positive results. OWTC found that students enrolled at the tech college during high school were 41% more likely to complete than students who enroll as adults.[12] WSD has seen an increase in the number of 8th grade students applying to Project Lead the Way (PLTW) programs when students had access to robotics in elementary school. Nationally, the high school graduation rate for students concentrating on a CTE program is 93% compared to 80% for non-CTE students.[13]

The return on investment for employers is also impressive—international studies suggest that for every dollar spent on apprenticeship, employers may get an average of $1.47 back in increased productivity, reduced waste, and greater front-line innovation.[14]

A continuous pathway spanning from elementary to postsecondary education is critical for improving enrollment rates, increasing the number of qualified youth apprenticeship candidates, and creating larger career-recruitment pools. Currently, over 9,000 WSD students and 650 OCSD students participate in PLTW Launch program.

The college serves 256,359 Weber County residents but draws a majority of its students from Ogden City—which ranks third in the state's poverty rate. With 21.4% of the 87,325 residents living in poverty—twice that of Weber County—and a 30% Latino rate, economically disadvantaged students are working harder than ever to get by, let alone get ahead. OWTC's student demographics closely mirror the community with a 28.8% minority student enrollment.

[11] FACT SHEET: Investing $90 Million Through ApprenticeshipUSA To Expand Proven Pathways Into The Middle Class
[12] OWTC FY17 outcome data
[13] https://www.acteonline.org/cte-improves-student-achievement-in-high-school-college-and-career/
[14] FACT SHEET: Investing $90 Million Through ApprenticeshipUSA To Expand Proven Pathways Into The Middle Class

Both OCSD and WSD are considerably above Utah's poverty of 10.2%.[15] Many of OCSD's 12,190 students are beset by a range of barriers to success and well-being, including the potent combination of socio-economic conditions, educational deficits, anti-social behaviors, and an overall lack of protective factors. OCSD has the highest rate of poverty in Utah with 76% of its youth qualifying for free/reduced lunch, and the third highest rate of minority students at 64%, with 21% Limited English Proficient.[16] In WSD, 30.71% of students are economically disadvantaged with 3.15% Limited English Learners.[17]

Postsecondary education remains the greatest investment that those experiencing economic hardship can make in themselves. Without it, Ogden City's 1,717 youth, holding only a high school diploma, are at risk of joining the ranks of poverty.[18] In Weber County, the adult intergenerational poverty (IGP) wage is $11,834 with only 25% of IGP adults working all 4 quarters.[19] The Association of Career and Technical Education estimates that for every Utah dollar spent on CTE programs, there will be a return of $4.30 to the community. Economically, a UTech graduate's wage increased by 34.99% from one year prior to graduation to one year after.

VI. TIMELINE & OUTCOMES

Timeline	Activity	Resources Needed	Outcomes
July 2020 – June 2021	BLHS – AM STEM expansion & robotics streamlined	Instructors, equipment, robotics curriculum revisions	**BLHS AM STEM Enrollment:** Year 1 - 25 Year 2 - 27 Year 3 - 30 60% completion rate[20] **BLHS Robotics Enrollment:** Year 1 - 25 Year 2 - 30 Year 3 - 35 60% completion rate **OWTC IA Program Enrollment:** Year 1 - 10% of completers enroll Year 2 - 12% of completers enroll Year 3 - 15% of completers enroll

[15] https://www.census.gov/quickfacts/fact/table/utah,UT/IPE120216#viewtop
[16] OCSD Oct. 1 Report 2016-17
[17] WSD April 2018 data
[18] https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B15001&prodType=table
[19] DWS, U.S. Dept. of Housing and Urban Development, Intergenerational Welfare Reform Commission
[20] Based on OWTC's accreditation standard of 60% program completion

July 2020 – June 2021	OHS New Program – AM STEM & robotics streamlined	Instructors, equipment, robotics curriculum revisions	**OHS AM STEM Enrollment:** Year 1 - 15 Year 2 - 17 Year 3 – 20 60% completion rate **OHS Robotics Enrollment:** Year 1 - 20 Year 2 - 30 Year 3 - 40 60% completion rate **OWTC IA Program:** Year 1 - 10% of completers enroll Year 2 - 12% of completers enroll Year 3 - 15% of completers enroll
July 2021 – June 2022	WSD New Program – AM STEM (high school TBD)	Instructors, equipment, curriculum revisions	**WSD AM STEM Enrollment:** Year 1 - 15 Year 2 - 17 Year 3 - 20 60% completion rate **OWTC IA Program:** Year 1 - 10% of completers enroll Year 2 - 12% of completers enroll Year 3 - 15% of completers enroll
July 2020 – June 2022	OWTC IA Program	Enrollment to USU or WSU	OWTC IA Program - 60% completion rate Year 2 – 2% of completers continue to USU or WSU Year 3 – 3% of completers continue to USU or WSU
July 2020 – June 2022	Youth Apprentice - Application Process	Employers, SWI coordinator	Enhance youth apprentice application process (application, insurance, hiring age, etc.)
July 2020 – June 2022	Youth Apprentice - Employer Work Sites	Employers, SWI coordinator	Year 1 – 1 worksites established Year 2 – 2 worksites established Year 3 – 3 worksites established

In FY19, the IA program had an 83% completion rate and a 98% job placement rate.

VII. LETTERS OF COMMITMENT

Letters of commitment with scope of responsibilities are attached.

Budget - Attachment A

Category	Item	Description	FY21	FY22	FY23
1. Salaries & Benefits	SWI Career Pathway Coordinator - OWTC	Responsible for SWI project oversight, outcomes, and reporting. Full-time hourly $25 per hour x 2080 hours + 10% benefits, and 3% annual increase.	$ 62,400	$ 64,272	$ 66,200
	IA Instructor - OWTC	Responsible for classroom coordination between secondary school sites and OWTC	$ 1,500	$ 1,500	$ 1,500
	AM STEM Instructor - BLHS	Program Continuation - Responsible for instruction at high school site - $29.61 per hour x 7 hours per week x 36 weeks + 10% benefits, with 3% annual increase	$ 8,212	$ 8,458	$ 8,712
	AM STEM Instructor - OHS	New Program - Responsible for instruction at high school site - $29.61 per hour x 7 hours per week x 36 weeks + 10% benefits, with 3% annual increase	$ 8,212	$ 8,458	$ 8,712
	AM STEM Instructor - WSD	New program - Responsible for instruction at high school site - $29.61 per hour x 7 hours per week x 36 weeks + 10% benefits, with 3% annual increase	$ -	$ 7,462	$ 7,686
2. Equipment & Supplies	Robotics II Class - BLHS & OHS	K-12 Introductory Robotics Package - $6,600 x 6	$ 39,600	$ -	
	Robotics II Class - BLHS & OHS	RobotGuide K-12 Academic License - $150 x 7	$ 1,050	$ -	$ -
	Robotics II Class - BLHS & OHS	LR Mate Cert Cart - $35,000 x 2	$ 70,000	$ -	$ -
	AM STEM Class - BLHS expansion	RobotShop - Lynxmotion AL5D PLTW Robotic Arm Kit - $268.50 x 6	$ 1,611	$ -	$ -
	AM STEM Class - BLHS expansion	Basic Pneumatic Instrument Panel - $1,325 x 6	$ 7,950	$ -	$ -
	AM STEM - New lab	RobotShop - Lynxmotion AL5D PLTW Robotic Arm Kit - FY21 - OHS - $268.50 x 12; FY22 - WSD - $268.50 x 12	$ 3,222	$ 3,222	$ -
	AM STEM - New lab	Mechanical Fabrication Lab - FY21 OHS - $10,135 x 4; FY22 - WSD - $10,135 x 4	$ 40,540	$ 40,540	$ -
	AM STEM - New lab	Basic Pneumatics Learning System - FY21 - OHS - $4,665 x 4; FY22 WSD - $4,665 x 4	$ 18,660	$ 18,660	$ -
	All AM STEM Classes	PB Valve Assembly - FY21 BLHS - $100 x 6; FY21 OHS $100 x 4; FY22 WSD - $100 x 4	$ 900	$ 400	-
	AM STEM & OWTC IA Program	Amatrol learning management system - Unlimited code - Annual Fee	$ 29,300	$ 29,300	$ 29,300
	AM STEM I & II	Skills Packets - FY21 - $20 per student x 30 students x 2 semesters x 2 schools; FY22 - $20 per student x 40 students x 3 schools	$ 1,200	$ 1,800	$ 1,800
	AM STEM II	Simutech subscription for Automation Troubleshooting - FY21 $88.90 x 24 students x 2 schools; FY22 $88.90 x 39 students x 3 schools	$ 4,267	$ 10,401	$ 10,401

Budget - Attachment A

Category	Item	Description	FY21	FY22	FY23
3. Professional Development/Travel	Industry tours	Bus for student field trips - FY21 - $72.50 per trip x 5 per class @ 5 hours each x 1 school; FY22 - 2 schools; FY23 - 3 schools	$ 1,813	$ 3,625	$ 5,438
	Robotics Training - Instructors	40-hour Fanuc Robotics class - 4 high school teachers x $750 each	$ 3,000	$ -	$ -
	AM STEM Training - Instructors	2 weeks of IA program training - FY21 - 3 instructors x $36 per hour x 60 hours; FY22 -2 instructors x $36 per hour x 60 hours	$ 2,160	$ 4,320	$ -
	Annual Technical Training Refresher	Annual technical training refresher for high school teachers - FY21 - 1 instructors x 20 hours x $36; FY22 - 2 instructors x 20 hours x $36; FY23 - 3 instructors x 20 hours x $36	$ 720	$ 1,440	$ 2,160
4. Contract Services	Equipment Service	Equipment service agreement for damaged parts & consumables - FY21 - 1 site x $1,000; FY22 - 2 sites x $1,000; FY23 - 3 sites x $1000	$ 1,000	$ 2,000	$ 3,000
	Utah State University (USU)	Lab equipment and a half-time faculty position to fully support the IA pathway.	$ 50,000	$ 50,000	$ 50,000
Total:			**$ 357,316**	**$ 255,858**	**$ 194,908**

December 11, 2019

Monica Schwenk
Ogden-Weber Technical College
200 N. Washington Blvd.
Ogden, Utah 84404

Subject: 2020 Strategic Workforce Initiative Proposal – Industrial Automation

Dear Ms. Schwenk:

Autoliv is the world leader in Automotive Safety Products. Each year our products save 30, 000 lives and reduce the severity of injuries to over 300,000 people. To protect local jobs, and to continue to compete in a global market, we have and will continue to automate our manufacturing process.

We anticipate hiring 5-10 engineers in the next two years. Currently, we're not able to fill all available engineering positions, specifically in Controls Engineering. We need training pathways that encourage and prepare students for this field.

We commit to the following for successful implementation and sustainability of the youth apprenticeship program:

- Identify skills and competencies for curriculum development and verify skill proficiency
- We will provide tours at mutually agreed times and locations to students
- Provide guest speakers for classes
- If hiring prerequisites are met, candidate eligible to apply for open positions we have available
- Other activities to ensure project success

Autoliv values its long partnership with the technical colleges. I can be reached at 801-625-7635 for further questions or information.

Sincerely,

Michael Quayle
Manager, Human Resources

Autoliv ASP, Inc.
Utah Assembly Operations & Service
250 American Way
Brigham City, Utah 84302
USA

FRESENIUS MEDICAL CARE

December 20, 2019

Monica Schwenk
Ogden-Weber Technical College
200 N. Washington Blvd.
Ogden, Utah 84404

Subject: 2020 Strategic Workforce Initiative Proposal – Industrial Automation/Robotics Youth Apprenticeship Expansion

Dear Ms. Schwenk:

Fresenius Medical Care North America is a premier health care company focused on delivering the highest quality care to people with renal and other chronic conditions. The company has over two decades of healthcare manufacturing experience, operates in 50+ states and territories, and employs over 60,000 in the U.S. Personal development and professional advancement are essential to our steadfast goal of improving patient lives.

We are experiencing a skills gap for trained technician positions at our plant. The skill set extends beyond the entry-level production role but doesn't require a four-year degree. Middle-skills jobs are a vital part of plant operations, but we struggle to fill the 8-10 annually available positions. As a partner with OWTC's youth apprenticeship project proposal, we commit to the following for successful implementation and sustainability:

- Access to work site for visits and tours
- Provide trained youth apprentice mentors
- Identify skills and competencies for curriculum development
- Verify student skill proficiency
- If mandated hiring prerequisites are met, candidate(s) eligible for hire as apprentice employee(s) and offered a commensurate wage
- Other activities to ensure project success

At Fresenius, employees have access to comprehensive training and development programs, tuition reimbursement for future education, and a career path for continued professional growth. We are committed to the success of a youth apprenticeship program and look forward to working with the students and education partners.

I can be reached at (801) 626-4721 for further questions or information.

Sincerely,

Brett Barton
Sr. Director of Manufacturing Operations, Ogden Plant

OGDEN SCHOOL DISTRICT
Empowering Excellence Through Education

December 17, 2019

Monica Schwenk
Ogden-Weber Technical College
200 N. Washington Blvd.
Ogden, Utah 84404

Subject: 2020 Strategic Workforce Initiative Proposal – Industrial Automation Pathway

Dear Ms. Schwenk:

Career and technical education have proven to increase high school graduation. During the 2018-2019 school year, Ogden-Weber Technical College (OWTC) sponsored an AM STEM class at Ben Lomond High School (BLHS). The fall 2018 semester yielded 21 participants and 12 completions and 9 completions second semester. Six students immediately enrolled into OWTC's IA program. More students will have a dual-college enrollment experience by expanding the BLHS class and offering classes at Ogden High School.

Students completing Ogden-Weber Technical College's AM STEM and robotics programs have doors opened to well-paying jobs in industries such as aerospace and military, automotive, consumer products, recreational manufacturing, food and beverage, and metals and mining. They have multiple pathway choices—apprenticeships, college enrollment, full-time employment, or a combination.

Attaining postsecondary credentials without student debt is critical to our region because Ogden and Ben Lomond High Schools fall within a designated Promise Neighborhood zone. High school students attend tuition free, helping families balance educational opportunities with life's financial challenges.

To ensure new program implementation and program expansion success, we commit to the following:

- Expand AM STEM/robotics classes at Ben Lomond High School
- Offer AM STEM/robotics classes at Ogden High School
- Marketing and outreach for enrollment in the AM STEM and robotics classes
- Promote IA youth apprenticeship and work-based learning opportunities for students
- Continue streamlining credentials to stack from the secondary to the postsecondary system
- Support IA youth apprenticeship training for teachers, counselors, and advisors

- Participate fully in gathering needed data to support outcome attainment
- Other activities to ensure program success

Our vision is that every student has an opportunity to explore career areas throughout high school that lead to success in college, career and life. We value the OWATC's partnership and support of Ogden City School District students. Please contact me at 801-737-7281 or peterst@ogdensd.org if you have any other questions.

Sincerely,

Timothy A. Peters
Executive Director
Career & Technical Education

Parker Hannifin Corporation
Parker Aerospace
Control Systems Division-Ogden
1425 West 2675 North
Ogden, Utah 84404-2696 USA
Office 801 786 3000
Fax 801 786 3085

Monica Schwenk
Ogden-Weber Technical College
200 N. Washington Blvd.
Ogden, Utah 84404

Subject: 2020 Strategic Workforce Initiative Proposal – Industrial Automation/Robotics Youth Apprenticeship Expansion

Dear Ms. Schwenk:

Parker Hannifin is a Fortune 250 global leader in motion and control technologies. For more than 100 years, the company has engineered the success of its customers in a wide range of diversified industrial and aerospace markets. Competing and winning in today's challenging global market requires Parker to build on the company's strong foundation to take performance to the next level.

A large number of our expert employees are retiring; and, in the past year, Parker Hannifin has hired for over 100 positions. The shrinking talent pool has prompted new approaches to recruitment. We are committed to helping high school students see the opportunities of working in Parker's culture of commitment to excellence.

As a partner with OWTC's youth apprenticeship project over the past year, we participated in class presentations and tours. We will continue to offer opportunities for youth apprentices and commit to the following for successful implementation and sustainability:

- Identify skills and competencies for curriculum development and verify skill proficiency
- Access to work site for visits and tours
- Provide guest speakers for classes
- Mentor 4-6 apprentice students annually
- If mandated hiring prerequisites are met, candidate(s) eligible for hire as apprentice employee(s) and offered a commensurate wage
- Other activities to ensure project success

Thank you for considering this important industrial automation/robotics training pathway for our community. I can be reached at 801-786-3084 for further questions or information.

Sincerely,

Doug Dilley
General Manager, Commercial Flight Controls Division

859 W 1050 S
Ogden, UT 84404

December 23, 2019

Monica Schwenk

Ogden-Weber Technical College

200 N. Washington Blvd.

Ogden, Utah 84404

Subject: 2020 Strategic Workforce Initiative Proposal – Industrial Automation/Robotics Youth Apprenticeship Expansion

Dear Ms. Schwenk:

For 26 years, Setpoint has helped manufacturers improve the way they make and distribute goods. Our custom automation solutions serve a variety of industries ranging from automotive to entertainment, medical devices to clean energy, and ammunition to composites. We offer great paying careers working with robotics and automation.

We anticipate hiring 30 engineers in the next two years. Currently, we're not able to fill all available engineering positions, specifically in Controls Engineering. We need training pathways that encourage and prepare students for this field.

We commit to the following for successful implementation and sustainability of the youth apprenticeship program:

- Identify skills and competencies for curriculum development and verify skill proficiency
- Access to work site for visits and tours
- Provide guest speakers for classes
- Provide work-based learning opportunities
- If hiring prerequisites are met, candidate eligible for hire as apprentice employee and offered a commensurate wage
- Other activities to ensure project success

859 W 1050 S
Ogden, UT 84404

Setpoint values its long partnership with the technical college. I can be reached at (385) 289-3614 for further questions or information.

Sincerely,

Ashley Hadley | Setpoint

HR Manager

O: +1 (385) 289-3614 | C: +1 (801) 643-5658

COLLEGE of AGRICULTURE and APPLIED SCIENCES
UtahStateUniversity

December 17, 2019

Monica Schwenk
Ogden-Weber Technical College
200 N. Washington Blvd.
Ogden, Utah 84404

Subject: 2020 Strategic Workforce Initiative Proposal – Industrial Automation Pathway

Dear Ms. Schwenk:

Utah State University (USU) offers more bachelor's degrees than any other Utah school, many of which are unique in the state, such as aerospace engineering. We are proud to offer graduates of Ogden-Weber Technical College's Industrial Automation program a pathway to an Associate of Applied Science in General Technology and a Bachelor of Science in Technology Systems. Students with an automation background have multiple emphasis options: robotics, automation, and controls; technical management; quality and reliability. They can attend USU's Brigham City Campus with much of the training available online.

USU is committed to forging clear educational paths for the industrial automation students and will:

- Ensure USU labs support the industrial automation emphasis
- Provide a part-time faculty member dedicated to the project
- Give educational presentations and tours
- Participate in marketing and outreach efforts at secondary and postsecondary levels
- Ensure credentials continue to stack from secondary to postsecondary system
- Support IA youth apprenticeship training for teachers, counselors, and advisors
- Participate fully in gathering needed data to support outcome attainment
- Other activities to ensure program success

The industrial automation youth apprentice program aligns with USU's mission to be one of the nation's premier student-centered universities. We believe in cultivating diversity of thought and culture and by serving the public through learning, discovery and engagement. I can be reached at (435) 760-2469, or steve.williams@usu.edu if you would like to talk about our partnership role in person.

Sincerely,

Steve Williams
Technology Systems Faculty

Dr. Rod Belnap
Director
801.476.6522
rbelnap@wsd.net

WEBER SCHOOL DISTRICT
CTE
CAREER & TECHNICAL EDUCATION
Your Bridge to the Future
1007 W. 12th Street | Ogden, UT 84404

Susan Mindrum
Secretary
801.476.6521
smindrum@wsd.net

December 17, 2019

Monica Schwenk
Ogden-Weber Technical College
200 N. Washington Blvd.
Ogden, Utah 84404

Subject: 2020 Strategic Workforce Initiative Proposal – Industrial Automation Pathway

Dear Ms. Schwenk:

Weber School District (WSD) is excited to partner with Ogden-Weber Technical College (OWTC) to provide an education-to-career pathway for students. During the 2019-2020 school year, OWTC's Talent Ready Utah grant provided over $94,000 of robotics equipment for 7 elementary schools, 9 junior high schools, and 6 high schools. Adding a high school AM STEM program will expand the educational pathway for these talented students.

We are committed to the following project elements:

- Identify high school for AM STEM track
- Market AM STEM enrollment
- Promote industrial automation youth apprenticeship and work-based learning opportunities for students
- Streamline credentials to stack from the secondary to the postsecondary system
- Support IA youth apprenticeship training for teachers, counselors, and advisors
- Participate fully in gathering needed data to support outcome attainment
- Other activities to ensure program success

Our students deserve every opportunity to succeed. Thank you for partnering with us to provide WSD students with early-college experiences.

I can be reached at 801-476-6522 for any questions.

Sincerely,

Dr. Rodney Belnap
CTE Director
Weber School District

2020 STRATEGIC WORKFORCE INITIATIVE GRANT PROPOSAL

ABSTRACT

Applicant Name: Pinnacle Canyon Academy

Project Title: Technology Rural Career Pathway

Strategic Industry Cluster: Software Development and Information Technology

Key Partners: Carbon High School, Utah State University Eastern, FutureINDesign, Rural Online Initiative

Summary: Pinnacle Canyon Academy seeks funding to develop and expand the Technology Rural Career Pathway program in Price. The program is conducted in partnership with Carbon High School and Utah State University Eastern. FutureINDesign works in partnership with all three schools to deliver and administer the program. Students in the Technology Rural Career Pathway program will participate in an industry-led technology, design, and soft-skills job training program during their junior and senior years of high school. They will also earn industry certifications and stackable college credits, complete an industry internship in concert with Utah's Rural Online Initiative, and continue on to earn Certificates of Proficiency/Completion through Utah State University Eastern.

Utah's economy is doing well, but there are still certain sectors of state residents who are not benefiting from the current strong economy. Rural and economically disadvantaged students often have difficulty accessing pathways that will lead to thriving employment. The Technology Rural Career Pathway program targets these students to provide the education and certification necessary to guide them on career pathways. At the same time, tech employers and Utah's economy will also benefit, as these students will be prepared to enter Utah's tech workforce at all levels and alleviate some of the industry's workforce shortages.

Funding will also enable the Technology Rural Career Pathway program to expand to other economically disadvantaged and/or rural locations throughout Utah in future years. The goal of the program is to increase remote employment opportunities for young people in the tech industry, providing them the necessary training and certifications to earn a thriving wage while remaining in their rural communities, thus creating a pipeline of fresh talent for Utah's growing tech workforce. Doing so will strengthen the economic outlook for individuals, families, communities, and Utah.

2020 STRATEGIC WORKFORCE INITIATIVE GRANT PROPOSAL

Pinnacle Canyon Academy

WORKFORCE NEEDS

The number of job openings in the tech industry is steadily rising as Utah continues to position itself as a force in technology. The Technology Rural Career Pathway is designed to meet Utah's workforce needs. Utah's tech industry is experiencing high levels of growth, and that growth level is projected to continue. In 2018, Utah's net tech employment year-over-year change was 4.3%, which was higher than any other state in the nation (CompTIA Cyberstates 2019 report). This growth has led to a large number of unfilled tech jobs in the state. In January 2019 there were almost 6,000 unfilled tech positions in Utah (Utah Department of Workforce Services).

Besides providing in-demand workers for Utah's tech industry, the Technology Rural Career Pathway will help stem the flow of young people leaving the state's rural areas. In 2016 the tech industry had the second highest remote work percentage, with 57% of those employed in the field working remotely in some capacity. This rate continues to grow, and the tech industry has higher rates of full-time remote positions and top paid remote workers than other industries, making it an ideal employment choice for individuals in rural areas such as Price (Gallup 2017 State of the American Workplace Report).

The Technology Rural Career Pathway program is designed to address the workforce needs of the rural community where the students live. Historically, coal mining was a respected occupation in Carbon County, and prior to the last few years, it was the lifeblood and foundation of the community. However, the community has changed drastically with the recent closure of many mines, and mining now accounts for only 4% of Carbon County jobs (Utah Department of Workforce Services). The community now faces many difficult economic conditions:

- 67.2% of students at Pinnacle Canyon Academy and 36.6% of students at Carbon High School are economically disadvantaged, rates which are above the state average of 35% (Utah State Board of Education, 2017 - 2018 school year)
- In 2016 the annual job growth rate for all occupations in Utah was 2.7%, but in Carbon County it was only 0.8% (Utah Department of Workforce Services)
- The average monthly wage in Utah for the 3rd quarter of 2018 was $3,887, but that amount was lower in Carbon County, at $3,292 (Utah Department of Workforce Services)
- In March 2019 the Utah statewide unemployment rate was 3.0%, but in Carbon County that number was higher, at 4.1% (Utah Department of Workforce Services)

- Carbon County has the highest intergenerational poverty adult concentration in all of Utah's counties at 3.30% (Utah Intergenerational Welfare Reform Commission 2018 Annual Report)
- Carbon County is the second highest county for children living in intergenerational poverty, with 16% of children living in intergenerational poverty and 25% more at risk of remaining in poverty as adults (Utah Intergenerational Welfare Reform Commission 2018 Annual Report)

The Technology Rural Career Pathway program provides the skills and credentials students need to get started on the tech industry pathway. It also provides the support necessary to bridge the transition from high school to college. During their junior and senior years of high school, students receive training that positions them to earn competitive starting wages, as Utah's median tech industry wages are 78% higher than median state wages (CompTIA Cyberstates 2019 report). After completing the Technology Rural Career Pathway program, rural residents will be prepared for a strong start in the tech industry, filling much needed job openings in Utah.

PROGRAM OF STUDY

The Technology Rural Career Pathway program connects students with educators and employers specializing in software development and information technology. This networking and education program gives students a foundation that they can build from while gaining valuable real world experience. The program builds on the strengths and creativity of students, creating a community of support while increasing their opportunities for jobs, continued education, certification, and entrepreneurship. Each student will leave the program with knowledge in software development and information technology that will help them develop a portfolio of work which they can use to further their career and education.

The FutureINDesign portion of the Technology Rural Career Pathway program is embedded in the school day with two evenings per week during the junior year, but the senior course requires four evenings a week for completion. Blending the program over a two-year period and integrating some courses during the school day provides a sustainable opportunity for students, especially those who will benefit from internships and/or apprenticeships after school during their senior year.

Students will be given opportunities for leadership through completion of the workforce development program provided by FutureINDesign and through exposure to the workforce through internships. Students will begin taking Concurrent Enrollment and Early College courses through Utah State University Eastern while still in high school. This connects the students with postsecondary education, and after graduation they will transition to Utah State University Eastern to finish a Certificate of Proficiency or Certificate of Completion.

The Technology Rural Career Pathway program will help fulfill the Utah Governor’s goal of filling 40,000 high-skill, high-wage jobs by providing access for high school students to tech industry pathways, identifying and creating new pathways, and providing certifications in skills that will lead to high paying occupations for students in Eastern Utah. Students completing the program will have the skills that result in employment in high paying, high demand careers in computer technology.

FutureINDesign Workforce Development Program

The Technology Rural Career Pathway begins with Pinnacle Canyon Academy and Carbon High School students enrolling in FutureINDesign's Workforce Development Program during their junior and senior years. FutureINDesign's industry taught courses are articulated with Utah State University Eastern. Students are able to earn Early College credits while enrolled in FutureINDesign's Workforce Development program.

- *Junior Year: Technology Pathways*
  The program begins with a focus on developing technical skills using Adobe Creative Cloud (CC), coding software, financial literacy, project literacy, public speaking, and team building. Students will complete a basic design module in Adobe CC as well as a 12-month success plan. During this year, the program also focuses on personal and professional development through career exploration, civic engagement, resume and portfolio building, presenting to clients, and networking.

- *Senior Year: Earn and Learn*
  Once students gain a firm grasp of technical skills, the focus shifts to setting goals, getting certified, working with startup incubators, and gaining apprenticeships. Students end this phase of the program with a professional portfolio and capstone project which is showcased to local professionals at an end of year review to demonstrate proficiency in either Software Development, IT and/or Adobe CC. After completing the program, students receive guidance for scholarship application, career placement, and startup incubation.

FutureINDesign Workforce Development Program Outline	
Junior Year	Senior Year
Professional Leadership & Learning ● Foundations in Technology ● Becoming an Ambassador for Social Change ● College Readiness ● Business Leadership ● Personal Development ● Financial Management ● Developing a Professional Portfolio ● Pre-internship Development ● Prep for Capstone Social Justice Project	**Professional Leadership & Learning** ● Professional Development ● College Readiness ● Business Leadership ● Developing a Professional Portfolio ● Pre-internship ● Internships/Job Entry ● Capstone Social Justice Project ● Real-time Community Work Projects *(partnership with Carbon County Economic Recruitment and Retention Committee)*
Technology Hard Skills ● Design *(industry instructors)* ○ Introduction to Design ○ Intermediate Design ● Coding *(industry instructors)* ○ Introduction to Coding ○ Intermediate Coding ● Industry Certifications *(through USUE)* ○ Microsoft Certifications ○ CompTIA Certifications	**Technology Hard Skills** ● Design *(industry instructors)* ○ Advanced Design ○ Design Thinking ○ Work-based Special Projects for Community Businesses ● Coding *(industry instructors)* ○ Advanced Coding ○ Work-based Special Projects for Community Businesses ● Industry Certifications *(through USUE)* ○ Microsoft Certifications ○ CompTIA Certifications
Preparation for senior year ● Introduction to Pre-internship Experience ○ Professional Writing Internship ○ Interagency Projects in Design (client-driven) ○ Social Media Intern ○ Videography Intern ○ Informational Technology ○ Independent Projects ● Introduction to Community Social Justice Project	**Final preparation for workforce entry** ● Pre-internship Completion ● Apply for Internships (industry) ● Apply for Entry-level positions (industry) ● Applying to college; FAFSA; scholarship generation ● Professional Resume ● LinkedIn ● Design Critique Event ● Professional Design Portfolio ● GitHub (coding portfolio) ● Community Social Justice Project

Utah State University Eastern Certificate Programs

The number of job openings in the tech industry is steadily rising as Utah continues to position itself as a force in technology. Traditional college programs cannot produce qualified talent quickly enough to meet the tech industry's workforce demands. The Technology Rural Career Pathway program has been designed to fill this need, by including stackable college credentials earned through Utah State University Eastern. These credits will lead to the completion of either a Certificate of Proficiency or Certificate of Completion, targets preferred by both industry and education, as they allow students to enter the workforce faster.

While students are still in high school and enrolled in the FutureINDesign component of the program, they begin taking courses at Utah State University Eastern. This is an important aspect of the Technology Rural Career Pathway program, as it builds a bridge from high school to college. Pinnacle Canyon Academy has found that when students take classes at Utah State University Eastern while still in high school they are integrated into the college and are then more likely to remain enrolled and complete their education. Program coordinators bridge the gap during the student’s first year out of high school, providing needed support to help them remain in college. FutureINDesign will remain the support system once students go on to Utah State University Eastern, so that they have a total of three years of program support.

Students in the Technology Rural Career Pathway program will have the option to enroll in four different certificate programs at Utah State University Eastern after high school graduation. They are able to earn a Certificate of Proficiency in Web Business, Digital Design, or Software Development; or a Certificate of Completion in IT Support & Web Development. Credit requirements for the certificates are shown in the following table.

USU Eastern Software Technology Related Certificates					
Software Technology	Required Credits	Certificate	CE Credits*	Early College Non-CE Credits**	Additional Cost/Student for Non-CE Courses
Web Business	17	Certificate of Proficiency; some overlap with Software Development	6	11	$750
Digital Design	17	Certificate of Proficiency; stacks to IT Support & Web Development	6	11	$750
Software Development	29	Certificate of Proficiency	8	21	$1,485
IT Support & Web Development	38	Certificate of Completion; includes Digital Design	12	26	$1,755

*CE Credits = Concurrent Enrollment Credits at $10/credit paid by school

**Early College Credits = Non-CE courses paid for with SWI grant

Courses required for each certificate:

Web Business		
Prefix/Number	Course Title	Credit Hours
BCIS 1200	Introduction to Operating Systems **OR**	2
BCIS 2610	Administering WIndows Professional	3
BCIS 2988	Special Problems	3
BCIS 2210	Linux and Web Server Administration	3
BCIS 1350	Interactive Web Design	3
BCIS 2500	Web Business	3
BUSN 2201	Marketing Concepts	3
	Total	**17 / 18**

Digital Design		
Prefix/Number	Course Title	Credit Hours
BCIS 1300	Website Design	3
BCIS 1350	Interactive Web Design	3
BCIS 2430	Desktop Publishing	2
BCIS 2441	Graphics for the Web	3
BCIS 1340	Digital Video Production	3
BCIS 2988	Special Topics	3
	Total	**17**

Software Development		
Prefix/Number	Course Title	Credit Hours
BCIS 1200	Introduction to Operating Systems	2
BCIS 2210	Linux and Web Server Administration	3
BCIS 1350	Interactive Web Design	3
BCIS 2330	Business Data Communication Networks	3
BCIS 2610	Administrating Windows Professional	3
BCIS 2631	Introduction to Networking, Net +	3
BCIS 2651	Cyber Security	3
BCIS 0040	Introduction to Programming	3
BCIS 0081	Introduction to Mobile Application	3
BCIS 0540	Cloud Computing	3
	Total	**29**

IT Support and Web Development		
Prefix/Number	Course Title	Credit Hours
Digital Design		
BCIS 1300	Website Design	3
BCIS 1340	Digital Video Production	3
BCIS 1350	Interactive Web Design	3
BCIS 2441	Graphics for the Web	3
BCIS 2430	Desktop Publishing	2
	Subtotal	14
Application & Software		
BCIS 1410	Spreadsheet I (Excel)	2
BCIS 2420	Database I (Access)	2
BUSN 2988	Special Problems	3
BCIS 1200	Introduction to Operating Systems	2
	Subtotal	9
Common Core		
BUSN 1050	Business Math	3
BUSN 1091	Business Presentation	3
BUSN 2200	Business Communication	3
BUSN 2320	Small Business Management	3
BUSN 1405	Word Processing	3
	Subtotal	15
	Total	**38**

Industry Internships

No matter where they are along the Technology Rural Career Pathway, it's important that students are prepared for and connected to the workforce. To this end, we are partnering with Utah's Rural Online Initiative to connect students to the workforce. FutureINDesign's Workforce Development program is moving from direct learning to work-based learning, creating a young adult remote work internship pipeline that will lead students into the Rural Online Initiative. We have negotiated with the Rural Online Initiative to ensure that young adults are a priority aspect of their program.

Students in the program will receive training on remote work through the Rural Online Initiative. They will receive a Master Remote Work Professional Certificate upon completion, which will help employers recognize them as quality candidates. When a job is listed as remote the application rate increases dramatically, and employers are looking for reliable screening strategies to get sensibly through this surge of applicants. FutureINDesign will manage the internships internally, with students focusing on remote freelance opportunities.

Remote work opportunities are rapidly growing, and will offer multiple advantages to the Technology Rural Career Pathway program. In addition to providing higher-paying opportunities while remaining in their rural homes, remote work will enable students to have a higher degree of scheduling flexibility, which will enable them to work while pursuing their education. Remote work also offers many benefits for employers, including employee retention, cultural diversity, lower overhead, and environmental sustainability.

The Rural Online Initiative is a natural partner for the Technology Rural Career Pathway, because of their focus on building capacity in Utah's rural communities. Their program collaborates with public and private sector partners to facilitate education for online opportunities in remote employment, freelance work, and e-commerce. Rural Online Initiative objectives align closely with those of the Technology Rural Career Pathway, as both are working to reduce post high school relocation and increase median household income and quality of life for rural Utah residents.

The Master Remote Work Professional Certificate is a blended certificate course, combining online work with interactive workshops. The program is designed to equip workers with the tools and skills needed to develop a virtual career. It consists of nine core modules, delivered in a self-paced, online format:

- Module One: Work Day
- Module Two: Communication
- Module Three: Workflow
- Module Four: Productivity & Time Management
- Module Five: Teamwork
- Module Six: Compliance
- Module Seven: Critical Thinking
- Module Eight: Virtual Careers
- Module Nine: Remote Job Development

EXPECTED ENROLLMENT

Students are recruited to the Technology Rural Career Pathway program through outreach efforts with Pinnacle Canyon Academy and Carbon High School. Administration personnel at the schools identify underserved youth and FutureINDesign staff meet with those students to determine if the program would be a good fit. Program staff work closely with students throughout their time in the program in order to provide the support necessary for them to successfully remain and continue on the pathway.

Impact will also be achieved through expansion of the Technology Rural Career Pathway program. The program in Price will grow the number of students served with each new cohort, as the success of current students is shared with their peers. The partnerships that have been built with industry employers and Utah State University Eastern will also allow future expansion of the Technology Rural Career Pathway program to additional rural locations in Utah.

Program Name	Projected Yearly Enrollment	Completion Rate (90%)	Placement Rate (95%)
Technology Rural Career Pathway	50	45	43

INDUSTRY SUPPORT

The Technology Rural Career Pathway program has negotiated with and received approval from Utah's Rural Online Initiative to serve as an industry advisor for the program. Rural Online Initiative will work with the program to create virtual work opportunities in rural Utah. They will specifically work with the internship component of the program by facilitating education for online opportunities in remote employment, freelance work, and e-commerce.

Rural Online Initiative commits to providing industry support to the Technology Rural Career Pathway program in the following ways:

- Prioritize young adult internships for ROI's 2020 strategic goals
- Implement a young adult remote/freelance internship program with FutureINDesign
- Engage national technology companies to intern/hire young adults for remote positions in rural Utah
- Work closely with the Technology Rural Career Pathway team to prepare the internship project to scale and continue to add additional schools each year
- Provide remote work skill certification to enhance program participant's virtual employability

In-kind Contributions

Rural Online Initiative will be making an in-kind contribution valued at $800 per student by providing the Master Remote Work Professional Certification training. With an estimated 50 students completing the training per year, the total value of their contribution is $40,000 per year.

Pinnacle Canyon Academy, Carbon High School, Utah StateUniversity Eastern, and FutureINDesign sit on the Carbon County Economic Recruitment and Retention Committee with local industry leaders. The committee as a whole has committed to working with the FutureINDesign work-based learning program to provide both professional portfolio projects for students and to provide local internships ($10,000/year in in-kind value).

EMPLOYMENT OPPORTUNITIES

The tech industry is rapidly growing in Utah, with many open positions remaining unfilled. The purpose of the Technology Rural Career Pathway program is to train students to fill these positions, providing both a direct route to employment and a foundation that can be built upon with further education. Required education levels in the tech industry vary with an individual's position on the pathway. While an individual can pursue education all the way to a doctoral degree, the tech industry pathway has limited barriers to entry, with industry certification opening employment opportunities. Students leave the program with industry recognized certifications, ready to work.

The Technology Rural Career Pathway program focuses on the Software Development and Information Technology strategic industry cluster. It provides training for occupations such as Computer User Support Specialist; Computer Network Support Specialist; Web Developer; Computer Programmer; Information Security Analyst; Software Developer, Applications; Computer and Information Systems Manager; and Software Developer, Systems Software. This focus has the potential for a large statewide impact, as the tech industry was the #3 industry in Utah for both job gains and economic impact in 2018 (CompTIA Cyberstates 2019 report).

Utah Employment Outlook				
Occupation	Current Employment, 2016	Projected Employment, 2026	Projected Employment Growth, 2016-26	Projected Annual Job Openings
Computer User Support Specialist	8,750	12,280	+40%	1110
Computer Network Support Specialist	2,050	2,820	+38%	250
Web Developer	2,170	3,070	+42%	270
Computer Programmer	4,430	5,270	+19%	380
Information Security Analyst	400	600	+52%	50
Software Developer, Applications	9,880	16,930	+71%	1,550
Computer and Information Systems Manager	3,460	4,970	+44%	450
Software Developer, Systems Software	4,230	6,170	+46%	520

Source: Occupational Information Network (O*NET)

Utah Wages		
Occupation	2018 Annual Wage, 10%	2018 Annual Wage, Median
Computer User Support Specialist	$28,340	$45,890
Computer Network Support Specialist	$33,150	$58,210
Web Developer	$35,780	$66,640
Computer Programmer	$45,060	$79,750
Information Security Analyst	$47,890	$84,090
Software Developer, Applications	$55,090	$97,230
Computer and Information Systems Manager	$61,430	$119,410
Software Developer, Systems Software	$63,680	$102,640

Source: Occupational Information Network (O*NET)

PARTNERSHIP SUPPORT

Pinnacle Canyon Academy, Carbon High School, Utah State University Eastern, and FutureINDesign have a strong history of successful collaboration for students in Carbon County. In 2019, they collaborated on a Talent Ready Utah grant to receive funding for a Young Adult Tech Industry Career Readiness Pathway program that laid the foundation for the Technology Rural Career Pathway program. And in 2018 Pinnacle Canyon Academy, Utah State University Eastern, and Castleview Hospital collaborated on a Talent Ready Utah grant to start a medical pathway in Southeastern Utah. The pathway is thriving, with nineteen students placed in internships in the community. In addition to working closely with one another, the program partners have experience consulting and collaborating with state agencies and private corporations and businesses.

In order to achieve the goals of the Technology Rural Career Pathway program, they are dedicated to helping students and committed to work collaboratively and separately to provide them with job skills and work experience. They meet regularly to facilitate the program and are excited to share their expertise and add other rural schools to the Technology Rural Career Pathway program. Each of the partners has demonstrated their commitment to the partnership and to the community's youth, and are committed to continuing their commitments in the following ways:

Pinnacle Canyon Academy

- Lead agency and fiscal manager
- Work with Carbon High School, Utah State University Eastern, and FutureINDesign to implement the Technology Rural Career Pathway program
- Collect, collate and submit data as per the project target outputs and outcomes
- Participate in program coordination and quality improvement efforts
- Alter the master schedule to facilitate student participation as needed
- Participate in student outreach and provide recruitment coordination
- Work with additional rural high schools to ensure they are able to implement the Technology Rural Career Pathway to allow for program expansion

Carbon High School

- Work with Pinnacle Canyon Academy, Utah State University Eastern, and FutureINDesign to implement the Technology Rural Career Pathway program
- Provide all necessary transportation for students to take industry recognized tests
- Collect, collate and submit data as per the project target outputs and outcomes
- Participate in program coordination and quality improvement efforts
- Participate in student outreach and provide recruitment coordination

Utah State University Eastern

- Provide the mechanism by which high school students can earn university credit for satisfactorily completing designated courses
- Host the Technology Rural Career Pathway program, providing classroom and computer/technology lab space on campus
- Provide technology access for instructors and students
- Assist in the execution of the program by providing content expertise as needed and serving as role models for students enrolled in the training
- Review and approve FutureINDesign team members as course instructors for select design and technology innovation courses that the university will offer for concurrent enrollment credit
- Deliver pathways for students to continue their education upon high school graduation
- Work with Pinnacle Canyon Academy and Carbon High School to allow students to receive concurrent credit while in high school and provide a stackable credential at Utah State University Eastern in the second year of their studies

FutureINDesign

- Continue expansion of the Technology Rural Career Pathway program, adding additional students from Carbon High School, Pinnacle Canyon Academy, and additional rural high schools
- Collect, collate and submit data as per the project target outputs and outcomes
- Follow an outcomes framework built in partnership with Pinnacle Canyon Academy, Carbon High School, and Utah State University Eastern
- Coordinate closely with the Rural Online Initiative and tech industry employers

FUNDING REQUEST

One-Time Funding Request	
Equipment & Supplies	
Wacom Tablets	$24,000
Solidworks CAD Software Upgrades	$9,900
Work-Based Learning Lab	$24,000
Marketing & Outreach	
Website and Marketing Materials	$20,000
Other	
Professional Development	$7,000
Total One-Time Request	**$ 84,900**

Ongoing Funding Request	
Salaries	
Carbon High School Internship Coordinator	$5,600
Pinnacle Canyon Academy Internship Coordinator	$5,600
Carbon High School Data Specialist	$3,000
Pinnacle Canyon Academy Data Specialist	$3,000
Utah State University Eastern Design Instructor (part-time)	$26,000
Utah State University Eastern STEM Instructor (part-time)	$30,000
Benefits	
Carbon High School Internship Coordinator	$952
Pinnacle Canyon Academy Internship Coordinator	$952
Carbon High School Data Specialist	$510
Pinnacle Canyon Academy Data Specialist	$510
Utah State University Eastern Design Instructor (part-time)	$11,700
Utah State University Eastern STEM Instructor (part-time)	$13,500
Contract Services	
FutureINDesign Program Facilitator	$15,950
FutureINDesign Program Student Support	$27,450
Other	
Equipment & Supplies	$2,500
Marketing & Outreach	$5,000
Utah State University Eastern Tuition for Early College Non-CE Courses	$40,000
CompTIA & Microsoft Certifications	$4,500
Indirect	$10,000
Total Ongoing Request	**$ 206,724**

JUSTIFICATION

One-Time Funding

Equipment & Supplies

- Carbon High School will add twenty Wacom tablets to their Design/CAD classes and will upgrade twenty computers with the industry desired Solidworks CAD Software.
- FutureINDesign's work-based learning lab is currently donated by Utah State University Eastern, but it needs industry level computer devices and a simulated agency work environment that students will use for work-based learning projects.

Marketing & Outreach

- Pinnacle Canyon Academy, Carbon High School, FutureINDesign, and Utah State University Eastern will update their websites regarding the program, in order to attract local and national industry leaders to offer internships and apprenticeships. Additionally, FutureINDesign's work-based learning program will update its website and social media to engage local industry for software, design, and IT needs for work-based learning projects.
- Funds will also cover traditional marketing outreach materials, such as tabeling for recruitment of students and industry partners.

Professional Development

- Carbon High School IT teachers will receive CompTIA Teaching Certifications.
- Pinnacle Canyon Academy teachers will receive STEM Certifications, in order to receive a national STEM designation for a rural Utah school.

Ongoing Funding

Salaries

- Carbon High School and Pinnacle Canyon Academy will both add Internship Coordinators. These positions will be filled by existing staff members at 10% FTE.
- All members of the partnership will prioritize data collection and analysis as a critical component of the program. Carbon High School and Pinnacle Canyon Academy have both committed to implementing part-time Data Specialists to work with data collected from all partners. These positions will be 5% FTE.
- Utah State University Eastern Design Instructor (part-time) will teach web design, graphics, networking, and digital media.
- Utah State University Eastern STEM Instructor (part-time) will teach Early College IT and software classes dedicated to software technology and engineering, and will use software technologies for motor controls, switches, remote access, and virtual reality.

Benefits

- Carbon High School Internship Coordinator - 17%
- Pinnacle Canyon Academy Internship Coordinator - 17%
- Carbon High School Data Specialist - 17%
- Pinnacle Canyon Academy Data Specialist - 17%
- Utah State University Eastern Design Instructor - 45%
- Utah State University Eastern STEM Instructor - 45%

Contract Services

- FutureINDesign Program Facilitator - Oversees work-based learning program. Ensures program consistency by developing overall curriculum map and managing program and student evaluation. Builds partnerships and grows program capacity.
- FutureINDesign Program Student Support - Runs day-to-day program, coordinates industry instructors, leads soft skills classes, and monitors student progress. Connects students to outside resources as needed.

Other

- Equipment & Supplies: Miscellaneous supplies for student's professional portfolios; repair and maintenance of lab equipment.
- Marketing & Outreach: Ongoing marketing of program to students and potential industry partners.
- Utah State University Eastern Tuition for Early College Non-CE Courses: A main focus of the Technology Rural Career Pathway program is to provide a bridge to completion, which is accomplished by providing funding for more Early College courses while students are still in high school. Currently students are limited by affordability to only taking the courses that qualify for Concurrent Enrollment funding. Providing funding so that students can also start taking Early College Non-Concurrent Enrollment courses while still in high school increases the likelihood that they will remain enrolled at Utah State University Eastern past high school. Early College courses will be offered at the new Utah State University Eastern CTE tuition rate.
- CompTIA & Microsoft Certifications: Course and exam fees for universally recognized industry certifications. Students earn these certifications through Utah State University Eastern while participating in FutureINDesign Workforce Development program.
- Indirect: Pinnacle Canyon Academy will be the fiscal manager for the grant, and these funds will cover a portion of the additional costs for the business manager to manage the grant, the accounts payable, and any additional auditing costs. Pinnacle Canyon Academy will cover the remaining additional costs.

Utah State University EASTERN

Career and Technical Education

Roberta Hardy, Founder and Principal
Pinnacle Canyon Academy
210 N 600 E
Price, Utah 84501

January 2, 2020

Dear Roberta Hardy,

I provide this letter of commitment in support of the Pinnacle Canyon Academy's proposal for Strategic Workforce Initiative (SWI) funding. I want to clearly express USU Eastern's support and engagement for your proposal to advance the secondary to post-secondary pathway for Software Development and Information Technology. I understand that Pinnacle Canyon Academy is the lead institution for the proposal in cooperation with the Carbon School District and private industry partner *FutuerINDesign* (FIND).

As you realize, USU Eastern has been actively engaged the secondary schools in our community since our inception. As the local higher education partner, we provide abundant access to concurrent enrollment courses in both General Education and Career and Technical Education. It is evident that USU Eastern has forged an educational partnership essential to community economic development and social advancement based on mutual goals for rural Utah.

To meet our shared goals, USU Eastern is committed to providing access to four unique and distinct software development and information technology certificate programs. Based upon local workforce data and in alignment with industry advisory groups, USU Eastern has developed Certificate programs in the area of: (1) Digital Design, (2) Web Business, (3) Software Development, and (4) IT Support and Web Development. Each of these programs are competency-based and stackable from a Certificate to an Associates of Applied Science.

The four software development and information technology related Certificate programs have a built-in concurrent enrollment component. The number of approved concurrent enrollment credits varies for each Certificate. To complete the Certificates will require on-going, external support. With SWI funding, USU Eastern can provide the courses beyond approved concurrent enrollment courses for Certificate completion.

As we have discussed and outlined in the proposal, USU Eastern will hire part-time instructors for software development and STEM engagement, specifically for the advancement of engineering technology as well as information creation and management. USU Eastern is also committed to providing In-Kind resources in terms of classroom and lab space, technical support for program implementation, and program promotion through our marketing channels.

USU Eastern is aware of your past success in initiating programs to reach underserved youth and adults. I am convinced the partnership model of community building through software development and information technology can revitalize a part of Utah hit hard by declining energy production and an opioid epidemic. Working with FIND as our private partner on the frontline of economic advancement and societal improvement, USU Eastern is committed to providing an innovative pathway in the emerging focus of software development and information technology.

Sincerely,

Gary Straquadine, PhD
Associate Vice President
Career and Technical Education

RURAL ONLINE INITIATIVE

December 31, 2019

Roberta Hardy
CC: Nicholina Womack
Attn: Strategic Workforce Initiative Committee
Pinnacle Academy

Dear Roberta Hardy:

I write on behalf of the Rural Online Initiative in support of the Pinnacle Academy, FutureINDesign, Carbon High school, and Utah State University Eastern Strategic Workforce Initiative proposal.

The Software and Information Technology Industry Cluster project is in strong alignment with the mission of the Rural Online Initiative to create virtual work opportunities in rural Utah counties, and position Utah at the forefront of the prosperous future of remote work opportunities in the technology and design industry. The focus on creating an ecosystem of a remote workforce along Southeastern and Southern Utah will provide thriving and gainful employment so Utah's rural young people will not have to leave their communities to have a stable career. Rural Utah will once again lead the state and Western Region in entering the global marketplace and will build economic sustainability for their struggling communities.

The Rural Online Initiative (ROI) is a catalyst for capacity building in Utah's rural communities. Our program collaborates with public and private sector partners to facilitate education for online opportunities in remote employment, freelance work, and e-commerce. In our first year of operation, ROI was responsible for an average decrease of unemployment rates of 0.2% across 10 rural Utah counties. Impact is expected to increase exponentially with each year of operation. We are confident that our success will be greatly enhanced by our partnership with the Software and Information Technology Industry project, specifically in our objective to diversify participant profiles in 2020 and beyond.

The Rural Online Initiative will work closely with the Software and Information Technology Industry project to do the following:

- Make Young Adult Internships a strategic priority for ROI's 2020 goals
- Work with FutureINDesign to implement a Young Adult Remote/Freelance Internship program
- Engage national technology companies to intern/hire young adults for remote positions in rural Utah
- Work closely with the FutureINDesign team to prepare the internship project to scale their efforts to continue to add additional schools each year
- Provide remote work skill certification to enhance virtual employability

We look forward to working with you in this exciting project to further elevate Utah's global presence in the technology industry, provide opportunities for the bright young people of rural Utah, diversify our workforce, and give rural Utah a running effort in the growing economy.

Sincerely,

Laurel Farrer
Consulting Strategist & Program Designer, Rural Online Initiative
CEO, Distribute Consulting

FutureINDesign
Technology in the Margins

Date December 31, 2019

Roberta Hardy
Attn: Strategic Workforce
Initiative Committee
Pinnacle Academy

Dear Committee:

FutureINDesign (FIND) is a 501(c)3 STEAM, Career Development program for low-income and underrepresented young adults and adult learners. FutureINDesign's mission narrows the digital literacy gap in Utah, and reduces the constraints of intergenerational poverty through hands-on job training in key technology areas and social skills to create a pipeline of talent for Utah's growing STEAM workforce.

FutureINDesign is honored to expand its partnership with innovative and forward thinking schools like Pinnacle Academy, Utah State University and Carbon High school. As FIND's Young Adult Career Readiness Program as moved through the pilot year, we have already seen great success. From student retention and attendance, to their quick grasp of skills and knowledge, and the community and industry's involvement to support the mission and vision of Pinnacle and FutureINDesign.

FutureINDesign is committed to providing the highest quality work-based programming and curriculum. We work closely with industry to deliver current and in-demand skills Computer Science, Design, and IT. Through our partnerships and industry instructors, our students gain real-world experience in a simulated work environment -- solving real time problems through hands-on learning. The professional projects they complete are used for their own professional portfolios, they in turn will use in the workforce.

FutureINDesign has an amazing working relationship with Pinnacle Academy, and Utah State University - Eastern. We are thrilled and confident the program expansion will create a thriving future for rural Utah, and close the cycle of poverty and inequity.

We look forward to expanding this exciting project to increase the diversity our workforce and fulfill the demand for talent in our community and achieving equity.

Sincerely,

Nicholina Womack

Nicholina Womack
CEO-Founder

Strategic Workforce Investment Grant Proposal

Applicant Name:	Snow College
Primary Contact Persons:	Michael Snyder (mike.snyder@snow.edu)
Project Title:	Snow College Center for Data Science
Strategic Industry Cluster	Information Technology
Funding Level Request:	$225,982

Projected Outcomes:

- Expand rural Utah's entry-level Data Science workforce pipeline
- Expand rural Utah's pipeline of students entering Data Science related certificate and degree programs
- Expand tech industry networking options for Utah's rural students
- Increase the number of well-trained employees to fill the growing job gap in Data Science
- Increase partnerships between industry and Snow College to soften students' transition between college and industry
- Partner with CTE programs in the regions' K-12 schools to increase the number of students enrolling in Data Science related certificate and degree programs
- Vertically align curriculum between K-12 tech programs and the various degree programs to provide Data Science related certification to students from all relevant disciplines

Introduction

Utah's economy is virtually unmatched nationwide. According the Bureau of Labor Statistics, Utah's October 2019 unemployment rate is 2.5%, tied for second place with North Dakota (BLS, 2019). In August 2019, Utah had the highest job growth in the country: 3.0 percent overall (and 3.4 percent for private sector job growth) (Hyatt, 2019). Moreover, Utah's Information technology (IT) sector continues to outpace projections, with Utah experiencing the 2nd highest growth rate in tech jobs between 2008 and 2018. Only Washington, headquarters of Amazon and Microsoft, had higher growth. Utah continues to garner national attention as the "Silicon Slopes" community draws in greater interest from businesses, both local and national. However, according to Clint Betts, CEO of Silicon Slopes, "there are rain clouds" ahead (Nielsen, 2019). A shortage of qualified IT workers can be seen statewide, due to Utah's high growth and low unemployment. This shortage is particularly acute in rural areas, where the tech sector has traditionally been weak. In March 2019, there were 13,750 jobs in the information sector in Utah County – an 8.5% increase from last year. In Sanpete County, which borders Utah County to the south and is home to Snow College's Ephraim campus, there were only 190 jobs in the information sector – a 5.0% increase from last year. At an annual growth rate of 5.0%, it will take 35 years for Sanpete County to reach 1,000 tech jobs. Yet, in the Provo-Orem Metro area (which includes Juab County), it is predicted that demand for jobs in the information sector will increase 44% from 2016 to 2026. Data science jobs are part of this growth.

The differences between rural and urban employment growth should come as no surprise. The tech industry is dependent on "intense agglomerations of highly skilled workers" (Atkinson,

Muro, & Whiton, 2019). According to the Brookings Institute (2019), "neither market forces nor bottom-up economic development efforts" are likely to change these deeply seated dynamics, suggesting that structures with state support are the only option to diffuse tech talent throughout the state.

The motivation to support these structures is ubiquitous. Ryan Smith, CEO of Qualtrics, noted that they spent $300 million outside of Utah due to a lack of qualified talent (Scribner, 2017). The company's recent $8 billion merger with multinational SAP is only expected to increase this demand (Nielsen, 2018). Stagnation in this burgeoning industry is imminent if the causes of Utah's IT workforce gaps are not resolved. Myriad causes exist; the three we address in this grant application are (1) gaps in training, (2) pipeline issues, and (3) the growing need to decentralize the rapidly growing Wasatch Front tech workforce to mollify sharp cost of living increases while simultaneously addressing stagnation or deterioration in Utah's rural economies.

Snow College already has a successful web development program, but discussions with the Software Engineering department's advisory board suggest that we need to expand into data science to remain competitive. Data science is a relatively new term for the myriad jobs dealing with data. The most educated data scientists will implement artificial intelligence techniques like machine learning and data mining, a fast-growing sector that this grant proposal addresses. As an illustration of the growing need, a recent Google search pulled up more than 100 job openings or internships for data scientists. Most of these jobs require at least a bachelor's degree, and many of them pay more than $100,000 per year.

Degree Pathway	Type of Job	Number of Available Jobs
Bachelor's in Software Engineering with an Emphasis in Data Science	Number of Data Science Job Listings in Utah	112

Table 1: A listing of the number Utah of jobs pertaining to data science found in a recent Google search. These listings included job opportunities that had been posted within approximately five months prior to December 17th, 2019. Some of the jobs required additional schooling by way of a Master's degree or Ph.D.

However, data science jobs go beyond these high-level techniques. There are a number of careers that require some knowledge of databases, statistics, and data analysis. Careers that are not specific to the data science field but utilize data science knowledge include the following:

- Web developers
- Computer support specialists
- Health care professionals
- Technologists and technicians in numerous areas
- Educators

As an example of data science skills being utilized in a non-technology field, the State of Utah is rolling out a series of school climate surveys to school districts across the state. On a local level, participating district employees are unlikely to have data science training. Thus, they will be unable to rigorously analyze and make inferences about the results of these surveys. This may lead to faulty policy decisions. These dedicated employees do not need graduate level data

science courses, but they do need some level of data science training. As data has become ubiquitous, the number of similar positions will only increase the demands on colleges and universities to provide data-savvy employees. In this proposal, we suggest that an expanded offering of data science courses, faculty internships with industry, and a robust student mentorship program will help make Snow College a tech hub for rural Utah. Additionally, this program will help fill the many data science related openings currently on the market.

Snow College is in a unique position and location to address the issues outlined above. No other rural college enjoys Snow College's proximity to the Wasatch Front. We are particularly close to those companies most interested in IT and data science students. In terms of distance from the Silicon Slopes, Dixie State College is 273 miles away and Southern Utah University is 223 miles away, while Snow College's Ephraim campus is only 89 miles away. This allows convenient access to employers' headquarters to which telecommuting employees must make periodic visits. Our proximity also allows industry to visit us, as is currently happening with our monthly software engineering seminar. Snow College produces excellent engineering students. Small class sizes allow us to provide the personalized training necessary for a rural population that is *not* steeped in technology. In fact, Snow has decades of experience in this regard. Snow's size also makes it nimble, allowing it to adapt to a rapidly changing market. Additionally, Snow College's faculty specialize in teaching rather than research. This means we can learn and teach the latest technology without concern that it would detrimentally affect our research output.

Gaps in Training

According to *The Economist*, data is the new oil. This statement is becoming a reality within the IT sector, where data science skills are in extremely high demand (See Table 1). Additionally, data science is listed in Glass Door's top 25 highest-paying jobs and it is recession proof, according to Yahoo! News. Moreover, as listed in Table 2, below, an individual trained as a data scientist has a skillset in high demand across a wide spectrum of careers including data analytics, artificial intelligence (machine learning), database architect, etc. Leveraging the comprehensive nature of a data science degree, Snow College will create "on-ramps" and "off-ramps" between academia and industry via certification and/or degree. Although the number of schools offering data science programs is growing, as of 2018, only about 30 two-year colleges had a data science program. The numbers are proportional at the university level. One reason data science programs are sparse is due to the lack of training in current faculty (Booz, Allen, Hamilton, 2015). This is because the application of data science to industry problems is so new that the demand for trained faculty has yet to catch up. Thus, serious and continuing professional development will be necessary to prepare faculty to teach these emerging topics.

Data science programs that do exist often focus on high-level topics. However, as discussed previously, the market is far broader, requiring lower-level skills that can be used by a wider audience. According to Steven Miller, IBM Analytics, and Debbie Hughes, Business-Higher Education Forum, "Data democratization impacts every career path, so academia must strive to make data literacy an option, if not a requirement, for every student in any field of study." Reaching this broader audience will require innovation in the way data science topics are taught, but the payoff will be planting a seed of innovation across industries who currently think that data science is only for "big tech" companies like Google, Amazon, and Facebook. Taking a broad approach to training students in data science will give Utah the opportunity to gain a

competitive advantage, especially in light of Utah's growing tech economy. In order to exploit this advantage, Utah will need to invest in higher education. Motivation to invest in Utah's data science programs is provided by the information in the following table, which shows increases in employment requiring certain data-centered skills.

Data-Centered Skills	Percentage Increase in Employment in 2016
Clinical Data Analysis	54%
Data Science	40%
Quantitative Data Analysis	38%
Data Visualization	31%
Data Engineering	28%
A/B Testing	22%
Machine Learning	17%

Table 2: Growth in data science careers by skill type. (Data from The Quant Crunch: How demand for data science skills is disrupting the job market).

Solution:
Build a truly interdisciplinary data science program at Snow College that will serve students from across the college, not just software engineering students. This program will build relevant courses within each of our academic divisions and provide faculty professional development, faculty mentorship of students, and outreach and marketing. It will be a powerhouse of innovation, helping graduating students from nearly all disciplines become more competitive in the workforce.

Mathematics and statistics are two of the most interdisciplinary subjects on a college campus. Economics, finance, psychology, sociology, and all of the "hard sciences" have applications of math or stats. Computer science, math, and stats provide the underlying theory of data science. For this reason, data science will permeate the college curriculum in the same way math and stats do now. Thus, pathways into data science careers from multiple disciplines are necessary to meet future demands. Specifically, two tiers of data science courses will be offered, each with a terminal certificate or degree. The lower tier will focus on skills like data management and basic statistical analyses. These skills are applicable to problems in nearly every sector of industry and government. The upper tier will teach students more advanced data science skills like data mining, machine learning, and advanced visualization techniques. In addition to leveraging existing courses, several new courses will be offered. The demand for these skills is rapidly

increasing, as is the cross-section of industry where they are applicable (Booz, Allen, Hamilton; Hughes et al., 2017).

To teach these emerging skills, faculty will need to constantly update their own knowledge and abilities. Snow College will partner with industry to identify strategic faculty internships. These internships will not only provide faculty with hands-on experience applying the concepts they will later teach but will also create a cultural interlacing effect between academia and industry. These experiences will directly impact student understanding of industry expectations and provide rich "real-world" experiences. Moreover, this will improve faculty members' abilities to mentor and advise students.

Pipeline Issues

A scarcity of training and networking options pushes lucrative tech careers out of reach for most rural Utahns. Moreover, this scarcity means that technology occupies a blind spot in rural areas, leading to an increasing inertia away from technology. A recent survey of students at Snow College unexpectedly revealed that 68% of incoming students were unaware of data science as a field.

Rural Utah also contains a large number of prospective non-traditional students, as their industries face the peril of obsolescence. For example, it is predicted that transport services will be automated via self-driving trucks. A conservative estimate by the Wall Street Journal revealed that 300,000 trucking jobs will be lost within the next 25 years (Smith, 2018). Utah has a high concentration of heavy and tractor-trailer truck drivers, and the Central Utah region (where Snow College is located) has the highest concentration in Utah (BLS, 2019).

Compounding these issues, economies of scale work to build inertia in the Wasatch Front tech workforce away from rural communities. For example, from 2010-2018, Utah County added about 42 residents to every 1 resident added in Sanpete County. In terms of absolute growth over the same period, Utah County added 125,770 residents, while Sanpete added 3,055. Additionally, much of the Wasatch Front growth has been in the tech industry. For this reason, a student at a city school may know or be related to several people who work in the tech industry. These individuals create a network that increases the flow of quality information to the student. This provides context in which the student can place the tech industry. Such context provides motivation and makes the industry seem less daunting.

These networks foster entrepreneurship, as students see problems that their learning can solve. For example, a student from a South Jordan high school recently developed a "smart" sensor system that determines if the school needs to go on lock down. Another example includes several Snow College software engineering students who approached the faculty with solutions that could increase efficiency for the college. A Snow College Center for Data Science would expand this entrepreneurial spirit throughout rural Utah. Additionally, embedding local K-12 students and teachers in the Snow Data Science network will transmit tech career and entrepreneurship potential to earlier grades. This will increase the flow of students entering the Snow College data science program. If these outcomes are to be achieved, fortified rural networks, meaningful outreach, and quality training must be realized to decrease rural inertia away from tech careers.

The networks that students and early career professionals create are of paramount importance. These networks often lead to success or stagnation, depending on network quality. Moreover, in technical fields, networks serve as a clearinghouse of problem solving. They increase efficiency and innovation. The three characteristics of quality social networks are (1) appropriate flow of high-quality information, (2) a positive feedback loop via rewards for good work and punishment for bad work, and (3) trust, or "the confidence that others will do the right thing" (Grannovetter, 2005).

The quality and flow of the information available to an individual is directly impacted by the quality of their social network. The internet offers a "fire-hose" of information through which answers to questions are opaque to the novice who lacks context. Moreover, it has been shown that individuals "do not believe impersonal sources and instead rely on people they know." In rural communities, the problem is too few "knowledgeable others" are available to students. Faculty fill this role to a large extent. In fact, Snow College's small size allows the faculty and students to build uncommon rapport. However, between classes, office hours, and service to the college and community, too few hours are spent mentoring students. Moreover, students need input from industry. Often family and friends fill this role in more populated areas. Rural students do not have these ties. Thus, a venue fostering networks between students, faculty, and industry is necessary to promote tech jobs within Snow College's services area.

Finally, quality training in technical fields must contain relevant content. A technical interview is part of the hiring practices of technology firms. Students are demanding that colleges provide content that will meet the demands of industry. Recently, 73% of Snow College students responded that they were somewhat or very interested in data science training. The addition of an emphasis in data science to the Snow College software engineering degree will meet this demand. Meeting this demand will also grow Snow College enrollment. To ensure the emphasis remains relevant, an advisory committee will be established to ensure that the data science program and related courses continue to teach those skills that will be most beneficial to students. Moreover, the advisory committee will strengthen ties between Snow College faculty and industry. These ties will strengthen the network between students, faculty, and industry leading to further innovation in instruction.

Solutions:

Mentorship and Networking

Create a Snow College Center for Data Science, where networking, outreach, education, mentorship, and interaction with industry combine to mentor students and seed tech industry growth in Snow College's service area. It has been shown that having weak ties to a large number of individuals increases the flow of more novel information (Granovetter, 2005). This is critical to learning, innovation, and entrepreneurship. However, the ability to convert that novel information into a product requires deeper connections. We will leverage these facts by providing a space where students, industry, and faculty can work together. This space will organically encourage informal interaction between these three groups. It will also provide an ideal space for more personal student mentorship by faculty. This intentional logistical redesign will put internships closer to the students' educational experience and help the students connect the value of their education to the workforce. Additionally, by having faculty members mentor the student, industry perspectives and culture will filter through to the academy. This will

increase efficiency in content delivery and boost the relevance of the curriculum. Because this center will be the repository of tech knowledge for the Snow College service area, the center would also be responsible for Data Science outreach and marketing.

Robust Outreach

A collaboration between Juab, Millard, and Sanpete counties is already under construction. Adding Piute, Sevier, and Wayne counties, a robust outreach program will be created to increase awareness of data science careers in K-12 students and give them confidence that these careers are attainable. K-12 teachers will be central to this outreach effort. Daily contact is necessary to build the confidence necessary for students to be successful in a data science program. For this reason, K-12 teachers within Snow College's service area will be invited via broadcast to join Data Bytes, our faculty data science professional development program. We will hire a staff member to conduct outreach and manage the cloud architecture necessary for the program. This individual will manage coding camps during the school year and over the summer. They will also be involved in assisting facilitators of concurrent enrollment courses that teach coding skills. For example, the Intro to Data Science course will be offered via concurrent enrollment. Past experience has shown that facilitators are not prepared to address technical questions from students. Moreover, as discussed in the networking section, rural students do not have a network with the ability to answer these questions. Thus, the outreach staff member will visit schools on a regular basis to help address these questions.

Outreach and mentorship efforts will increase the number of students graduating from Snow College with a data science degree or certificate. A conservative estimate from a recent survey of Snow College students suggested that each degree/certificate program will graduate 6-7 students, once the program is fully implemented and expanded to all divisions. It is anticipated that these numbers will increase as the employment-value of the programs are realized. For the first year of the program, we expect the following outcomes:

Number of students in concurrent enrollment program	5
Number of students enrolled in 4-year track	5
Number of students enrolled in 2-year/certificate track	5
Number of students placed in internships	2

Table 3: Anticipated outcomes for 20-21 academic year.

To ensure the lasting value of a Snow College data science degree or certificate, we will develop articulation agreements with other institutions throughout the state.

Align Curriculum and Establish Articulation

In addition to networking, mentorship, and outreach efforts, the Snow College Center for Data Science will vertically align curriculum across Snow College and with K-12 schools in our service area. At Snow College, we will incorporate the myriad disciplines in which data science is used (e.g., psychology, sociology, economics, software engineering). Existing infrastructure will be reorganized and a minimal number of courses, suites of low- and high-level data science courses, will be designed to increase the number of pathways into data science careers. In particular, a Intro to Data Science course will be offered via concurrent enrollment. Students who take this course will be ready to enter one of the low-level data science pathways, each of which

will include data science courses appropriate to the academic division in which the pathway is situated. The suite of upper-level courses will prepare students to apply data mining, machine learning, and big-data visualization techniques—all of which are increasing in demand throughout industry. These courses will form an emphasis in the current software engineering bachelor's degree.

Additionally, in consultation with industry, certificates or digital badges will be created to signify that students have completed any one of these suites of data science courses. This will make students outside the traditional IT track more competitive in the workplace. It will also help fill the mass of current data science related openings within industry and increase the pipeline of students into further IT training.

In the future, we plan to establish articulation agreements with Utah State University to ensure that students can easily transfer. This will help students avoid the necessity of repeating coursework, which will allow them to more quickly enter the workforce. It will also reduce waste for students and the state of Utah.

Decentralizing Utah's Tech Workforce

States that have experienced the economic boom of the tech industry but have not addressed housing costs have experienced detrimental economic effects. For example, the number of individuals and families experiencing homelessness has skyrocketed along the West Coast. In 2018, 129,972 individuals experienced homelessness in California alone. A lack of infrastructure magnified the tragedy, leaving 72%, or 89,543, of these individuals unsheltered. The implication is that if a diffusion of tech talent is not realized, housing prices along the Wasatch Front will continue to rise and Utah will suffer the same fate. Meanwhile, Utah's rural economies are currently experiencing stagnation or deterioration. These two problems provide an opportunity for Utah to innovate around the idea of telecommuting. An infusion of high-paying jobs throughout rural Utah will reverse rural economic deterioration while simultaneously decreasing pressure on the Wasatch Front housing market.

One of the problems with telecommuting from a rural area is a disconnect from industry and the Wasatch front tech network. Another is the basic economic theory of economies of scale. Among other economic effects, this theory explains the natural tendency of industries to collocate when their workforce shares intersectional interests. In particular, collocation provides a more competitive pool of employees, thereby decreasing costs. Telecommuting seems like the natural response to the competing economic interests of collocation and the impending housing crisis. However, without significant investment in infrastructure throughout rural Utah, it is unlikely that industry will plant roots so far abroad (Atkinson, Muro, & Whiton, 2019). Significant hubs of industry, like the Snow College Center for Data Science, outlined in the "Pipeline Issues" above, form the seed that will grow industry outside of the Wasatch Front. This will spread the economic benefits of a high-paying industry while keeping housing costs reasonable. These two taken together will allow the Utah tech industry to keep wages lower making the Utah tech industry more competitive than other states.

In addition to the Snow College Center for Data Science's human infrastructure, a physical space will provide a centralized hub of IT-related work within Snow College's service area. Shared

workspaces are growing in popularity as tech entrepreneurs and gig work continue to increase. Among other features, these spaces offer lower costs, fewer responsibilities, networking opportunities, and support for startups. Only 14 documented shared workspaces existed in 2007. By 2020, projections are that about 3.8 million people will use more than 26,000 shared spaces (Forbes, 2017). They provide precisely the setting necessary to foster the type of networking, mentorship, and entrepreneurship outlined above. For this reason, Snow College is planning on working with Silicon Slopes to build a physical space to meet these needs.

Snow College Data Science On-Ramps & Off-Ramps

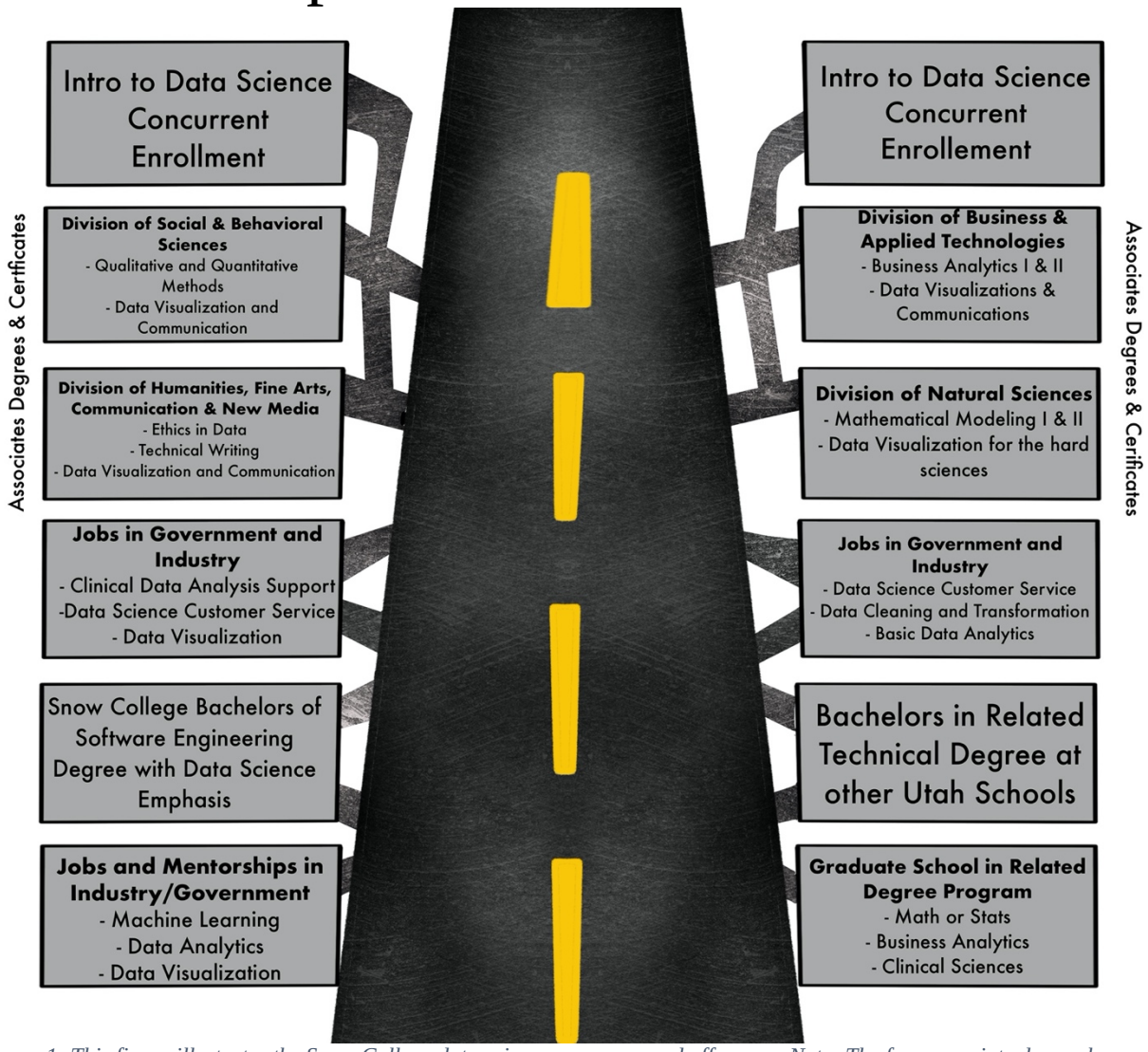


Figure 1: This figure illustrates the Snow College data science on-ramps and off-ramps. Note: The four associate degree boxes include all five academic divisions. Fine Arts & Humanities have been combined into one box.

The on-ramps and off-ramps in the Snow College data science program begin with an Intro to Data Science course. The following gives a general overview of the Snow College Data Science pathways.

Introduction to Data Science
This course will be designed to teach "data science for all" students by introducing the basic elements of data science: experimental design, data collection, extraction-transformation-loading of data (ETL), basic control structures of programming, basic statistical analysis, visualization and presentation of analyses. This course will serve as the launching point for students interested in data science as a career.

Associates Degrees & Certifications
Many of the most valuable tech industry certifications must accompany at least an associate degree (e.g., Oracle Database certifications). Therefore, it is anticipated that most students will complete an associate degree prior to work in industry. Thus, each of the five Snow College academic divisions will have a data science certification at the associate degree level.

Bachelor's Degree in Software Engineering with an Emphasis in Data Science
The courses associated with the emphasis in the software engineering degree include data mining, machine learning, and advanced data visualization. Students who complete this degree will be highly competitive in a field that is in high demand and rapidly growing.

Mentorships & Industry Employment
"Off-ramps" will occur at the end of both the associate and bachelor's degrees. At these points, students will have the option to apply for industry employment or mentorships. If they qualify for a mentorship, Snow College will assist in this process with a faculty member acting as mentor.

Graduate School
Students who complete the bachelor's in software engineering with an emphasis in data science will be well qualified for a variety of graduate programs, particularly if they accrue some domain knowledge outside of software engineering along the way.

Design & Management Timeline
The following table organizes the anticipated timeline of events for the data science program in the existing software engineering bachelor's degree and the concurrent enrollment data science course. Also included are the myriad support activities to ensure a successful program. An extended timeline that includes the data science programs in the remaining academic divisions can be found in the appendix to this document.

Activity	Fall '19	Spring '20	Summer '20	Fall '20	Spring '21
Develop Data Bytes Faculty Professional Development	X				
Develop Student Industry Seminar Series	X				
Develop Partnership with School Districts in the Snow College Service Area	X	X	X	X	
Develop Data Science Steering Committee	X	X			
Work with State School Board to Approve Concurrent Data Science Course		X	X	X	
Train K-12 Teachers & Implement Concurrent Data Science Course				X	X
Approve New Data Science Emphasis in Software Engineering Bachelor's		X			
Develop Curriculum for New Courses			X	X	X
Pilot New Curriculum				X	X
Update Curriculum and Adjust Courses		X	X	X	X
Develop Plan for Shared Space		X	X	X	
Align Curriculum Between Snow College and K-12		X	X	X	
Meet with Advisory Team		X	X	X	X
Hire New Faculty		X	X		X
Develop Student Mentorships				X	X
Develop Faculty Internships			X		
Hire Outreach/Lab Coordinator		X	X		
Purchase New Equipment			X	X	X

Table 4: Timeline of events related to the development of the SWI funded portion of the Snow College Center for Data Science. Note: for a timeline of the full program, see the Appendix.

Budget Request

The following table gives the budget for the data science emphasis in the software engineering program along with the concurrent enrollment "intro to data science" course. An extended budget that includes the data science programs in the remaining academic divisions can be found in the appendix to this document.

Program Expenses (Ongoing, except where noted)	Grant Request	Total
Engineering Faculty (1.5 FTE)	$94,213 per FTE (starting salary plus 20% and benefits)	**$141,320**
Rationale: Engineering faculty are overloaded with courses at this time. Thus, this faculty position will ensure that the data science courses will be able to meet student demand. Moreover, the new faculty will be expected to foster relationships with industry to induct industry projects into their curriculum and as part of their mentorship duties. It is anticipated that each data science faculty member will mentor at least 2-3 students per year. This position will require a faculty with the requisite skills will be highly sought after by industry. Thus, we are requesting salaries that are 20% higher than the Snow College starting faculty salary.		
Course Release (5 Courses, one-time funding)	$12,000 (3 credit equivalent release per course X 5 courses X $800 per credit hour)	**$12,000**
Rationale: Faculty will need to develop the data science courses. None of the proposed courses have been taught at Snow College. The five engineering course releases will cover development of the following courses: intro to data science, linear and non-linear regression, data mining, machine learning, and data visualization and communication.		
Lab/Outreach Staff (1 FTE)	$67,662 (Salary and benefits based on average salary of current lab management staff)	**$67,662**
Rationale: With nearly 70% of incoming freshmen unaware of data science as a field, substantial educational outreach and marketing will need to be implemented to ensure the success of the program. Additionally, outreach staff will manage new cloud resources necessary for "big data" analytics. This individual will also be responsible for assisting students in a tutoring lab and assisting students in concurrent enrollment courses.		
Equipment – Cloud computing resources	$5,000	**$5,000**

Rationale: The Software Engineering degree with an emphasis in data science will require the use of cloud resources and the requisite computational power. Also anticipated are increases in computer lab use across campus.		
Total		**$213,982 (ongoing)** **$12,000 (one-time)**

Table 5: A list of budget expenses along with justification for the SWI funded portion of the Snow College Center for Data Science. Note: to view the budget for the full program along with justification, see the Appendix.

In-Kind Commitments and Leverage

As is demonstrated in the attached letter from President Bradley Cook, Snow College is committed to the success of a data science program. Snow College plans to contribute the following resources to ensure its success:

- Program supervision: Provost Steve Hood and Mike Snyder, instructor, will provide oversight and support as the data science program takes shape. In particular, they will provide direction and management for curriculum development, outreach and marketing, and the development of partnerships with industry and educational partners.
- Award supervision: Snow College's grants officer and financial compliance officer will oversee the preparation and submission of any required performance or financial reports.
- Marketing: The College will advertise our data science program on our College web page and in printed materials. We will also utilize our Concurrent Enrollment program for help with promotion.
- Physical space and utilities

In addition, we have received the following commitments from external partners (see attached letters for additional information):

- Central Utah Educational Services will help promote the data science program and support faculty with curriculum development.
- Pluralsight will provide support and feedback on curriculum development and internship programs and will also help find speakers who can present at Snow College.
- Kristina Yamada at the Utah State Board of Education will provide input and support for curriculum development, outreach, and concurrent enrollment.
- FamilySearch will provide feedback to strengthen and develop programs, consider hiring qualified interns, and participate in speaker services or other campus activities.
- The Utah Department of Workforce Services will work with Snow College to create a data science pipeline.

Objectives

The objectives for this data science proposal are organized in the following table. These objectives will be in progress or completed by the end of the timeline period, Spring 2021. Objectives to be completed through future funding can be found in the appendix.

Objectives	Activities	Outcomes
Objective 1: Create a data science program that offers	Obtain Curriculum Committee approval to create a new	-Enroll 20 students into the data science program

both low- and high-level certification.	emphasis in the existing Software Engineering degree. Develop three upper level and several lower level courses designed to meet interdisciplinary demands.	
Objective 2: Inform non-IT departments of data science certification and related data science jobs.	Invite interested faculty from departments across campus to Data Bytes, Snow College's data science professional development seminar.	-Recruit 20% more students from previously unengaged departments.
Objective 3: Vertically align curriculum so that data science certifications apply to each of the relevant disciplines.	Work with division deans and department heads to develop certification pathways for students.	-Increase applicable degree programs toward data science. - Graduate more students into IT-related jobs
Objective 4: Expand software engineering capacity to meet the demand of incoming data science students.	Hire one new faculty member to teach data science related courses.	-Build capacity to serve a greater number of students
Objective 5: Establish industry mentorships for students administered by faculty.	Work with industry to identify problems at an appropriate level so that students experience a telecommuting internship as part of the mentorship.	-Increase student employability directly after graduation. -Build relationships between industry and the academy while simultaneously providing students with industry experience directly related to their education. -Culture crosspollination between industry and academia. -Offer professional development for faculty.
Objective 6: Establish strategic faculty internships within industry.	Identify industry partners who can provide critical skill to faculty. Identify faculty who are willing to work in industry over the Summer.	-Provide faculty with experience applying the concepts to be taught in the classroom. -Increase cultural cross-pollination between industry and academia. -Increase faculty ability to mentor students for industry.

Objective 7: Establish regular meetings with the industry advisory board.	Set up advisory board meetings that can be attended in person or at a distance.	-Inform curriculum development to ensure relevant material is presented to students.
Objective 8: Provide outreach to K-12 schools in the Snow College service area.	Partner with CTE directors in the Snow College service area to invite K-12 teachers to attend Data Bytes, the faculty data science professional development seminar. Hire outreach staff to work with concurrent enrollment facilitators to answer questions related to coding and data science. Outreach staff will also conduct regular coding and data science camps for K-12 students. Outreach staff will also work with high school teachers to increase their confidence with data science related concepts.	-Expand the pipeline of students entering Snow College data science certificate and degree programs. -Increase the number of participating concurrent enrollment students in data science certificate pathways. -Inform K-12 teachers and students about the myriad career options in data science.
Objective 9: Establish a vertically aligned curriculum between K-12 schools and Snow College	Collaborate with CTE directors in the Snow College service area to vertically align existing and new curriculum between K-12 schools and Snow College.	-Create a clear data science pathway from high school to a bachelor's degree for student in the Snow College service area. -Expand the pipeline of students entering data science programs to fill the needs of industry
Objective 10: Leverage existing broadcast architecture to enroll more students in the Snow College data science program.	Work with concurrent enrollment to expand the number of students enrolled in the Snow College data science program. Identify, market to, and recruit nontraditional students who are interested in gaining a marketable skillset.	-Expand the pipeline of students enrolling in data science programs, thereby increasing the number of employable IT professionals. -Recruit students from previously untapped markets.

Table 6: Program objectives that will be accomplished during the initial grant period.

Summary

Students and industry are demanding that colleges provide relevant training. Rapid increases in data-centered jobs motivate the need for programs that prepare students to deploy these skills in the workforce. Additionally, high wages, resulting from high demand, are fueling an economic boom along the Wasatch Front. Skyrocketing housing prices and other cost of living indicators are the inevitable result of the economic expansion. A diffusion of tech talent throughout the state will help alleviate rapid cost of living increases. Snow College is rural but advantageously close to the Wasatch Front, and the college has an existing software engineering degree. Moreover, Snow College's small size and absence of research emphasis allows it to quickly respond to the ever-changing tech marketplace. Thus, support for a data science program at Snow College will address both a shortage of tech talent and undesirable economic outcomes.

A Snow College Center for Data Science will address these issues by: 1) preparing students to enter the tech labor pipeline, filling critical labor shortages, and 2) seeding rural tech growth that will relieve pressure on relevant economic structures. These two outcomes will be achieved through the development of industry-ready curriculum from high school through undergrad and a comprehensive mentorship program. The latter of these will more intimately connect faculty and students to industry, leading to remote work for students, thus realizing the diffusion of tech talent throughout rural Utah.

The realization of these outcomes depends on both industry and state support, since "neither market forces nor bottom-up economic development efforts" are likely to change the deeply seated dynamics of the tech labor market (2019). Support through this Strategic Workforce Initiative Grant will help change these dynamics.

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Appendix

The timeline and objectives listed in the main proposal will be accomplished with the budget funds listed therein. In terms of degrees/certificates, this will include the data science emphasis in the existing software engineering bachelor's degree. This appendix contains budget, timeline, and objective information for the expanded data science program that encompasses each of the five academic divisions, as depicted in the "Snow College Data Science 'On-ramps' and 'Off-ramps'" figure. The expanded program contains course sequences in each of the five academic divisions at Snow College, along with the data science emphasis in the existing bachelor's of software engineering degree.

The following budget describes the expenses necessary to build the expanded data science program at Snow College, including certificates in each of the five academic divisions. The budget includes the funding request made in the main grant proposal for the Strategic Workforce Initiative grant.

Program Expenses	Grant Request	Future Funding
Annual Salary for Director		$99,232 (salary and benefits)
Rationale: The highly collaborative nature of this program will necessitate a director to ensure maximum coordination among all partners. The director will be responsible for aligning curriculum between the high schools and Snow College as well as creating articulation agreements with Universities within Utah. To maximize student employment, the director will help facilitate "real world" projects from industry or government that span multiple semesters and incorporate elements from each course in the data science track. This will include working with numerous disciplines across the Snow College campus, consultation with school districts in the Snow College service area, and industry. More frequent communication will be necessary with industry as mentorships are assigned and managed toward the end of the student's degree program. The director will also work with Silicon Slopes to build space for the Snow College Center for Data Science, an interdisciplinary shared workspace. Additional responsibilities will include securing additional funding from industry to pay staff for mentorship work, managing outreach and marketing, and evaluating program outcomes.		
Annual Salary for Snow College Faculty		
Engineering (1.5 FTE)	$141,320 (starting salary plus 20% and benefits)	
Social and Behavioral Science		$94,213 (starting salary plus 20%, and benefits)
Business and Technology		$94,213 (starting salary plus 20%, and benefits)
Natural Sciences and Mathematics		$94,213 (starting salary plus 20%, and benefits)
Communications, Fine Arts, and Humanities		$94,213 (starting salary plus 20%, and benefits)
Rotating Position for Faculty Industry Internship (1 per division)		$94,213 (starting salary plus 20%, and benefits)

Rationale: The addition of qualified faculty will be required to teach the myriad data sciences courses that will modernize the Snow College curriculum. Faculty with the requisite skills will be highly sought after by industry. Thus, we are requesting salaries that are 20% higher than the Snow College starting faculty salary. Courses that can service students from multiple divisions will be designed to minimize redundancy. Faculty from each academic division are overloaded with courses at this time. Thus, these faculty positions will ensure that the data science courses will be able to meet student demand. Moreover, these faculty will be expected to foster relationships with industry to induct industry projects into their curriculum and as part of their mentorship duties. It is anticipated that each data science faculty member will mentor at least 2-3 students per year. To help foster industry relationships and to increase faculties industry knowledge, faculty will complete internships with industry partners. To facilitate this, "rotating" faculty positions will be necessary to allow a faculty member to work in industry for a semester without reducing the college's course offerings.		
One-Time Course Development Costs		
Engineering (Five course releases)	$12,000 (3-credit equivalent release per course X 5 courses X $800 per hour for adjunct)	
Business & Technology (Three course releases)		$7,200
Fine Arts (One course release)		$2,400
Natural Sciences and Mathematics (Four course releases)		$9,600
Social and Behavioral Science (Three course releases)		$7,200
Rationale: Faculty will need to develop the data science courses. None of the proposed courses have been taught at Snow College. The five engineering course releases will cover development of the following courses: intro to data science, linear and non-linear regression, data mining, machine learning, and data visualization and communication. We will work with other institutions in the state to develop articulation agreements.		
Annual Training for High School Concurrent Enrollment Faculty		$36,000 ($3,000 per school X 12 high schools)
Rationale: Supplies, time, and travel costs for Snow College faculty to train high school faculty to teach the Intro to Data Science course. There are 12 high schools in the Snow College Six-County service area. Many of these schools require significant travel time to visit. While technology will be leveraged to minimize visits, some in-person visits will be necessary.		
Annual Salary for Lab/Outreach Staff	$67,662 (salary and benefits for 1 FTE, based on salaries of current lab management staff)	

Rationale: With nearly 70% of incoming freshmen unaware of data science as a field, substantial educational outreach and marketing will need to be implemented to ensure the success of the program. Additionally, outreach staff will manage new cloud resources necessary for "big data" analytics. They will also be responsible for assisting students in a tutoring lab and assisting students in concurrent enrollment courses.		
Annual Outreach Costs		$10,000
As the outreach team visits K-12 schools in the Snow College service area, they will provide demonstrations requiring consumables. Travel costs are also included at $0.41mile + accommodations for the most remote locations.		
Equipment	$5,000	
The Software Engineering degree with an emphasis in data science will require the use of cloud resources and the requisite computational power. Also anticipated are increases in computer lab use across campus as more students take the data science courses within their respective divisions.		
Annual Advisory Board Meeting Costs		$10,000
An advisory board will ensure that the Snow College data science courses teach the most relevant topics. This will maximize our student's employability. The current software engineering advisory board will be used until the program is expanded outside of this department.		
Shared Workspace		TBD
Maximizing the interdisciplinary nature of data science requires a space for related students, faculty, and industry to collaborate. Moreover, a shared workspace will provide a venue for remote employees and tech entrepreneurs to conduct business. Ultimately, the goal of the space is to provide a social and educational center toward which the Central Utah tech industry will converge.		

Timeline

The following table describes the timeline for building the expanded data science program at Snow College as outlined in the "On-ramps and Off-ramps" figure.

Activity	Fall '19	Spring '20	Summer '20	Fall '20	Spring '21	Summer '21	Fall '21	Spring '21
Develop Data Bytes Faculty Professional Development	X							
Develop Student Industry Seminar Series	X							
Develop Partnership with School Districts in	X	X	X	X				

the Snow College Service Area								
Develop Data Science Steering Committee	X	X						
Work with State School Board to Approve Concurrent Data Science Course		X	X	X				
Train K-12 Teachers & Implement Concurrent Data Science Course				X	X		X	X
Approve new Data Science Emphasis in Software Engineering Bachelor's		X						
Approve new Courses with Curriculum Committee for Each Academic Division		X		X	X		X	
Develop Curriculum for New Courses			X	X	X		X	
Pilot New Curriculum				X	X		X	X
Update Curriculum and adjust courses		X	X	X	X	X	X	X
Develop Plan for Shared Space		X	X	X				

Build New Space					X	X	X	
Align Curriculum Between Snow College, K-12, and USU		X	X	X				
Meet with Advisory Team		X	X	X	X	X	X	X
Hire New Faculty		X	X		X	X		
Develop Student Mentorships				X	X	X	X	X
Develop Faculty Internships			X			X		
Hire Outreach/Lab Coordinators		X	X					
Purchase New Equipment			X	X	X			

Objectives

The following table contains additional objectives necessary to complete the expanded data science program as outline in the "On-ramps" and "Off-ramps" figure.

Future Objectives	Activities	Outcomes
Objective 1: Expand the data science program to the remaining academic divisions.	Establish three course data science sequences that lead to certification for each academic division.	-Expand the pipeline of employable data science workers by increasing the number of students gaining data-related skills -Increase interdisciplinary collaboration centered on data science -provide multiple pathways into data science

Objective 2: Recruit nontraditional students whose careers are at risk of obsolescence.	Establish a relationship with the CTE program at Snow College, Richfield to educate those interested in at-risk trades of options in IT, including data science	-Expand the pipeline of students enrolling in data science programs, thereby increasing the number of employable IT professionals. -Provide pathways toward new employment for individuals employed in at-risk careers. -Reduce the likelihood of future high unemployment among those in at-risk careers.
Objective 3: Develop articulation agreements with other institutions throughout the state.	Utah Valley University is currently working on a similarly situated data science program. We will work with UVU to develop articulation agreements.	-Create a clear data science pathway from high school to graduate school for student in the Snow College service area. -Expand the pipeline of students entering data science programs to fill the needs of industry
Objective 4: Establish a space for the Snow College Center for Data Science	Work with industry partners to develop a plan to build or lease a shared workspace for the Snow College Center for Data Science. Students, industry, and faculty will all come together under one roof to collaborate.	-Increase networking options for students, thereby increasing their knowledge about the tech industry -Increase student employability and entrepreneurship. -Increase the number of telecommuting tech jobs in rural Utah. -Professional development for faculty. -Inform faculty of recent tech developments which will translate to more relevant classroom experiences for students.

Outcomes

The following table illustrates the expected number of degrees and certifications that will be granted when the program is fully operational.

Degree/Certification	Anticipated Number of Finishers
Bachelor's degree in Software Engineering with an Emphasis in Data Science	6-7
Division of Social Sciences (Associates degree/certificate)	6-7
Division of Natural Sciences & Mathematics (Associates degree/certificate)	6-7
Division of Business & Applied Tech	6-7
Division of Fine Arts, Communications, and New Media	2-3
Division of Humanities	2-3
Concurrent Enrollment Intro to Data Science	5 students per high school
Total	28-34 (excluding concurrent Enrollment)

SNOW COLLEGE

OFFICE OF THE PRESIDENT

Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Dear Selection Committee:

I am writing in support of Snow College's application to the Strategic Workforce Initiative grant program. Grant support will help Snow College create a dynamic center for data science that will grow the tech industry throughout central Utah. This growth will provide high paying employment opportunities for our students, which will benefit Utah's rural economy. Moreover, this center will alleviate critical labor shortages in the broader Utah tech industry.

Snow College is always seeking opportunities to provide relevant training and support to area residents. Dramatic increases in the collection and use of data have made businesses that leverage these data more efficient and competitive. This motivates the necessity of a program that will ensure Utah's rural businesses remain competitive. A data science program will allow Snow College to address the shortage of tech related training available in rural Utah, and the broader Utah tech industry.

I wholeheartedly support this effort. I look forward to the start of the Snow College Center for Data Science, which this grant will provide. In particular, the grant funds will support a concurrent enrollment data science course for high schools in our service area and a new data science emphasis in our existing Software Engineering bachelor's degree.

If you have any questions about our proposal, feel free to contact me at (435) 283-7010 or brad.cook@snow.edu.

Sincerely,

Bradley J. Cook, President

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Workforce Services

JON S. PIERPONT
Executive Director

CASEY R. CAMERON
Deputy Director

GREG PARAS
Deputy Director

December 23, 2019

To Whom It May Concern,

The Utah Department of Workforce Services and Snow College enjoy a great working relationship. The department's Workforce Development Division looks forward to working closely with Snow College to support the creation of a dynamic center for Data Science. Adding this degree to Snow College will help to alleviate labor shortages and grow the tech industry throughout central Utah.

The department helps meet industry need by connecting job seekers, businesses, and education and training partners in an effort to develop a world-class workforce. Ultimately, these partnerships help businesses grow the economy, create jobs, and work to meet local and global demands.

We already enjoy a great partnership in helping to enroll students in programs through Snow College. As the college works to build and expand their curriculum to include Data Science, we will continue to work together to create a pipeline for students into data science and related jobs in central Utah. This addition to Snow College will help to build a support system for remote jobs and plant the seed needed to grow a healthy tech community in the heart of central Utah.

Sincerely,

David R. Busk
Director,
Central and Southwest Utah
Economic Service Area
Department of Workforce Services

December 23, 2019

To whom it may concern,

Technology Industries are growing rapidly in Utah, which increases demand for skilled labor. My office supports the creation of the Snow College Center for Data Science, and the related degree program.

The Center will create world class data science curriculum that will help grow the tech industry in central Utah. The program will create a pipeline for students into data science and related jobs. It will also create a support system for remote jobs.

Please help fund the Snow College Center for Data Science. If you have any questions please feel free to contact me.

Sincerely,

Kevin B Christensen
Sanpete County
Economic Development
435-835-4321
Kevin@sanpete.com

CUES
Where service meets education in central Utah!

Board of Directors
Superintendent

Dr. Cade Douglas, (Chair)
Sevier

Kent Larsen
South Sanpete

Dr. John Fahey
Wayne

Dr. Kodey Hughes,
Tintic

Dr. Rick Robins
Juab

Dr. Sam Ray
North Sanpete

Koby Willis
Piute

Director

Jason Strate

820 North Main Suite 3
Richfield, Ut, 84701
(435) 896-4469

December 13, 2019

Dear Strategic Workforce Initiative Review Committee:

I am writing to pledge my support for Snow College's proposed Data Science programs, and I express my commitment to help develop and strengthen these programs.

Central Utah Educational Services (CUES) is an education service center that works with seven rural school districts in central Utah. Both Snow College campuses are located in our service center area, providing educational opportunities for many of our regional teachers. Compared to urban areas, rural districts are generally at a disadvantage as far as resources and opportunities available to further education. The proposed Data Science programs through Snow College will provide additional opportunities for our teachers. This is a value that can not be underestimated.

CUES will help contribute to the Data Science programs by:

- Soliciting future participants for the Data Science programs
- Advocating to District and community Stakeholders the need for the Data Science programs
- Providing support for a data science certificate for district and school personnel
- Providing support for the development of a concurrent enrollment data science course
- Giving input to Snow College faculty as they develop curriculum and/or outreach

Each year our Districts conduct Stakeholder surveys, given to parents, students, teachers, etc. There are very few in the region who are qualified to really analyze the data to its fullest. Going through the Data Science program will give participants the needed knowledge and skills to utilize and leverage the data so as to make the needed recommendations to help improve the culture and instruction in the schools.

I look forward to working with Snow College in implementing their Data Science programs and in seeing our teachers take advantage of them.

Sincerely,

Jason Strate

PLURALSIGHT

December 18, 2019

Dear Strategic Workforce Initiative Review Committee:

I am writing to pledge my support for Snow College's proposed Data Science programs, and I express my commitment to help develop and strengthen these programs.

Data science is becoming increasingly important in the software development world. The amount and types of data being generated by users, software and devices has been increasing at an impressive rate. In the past, using simplistic, ad-hoc approaches to getting useful information from this data were often adequate. But as the data needs in industry continue to increase, these simple approaches will become less and less effective. It's important to ensure that new software engineers entering the industry have the skills necessary to deal with these increasing data needs.

If the proposed Data Science programs are incorporated into Snow College's Software Engineering Curriculum I intend to offer my support by

- Providing industry-based input and feedback to faculty members on curriculum
- Providing input and feedback on any outreach or internship programs
- Presenting or finding others in industry to present to faculty and/or students on current data usage and needs

I am a co-organizer of the Utah Software Craftsmanship group, a group focused on helping those who work in software development get better at their craft. Over the past year or so, one of the Snow College faculty and several software engineering students have been attending our monthly meetings regularly. This focus on involvement with the professional software development community is one of the things that makes me excited to continue to engage with the Snow College Software Engineering program, both through the meetup group and as a member of the advisory board.

Sincerely,

Jonathan Turner
Manager of Platform Engineering
Pluralsight

December 16, 2019

Dear Strategic Workforce Initiative Review Committee:

I am writing to pledge my support for Snow College's proposed Data Science programs, and express my commitment to help develop and strengthen these programs. FamilySearch is very interested in qualified Data Science candidates and I am offering my assistance to help provide feedback to strengthen the content of the new program and to consider the employment of qualified seasonal student interns. We always consider our high performing interns as potential candidates for filling fulltime positions as those positions become available.

It is currently difficult to find qualified Data Science candidates in the industry. Many engineers express interest in working on machine learning projects, but are surprised to find that their time is spent more on data analysis rather than coding. FamilySearch regularly deals with petabytes of data. The demand to utilize that data for machine learning purposes is increasing as our knowledge of machine learning and its application grows. Having qualified individuals who can assist in this effort is increasingly important.

I am willing to assist in this effort in the following ways:

- Provide input to Snow College faculty as they develop curriculum and/or outreach.
- Offer internships to qualified students.
- Participate in speaker services or other campus activities.

As a member of the Snow College Software Engineering Advisory Board, I believe this new program will bring great value to Ephraim, our state, and the IT industry. My daughter is an alumni and played on the Women's Basketball team. It is my desire to see Snow College succeed and I pledge to assist as my schedule permits.

Sincerely,

Steven L. Weitzeil

Director, Engineering and Program Managment

FamilySearch

December 12, 2019

RE: Snow College Center for Data Science

Dear Strategic Workforce Initiative Review Committee,

I am writing to pledge my support for Snow College's proposed Data Science programs, and I express my commitment to help develop and strengthen these programs.

I am very passionate about giving every student robust opportunities and applicable skills that will either lead them to a path of higher education or industry work. A Data Science program that can align from high school to careers would be valuable to every student in Utah. It will not only enhance our programs but raise the academic achievement of our students.

I am committed to work with Snow College so they can be the first in Utah to offer this program to our high school students! I will offer my services to

- Provide support for the development of a concurrent enrollment data science course
- Provide input to Snow College faculty as they develop curriculum and/or outreach
- Provide support for a data science certificate for educators and administrators

I am pleased with this groundbreaking opportunity and support all aspects of Snow College's commitment to Data Science and the students of Utah. I urge your approval of this application as well.

Sincerely,

Kristina J. Yamada
CTE Information Technology Educational Specialist
Utah State Board of Education
Phone: 801.538.7849 | Mobile: 385.313.4459 | Fax: 801.538.7868

FY 20
Request

Southern Utah University
Professional Sales
Strategic Workforce Initiative

Submitted by:
Dr. Mary Pearson, Dean
Dixie L. Leavitt
School of Business
pearsonm@suu.edu

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1. Executive Summary

Southern Utah University (SUU), in partnership with Southwest Technical College (STC), and Iron County School District Launch High School, propose the creation of a Professional Sales Strategic Workforce Initiative. The total funding request is $453,000 over the three year project ($142,000 - Year 1, $145,000 - Year 2, $166,000 Year 3). This initiative provides critical education for students at all stages to develop the sales skills and abilities needed in all industry clusters. Because of our industry partners, we are focusing our strategic industry clusters for this grant on financial services and software development.

The goal of the sales programs created with the Strategic Workforce Initiative is to provide a workforce skilled in sales to new and existing organizations. This will result in higher paying jobs and contribute considerably to the economic well-being of rural Utah. For the past two decades, since the decline of the region's mining and logging industries, this region has suffered from wages that are well below state and national levels. Through the establishment of the Professional Sales Strategic Workforce Initiative, SUU and their education partners stand poised to overcome this barrier.

Through this effort, SUU and our partners provide the opportunity for stackable credentials with multiple on and off ramps to support the sales profession at all levels of education. We will build upon and extend the current successful entrepreneurship and employment preparation programs at Southern Utah University, Southwest Technical College, and Launch High School by providing an opportunity for students to earn course credit in professional sales in high school, technical school, and university. Additionally, certificates in sales will be available to students at Launch High School, Southwest Technical College, and Southern Utah University. Finally, this effort will enable an associates degree and minor in professional sales at Southern Utah University. These trained and educated students will supply a skilled sales workforce in financial services and software development in rural Utah and fill a growing need for sales professionals in the state, contributing to the Governor's 25,000 jobs initiative.

2. Workforce Need for Sales Skills

Across all majors, 50% of college graduates will work in sales at some point in their careers (Harvard Business Review, 2016). The likelihood of entering a professional sales job is even greater for business majors, of whom 60% will enter a sales-related job upon graduation (Sales Education Foundation, 2017). Unfortunately, graduates may not possess the requisite competencies to succeed in sales, as over 60% of first sales jobs end in either resignation or termination (Sales Education Foundation, 2017). Graduates of universities with sales-specific education turn over 30% less than peers and require 50% less time to ramp-up on the job (Sales Education Foundation 2016). These benefits extend to employers, who are estimated to save around $200,000 in training expenses within the initial 18 months after hiring a graduate with sales-specific education relative to peers.

The job prospects of people with current technical school certifications will be transformed when combined with sales training. For example, rather than being qualified to perform narrow web design duties, students who augment their technical school certifications with a certification in sales could knowledgeably sell web solutions. Likewise a certification in culinary arts, when combined with a certification in professional sales, opens the door to sell products and services to restaurants and professional kitchens.

Funding of this proposal would allow SUU students from all majors the opportunity to minor in sales. A biology major with a minor in sales is ideally suited to be a pharmaceutical representative; a finance major with a sales minor is ideally trained for selling financial services; Information Technology major with a sales minor would be ideally suited for sales positions at a number of tech firms. In the state of Utah, sales-related employment is projected to add new jobs and have a significant impact on the state's overall economy. In addition to the more than 139,000 existing sales jobs, the Utah Department of Workforce Services estimates a healthy 2.2% growth in sales-related occupations, translating to over 25,000 annual sales-related openings through 2026.

In sum, people are not well prepared for jobs or careers in sales, as evidenced by the extraordinarily high turnover. In Utah, the need for qualified sales people is currently widespread and is on track to grow. Our proposal will provide skilled labor in the sales profession, contributing to the economic well-being of individuals and the overall economy in rural Utah.

A. Economic Condition

Cedar City is the regional center for the rural counties of Iron, Beaver, and Garfield and is located in southwest Utah. Southern Utah University is located in Cedar City, the largest municipality in these counties. The regional population is 59,731 residents, including Iron County with 43,368 residents, Beaver County with 6,354 residents, and Garfield County with 5,009 residents.

These three counties are members of the Five County Economic Development District (EDD), which is composed of five counties in the southwest corner of Utah. This region has historically relied upon mining, logging, and tourism as its economic base. Logging and mining have declined significantly due to economic stresses over the past two decades. Iron County has little economic diversification and relies heavily on employment by one hospital, government agencies, and a few manufacturing facilities. Beaver County relies on one large-scale commercial hog raising operation, making it susceptible to the boom and bust of agri-farming. Garfield County is almost entirely dependent upon tourism. All three counties have wages that are well below the state average. Because of this lack of diversity, the region is vulnerable to tremendous negative economic impact if any one variable changes. The closure of any one of these businesses could affect one county's workforce with the loss of 1,000 to 2,000 jobs. The impact of one successful skilled job placement in Iron County has the same economic impact as 11.48 skilled job placements in Salt Lake County (Utah Governor's Office of Economic Development).

Category	Statewide	Iron	Beaver	Garfield
Unemployment Rate	3.3%	3.9%	3.7%	6.7%
Average Monthly Wages	$3,705	$2,570	$2,795	$2,469
County Wage compared to Statewide Wage	100%	69%	75%	67%
Annual Per Capita Income	$29,829	$19,085	$21,394	$19,085

U.S. Census Data 2012-2016

Southern Utah University and its partners are designing sales and entrepreneurship programs to improve this situation by fostering new economic activity in the region's rural communities. Businesses are attracted to Iron County and the nearby region because of the accessibility of transportation (highway, rail, and air), low criminal activity, clean air, high quality of living, and the potential for a well-educated and trained workforce. Through these efforts, businesses will see sustained growth and new business opportunities will be generated from the bottom-up, by individuals and companies who are creative, adaptive, innovative, and willing to take risks.

The financial services and software development industries in southern Utah are poised for immediate growth in sales-oriented positions, and they are looking to our community for the trained personnel they seek. The creation of the Professional Sales Strategic Workforce Initiative to include SUU sponsored degrees and certifications will assure the trained talent they need.

B. Strategic Industry Clusters:

In creating the Professional Sales Strategic Workforce Initiative, SUU focuses primarily on the **financial services** and **software development** industries in the state of Utah. Both of these industries have been identified as a Strategic Industry Cluster by GOED. The Utah tech industry accounts for $29.7 billion, 18% of the total Utah economy, and employs over 212,000 people. Industry growth for 2008-2018 was 4.9% annually and is expected to continue over the next decade. The financial services industry employs over 75,000 people, with annual job growth over 4%. According to the U.S. Bureau of Labor Statistics, Utah leads the nation with 20.89 percent growth in the financial services industry since 2007. Financial trends indicate this growth will only improve in up-coming years for Utah. **Both of these industries rely heavily on the sales skills of their employees to ensure long term growth and stability.**

Three businesses are our major industry partners in this endeavor: Touch MD, a software development and customer service company, Leavitt Enterprises, a large financial insurance and investment company, and State Bank of Southern Utah, a mid-size financial institution. All three are enthusiastic supporters of this proposal, as they all indicated a lack of trained sales people has cost them opportunities for growth. Additionally, State Farm, Innoventrum, and Safari Hospitality are supporting this request and offering internships and career opportunities to students trained in the sales programs. Other companies locally and within the state seek personnel with the sales training we are providing, including: Convergys, Vivint, Goldman Sachs, and Wittwer Hospitality. Lastly, entrepreneurship is widely recognized as the universal engine of economic growth, and this program will provide sales training for aspiring entrepreneurs.

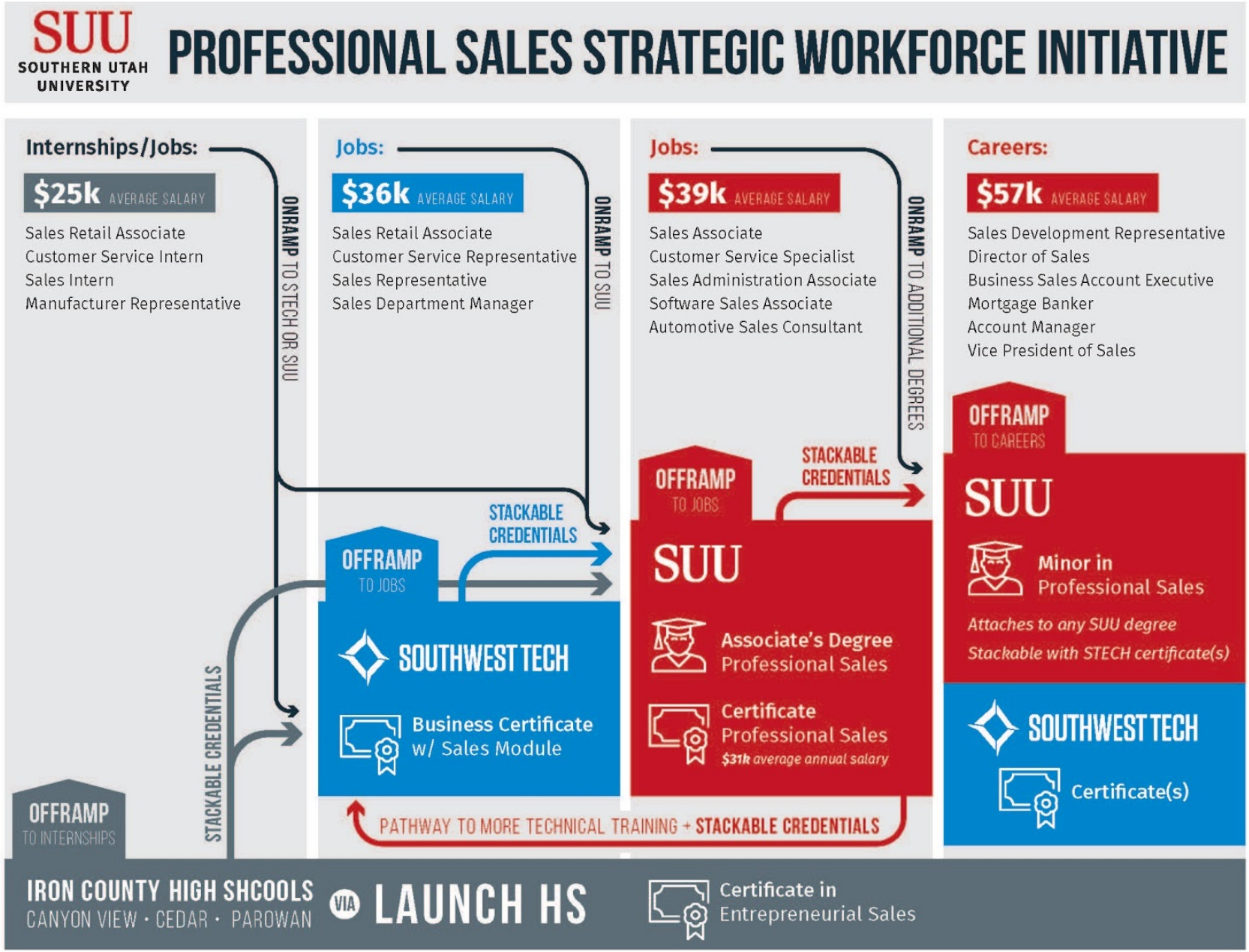
3. Program Design & Graphic

Consortium partners Southern Utah University (SUU), Southwest Technical College (STC), and Iron County School District (ICSD) Launch High School in consultation with regional employers Touch MD, Leavitt Enterprises, and State Bank of Southern Utah, have designed the Professional Sales Strategic Workforce Initiative. This initiative will provide critical education for traditional and non-traditional students at all stages to develop the skills and abilities necessary to succeed in sales-oriented professions

This proposal is building upon the success of the new Larry H. and Gail Miller Center for Entrepreneurship at Southern Utah University. One of the most misunderstood requirements of entrepreneurship is that business owners have to sell, and those who are unable to properly advocate and market their product or service will not succeed. The Miller entrepreneurship program is an enthusiastic partner in this request and will require at least one professional sales course for completion of a minor in entrepreneurship. The Entrepreneurship Leadership Council (ELC), an external advisory board to the Larry H. and Gail Miller Center for Entrepreneurship is committed to assisting the sales program (please see letter of support). For instance, the ELC has committed $20,000 to recognize outstanding sales practices among the student entrepreneurs at Southwest Technical College and Southern Utah University. Additionally, the ELC will be providing pathways to internships and employment opportunities for students with sales training.

This initiative provides a pathway for students to study, learn, and practice sales skills that are essential for them to be successful in their chosen careers. Upon notification of the grant approval, we propose to hire a Professional Sales Instructor to work in the SUU Dixie L. Leavitt School of Business with the following priority of responsibilities.

Professional Sales Instructor Responsibilities	**ICSD**	**STC**	**SUU**
Course Development			
• Fundamental Selling Techniques…….	X	X	X
• Sales Channels……..		X	X
• Customer Service Techniques…….		X	X
• Sales Management……..……			X
• Advanced Selling Techniques……...			X
Creation of Credentials			
• SUU/Launch Certificate in Entrepreneurial Sales……...	X	X	X
• SUU Certificate in Professional Sales……..		X	X
• Associates Degree in Professional Sales……..			X
• Minor in Professional Sales……..			X
Organize Work-Based Learning Sales Programs, Internships, and Job Opportunities with Industry Partners	X		X


SUU
SOUTHERN UTAH UNIVERSITY
PROFESSIONAL SALES STRATEGIC WORKFORCE INITIATIVE
Internships/Jobs:
$25k AVERAGE SALARY
Sales Retail Associate
Customer Service Intern
Sales Intern
Manufacturer Representative
ONRAMP TO STECH OR SUU
Jobs:
$36k AVERAGE SALARY
Sales Retail Associate
Customer Service Representative
Sales Representative
Sales Department Manager
ONRAMP TO SUU
Jobs:
$39k AVERAGE SALARY
Sales Associate
Customer Service Specialist
Sales Administration Associate
Software Sales Associate
Automotive Sales Consultant
ONRAMP TO ADDITIONAL DEGREES
Careers:
$57k AVERAGE SALARY
Sales Development Representative
Director of Sales
Business Sales Account Executive
Mortgage Banker
Account Manager
Vice President of Sales
OFFRAMP TO CAREERS
SUU
Minor in Professional Sales
Attaches to any SUU degree
Stackable with STECH certificate(s)
SOUTHWEST TECH
Certificate(s)
STACKABLE CREDENTIALS
OFFRAMP TO JOBS
SOUTHWEST TECH
Business Certificate w/ Sales Module
STACKABLE CREDENTIALS
OFFRAMP TO JOBS
SUU
Associate's Degree Professional Sales
Certificate Professional Sales
$31k average annual salary
STACKABLE CREDENTIALS
PATHWAY TO MORE TECHNICAL TRAINING + STACKABLE CREDENTIALS
OFFRAMP TO INTERNSHIPS
STACKABLE CREDENTIALS
IRON COUNTY HIGH SHCOOLS
CANYON VIEW · CEDAR · PAROWAN
VIA LAUNCH HS
Certificate in Entrepreneurial Sales

A. Stackable Credentials:

The sales programs at Launch High School, Southwest Technical College, and Southern Utah University are designed to spend 60% of time learning in the classroom and 40% of time in hands-on learning. The mastery of subject matter is demonstrated through work-based projects and experiences that indicate learning has occurred. Students will practice their selling skills not only through industry-based projects and experience, but through competitions that require selling ideas, products, and services to experienced professionals who understand sales. This provides a rigorous educational environment where students can exercise self-directed learning while still receiving personalized attention, the cornerstone of our mission at Southern Utah University.

First Stackable Credential

Stackable Credential	Estimated Time to Complete	Estimated Cost to Complete (tuition & fees)	Average Entry Level Sales Annual Salary	Job Placement Rate
SUU-Launch High School Certificate in Entrepreneurial Sales	2 Semesters	$300	$25,000	95%

Description: Launch High School is a competency-based innovative school that offers students specialized training in coding, computing, and robotics. High School juniors and seniors (ages 15 - 18) enrolled in Launch High School will have the opportunity to earn an SUU-Launch High School Certificate of Entrepreneurial Sales by successfully completing the following requirements:

- Two Southern Utah University concurrent enrollment courses, both including **work-based learning components**
  - Fundamental Selling Techniques
  - Basic Entrepreneur Skills
- Sales and Innovation Projects provided through Launch High School
- Participation in Rural High School Pitch Competition. SUU has sponsored the pitch competition for 3 years and requires students to pitch their entrepreneurial venture to a panel of experts.

Off-Ramp to Workforce: Students receiving this certificate will be equipped to join the sales workforce obtaining jobs as a sales retail associate, customer service intern, sales intern, or manufacturer representative.

On-Ramp to Education: This credential will contribute to earning an SUU Certificate in Professional Sales, Associates Degree in Professional Sales, and Minor in Professional Sales which will be obtainable through both Southwest Technical College and Southern Utah University thanks to an outstanding partnership and articulation agreement between both institutions.

Second Stackable Credential

Stackable Credential	Estimated Time to Complete	Estimated Cost to Complete (tuition & fees)	Average Entry Level Annual Salary	Job Placement Rate
SUU Certificate in Professional Sales	1 Semester	$3,500	$31,000	95%

Description: Southern Utah University is an accredited public university with over 11,000 students offering certificates, associates, baccalaureate, and graduate degrees. Traditional or Non-Traditional students enrolled at Southern Utah University or Southwest Technical College will have the opportunity to earn an SUU Certificate in Professional Sales by successfully completing the following requirements:

- Three Southern Utah University Sales courses that include **work-based learning components**
  - Fundamental Selling Techniques (required)*

  Any two of the following courses:
  - Sales Channels
  - Sales Management
  - Customer Service Techniques
- Advanced Selling Techniques
- Participation in Business Sales Pitch Competition where students are required to pitch their entrepreneurial venture to a panel of experts.

**Course counts towards SUU - Launch High School Certificate in Entrepreneurial Sales*

Off Ramp to Workforce: Students receiving this certificate will be equipped to join the sales workforce obtaining jobs as a sales retail associate, customer service representative, sales representative, and sales department manager.

On-Ramp to Education: This credential will contribute to earning an Associates Degree in Professional Sales and Minor in Professional Sales which will be obtainable through Southern Utah University.

Third Stackable Credential

Stackable Credential	Estimated Time to Complete	Estimated Cost to Complete (tuition & fees)	Average Entry Level Annual Salary	Job Placement Rate
Southwest Technical College Business Certificate with Sales Module	690 hours	$3,000	$35,800	100%

Description: Southwest Technical College is an accredited technology college serving Iron, Beaver, Garfield, and Kane counties with over 550 students enrolled, offering certificate programs in high-demand careers. Traditional or Non-Traditional students enrolled at

Southwest Technical College will have the opportunity to earn a Southwest Technical College Business Certificate with a Sales Module by successfully completing the following requirements:

- 630 hours in business specific courses, e.g., Computer Literacy, Accounting Basics, Social Media and the Internet, Customer Service, and Professionalism.
- 60 hours in Sales and Negotiations courses

Off Ramp to Workforce: Students receiving this certificate will be equipped to join the sales workforce obtaining jobs as a sales retail associate, customer service representative, sales representative, and sales department manager.

On-Ramp to Education: The Southwest Technical College business credential will contribute to earning an SUU Associates Degree in Professional Sales and SUU Minor in Professional Sales by awarding students up to 30 SUU academic credit hours. This is due to the unique articulation agreement between both institutions.

Fourth Stackable Credential

Stackable Credential	Estimated Time to Complete	Estimated Cost to Complete (tuition & fees)	Average Entry Level Annual Salary	Job Placement Rate
SUU Associates Degree Professional Sales	4 Semesters	$14,000	$39,200	95%

Description: Traditional or Non-Traditional students enrolled at Southern Utah University or Southwest Technical College will have the opportunity to earn an SUU Associates Degree in Professional Sales by successfully completing the following requirements:

- Six Southern Utah University courses that include **work-based learning components**
  - Fundamental Selling Techniques * [1]
  - Basic Entrepreneur Skills*[1]
  - Small Business Management[1]
  - Sales Channels[1]
  - Entrepreneurship
  - Customer Service Techniques[1]
  - Entrepreneurship Speaker Series
  - Advanced Selling Techniques[1]
- Participation in Business Sales Pitch Competition where students are required to pitch their entrepreneurial venture to a panel of experts.

[1]*Course counts towards SUU Certificate in Professional Sales*

**Course counts towards SUU - Launch High School Certificate in Entrepreneurial Sales*

Off Ramp to Workforce: Students receiving this certificate will be equipped to join the sales workforce obtaining jobs as a sales associate, customer service specialist, sales administration associate, software sales associate, or automotive sales consultant.

On-Ramp to Education: This degree will contribute to earning a Minor in Professional Sales which will be obtainable through Southern Utah University.

Fifth Stackable Credential

Stackable Credential	Estimated Time to Complete	Estimated Cost to Complete (tuition & fees)	Average Entry Level Annual Salary	Job Placement Rate
SUU Minor in Professional Sales	8 Semesters	$28,000	$57,120	95%

Description: Traditional or Non-Traditional students enrolled at Southern Utah University will have the opportunity to earn a Minor in Professional Sales that will attach to any major/baccalaureate degree by successfully completing the following requirements:

- Complete 2 of 4 foundation courses:
  Basic Entrepreneurship Skills*
  Fundamental Selling Techniques* [1]
  Small Business Management
  Entrepreneurship

- Complete 3 of 4 advanced sales courses:
  Sales Channels[1]
  Sales Management [1]
  Customer Service Techniques[1]
  Advanced Selling Techniques[1]

- Participation in Business Sales Pitch Competition where students are required to pitch their entrepreneurial venture to a panel of experts.
  [1]*Course counts towards SUU Certificate in Professional Sales*
  **Course counts towards SUU - Launch High School Certificate in Entrepreneurial Sales*

Off Ramp to Workforce: Students receiving this certificate will be equipped to join the sales workforce obtaining jobs as sales development representatives, director of sales, business sales account executives, mortgage bankers, account managers, and vice presidents over sales.

4. Education Collaborations

Southern Utah University has collaborated with Iron County School District Launch High School and Southwest Technical College to provide sales curriculum and work-based learning to traditional and non-traditional students.

Launch High School is a competency based innovative school that offers students specialized training in coding, computing, and robotics. These students are prepared to enter the workforce earlier than students enrolled in a traditional high school. An agreement to allow Launch High School students to take entrepreneurship classes for concurrent credit is already underway, and support of this grant would afford them the opportunity to also take concurrent professional sales classes. These concurrent enrollment classes count toward a certificate in professional sales, in stackable fashion.

Southwest Technical College is an accredited technology college serving Iron, Beaver, Garfield, and Kane counties providing technical, competency based, employer driven education. Southwest Technical College offers year-round schedules and provides high school and adult learners certificates in Business, Web-Design, Information Technology, Software Development, or Culinary Arts. Southern Utah University and Southwest Technical College have created a unique and innovative enrollment process that allows students to be dually enrolled and receive credit from either institution toward their certificates or degrees, including sales courses.

A. Student Enrollment and Attainment Rates

The following table depicts estimated total enrollment numbers from each institution, estimated number of students enrolled in a sales certificate or degree program, estimated number of students completing a sales certificate or degree program, and estimated number of students obtaining jobs in a sales-oriented career:

		Total Student Enrollment	Enrollment in Sales Programs	Students Completing Sales Programs	Students Obtaining Sales Oriented Jobs
Iron County School District Launch High School	Year 1	100	5	4	3
	Year 2	103	10	8	6
	Year 3	106	15	12	10
TOTAL Launch HS			**30**	**24**	**19**
Southwest Technical College	Year 1	557	7	6	6
	Year 2	573	8	7	7
	Year 3	590	9	8	8
TOTAL S-Tech			**24**	**21**	**21**
Southern Utah University	Year 1	11250	10	8	6
	Year 2	11590	20	16	13
	Year 3	11930	30	25	22
TOTAL SUU			**60**	**49**	**41**

5. Industry Partnerships/Employers

Development and design of the Professional Sales Strategic Workforce Initiative was created out of collaboration with partnered employers. Our three main partners for this initiative are: Touch MD, a software development and customer service company, Leavitt Enterprises, a large financial insurance and investment company, and State Bank of Southern Utah, a mid-size financial institution. These partners are committed to assisting the program by offering internships and full-time jobs to graduates of these sales programs, as well as providing valued input on sales skills and abilities needed by their employees. Additionally, State Farm, Lendio, Innoventrum, and Safari Hospitality are supporting this request and offering internships and career opportunities to students trained in the sales programs. Other companies locally and within the state seek personnel with the sales training we are providing, including: Convergys, Vivint, Goldman Sachs, and Wittwer Hospitality.

A. Job Placement

Industry Partner Sales Positions	Internships and Job Openings in 2021	Internships and Job Openings in 2022	Internships and Job Openings in 2023
Touch MD: **sales interns, customer service interns, customer sales representatives, sales representative, sales account managers**	20	25	30
State Bank of Southern Utah: **account interns, marketing interns, account managers, loan officers, financial services specialists**	5	7	10
Leavitt Enterprises: **account interns, account managers, sales representatives, sales account managers**	12	15	18

6. Grant Administration

Southern Utah University (SUU) will administer the grant for the Strategic Workforce Initiative in collaboration with Southwest Technical College and Iron County School District Launch High School. SUU is a public university founded in 1897, located in the rural community of Cedar City, Utah, offering more than 140 undergraduate and 20 graduate programs across five academic colleges. Academic programs include science, business, engineering, computer science & information systems, analytics, and marketing.

SUU is the home of the Tony-award winning Utah Shakespeare Festival, and the Utah Summer Games, which together bring more than 100,000 visitors to the community each year. SUU is a significant economic driver for Cedar City and is a large supporter of the region's employment needs. The institution provides a stable and well-trained workforce, providing students and community residents with opportunities for higher-paying jobs. The local population of 51,000 is enhanced by the university's growth of approximately 3% annually, with current enrollment at 11,245 students.

This program is one of the first to facilitate communication between local and state educational institutions and private sales industry, and to collaborate on implementing a variety of economic initiatives. The university has a proven track record of attracting private sector investments of more than $50 million for capital projects and educational programs in the past ten years. SUU has served in a unique capacity in stimulating the vitality of the region's economy by promoting the start-up, growth, and attraction of businesses. Nearly every business in the region was either founded by an SUU alumnus or has hired SUU graduates. Regional business owners continue to be essential partners to the university by identifying industry and corporate needs for SUU to implement in its curriculum.

7. Projected Timeline

	Year 1	Year 2	Year 3
SUU Courses Offered	Fall Fundamental Selling Techniques Sales Channels Spring Fundamental Selling Techniques Customer Service Techniques	Fall Fundamental Selling Techniques Sales Channels Sales Management Spring Fundamental Selling Techniques Customer Service Techniques Advanced Selling Techniques	Fall Fundamental Selling Techniques Sales Channels Sales Management Spring Fundamental Selling Techniques Customer Service Techniques Advanced Selling Techniques Summer Fundamental Selling Techniques
SUU Credentials Offered	SUU Certificate in Professional Sales	SUU Certificate in Professional Sales SUU Minor in Professional Sales	SUU Certificate in Professional Sales SUU Minor in Professional Sales SUU Associate's Degree in Professional Sales
STC Credentials Offered	Sales and Negotiation Modules part of business certificate SUU sales courses available	Sales and Negotiation Modules part of business certificate SUU sales courses available SUU Certificate in Professional Sales	Sales and Negotiation Modules part of business certificate SUU sales courses available SUU Certificate in Professional Sales
SUU and STC Competitions	Four existing SUU-based business pitch competitions	Four existing SUU-based business pitch competitions Compete in statewide sales competition	Four existing SUU-based business pitch competitions Compete in statewide sales competition Compete in national sales competition
Launch High School Extra-Curricular Activities Progression	Launch High School sales and innovation projects Compete in SUU Rural High School pitch competition	Launch High School sales and innovation projects Compete in SUU Rural High School pitch competition Establish Entrepreneurship and Sales club	Launch High School sales and innovation projects Compete in SUU Rural High School pitch competition Grow Entrepreneurship and Sales club
Launch High School Offerings	Concurrent enrollment agreements completed	Certificate in Entrepreneurial Sales offered	Growth in Certificates in Entrepreneurial Sales awarded

	Fundamental Selling Techniques Basic Entrepreneur Skills		
Industry Partners	Preliminary matching of work-based learning course requirements to partners Internships established	Survey of industry partners to assess the quality of instruction and fit of work-based partnerships Survey of industry partners to assess the fit of internships Adjustments to curriculum and requirements as needed Growth of work-based learning and internships	Survey of industry partners to assess the quality of instruction and fit of work-based partnerships Survey of industry partners to assess the fit of internships Adjustments to curriculum and requirements as needed Continued growth of work-based learning and internships

8. Budget Narrative & Funding Request

SUU Total Request = $453,000

Category	Budget Narrative	Year 1	Year 2 +3%	Year 3 +3%
Salary	Professional Sales Instructor for 5 sales courses based on Weber State Curriculum, prepare applications for sales certificates and degrees for Launch High School and SUU, manage industry partner internships and career opportunities, and manage work based learning programs.	$72,000	$74,160	$76,385
Employee Benefits	Professional Sales Instructor FICA, health, dental, disability, and life insurances, and retirement benefits (23% of salary + $18,000)	$34,560	$35,597	$36,665
Student Wage & Employer Tax	Student worker to assist administration of sales programs and tracking of students. ($10 per hr x 15 hrs per week x 38 weeks + Employer Tax (8%))	$6,000	$6,000	$6,000
Equipment & Supplies	Program consumables, e.g., office supplies, books, textbooks Launch High School (ICSD) Southwest Technical College Southern Utah University Work based learning tools (paid by SUU for all programs), e.g., sales software, marketing materials, customer service course supplies Sales Leader-Boards (3) Laptop for Professional Sales Instructor Color printer & supplies	 $1,500 $1,500 $1,500 $10,700 $1,800 $2,000 $1,400	 $1,545 $1,545 $1,545 $10,300	 $1,591 $1,591 $1,591 $10,610
Accreditation Funding	Training for accreditation and accreditation fees for participation in University Sales Center Alliance	$1,000	$1,000	$3,000
Tracking	Tracking of employer satisfaction, student satisfaction, and job placement rates	$2,000	$2,000	$2,000
Professional Development/Travel	Student travel including hotel, meals, airfare, and transportation costs. Statewide sales competitions National sales competitions 2 sales seminars @ $1,500 each	 $3,000	 $5,000 $3,000	 $5,150 $15,000 $3,000
Faculty Development	Travel costs including airfare, meals, hotel, trans., & sales conference fees	$3,040	$3,308	$3,417
Total	**$453,000 =**	$142,000	$145,000	$166,000

A. Leveraged resources are valued in the range of $500,000. Leveraged resources include: annual SUU entrepreneurship instructor salary and benefits; annual sales, innovation, and business pitch competition support; entrepreneurship and sales director salary and benefits; office furniture and equipment for Professional Sales Instructor; and other institutionally funded positions at Southwest Technical College and Launch High School. As detailed in the accompanying support letters, our industry partners are committed to employ over 100 students over the next 3 years, paying starting intern salaries of over $11 per hour and full time employment for SUU graduates up to $100,000 per year. The estimated value of these industry partner engagements is well over $3,000,000.

9. Sustainability

The creation of the Professional Sales Strategic Workforce program is aligned to meet all GOED-designated industry cluster needs, but specifically in rural Utah to meet the needs of the **financial** and **software development** industry clusters. Regional industries in these clusters are unable to maintain their competitive edge or expand their organizations without an adequately prepared workforce with sales skills and experience. Many of these local regional employers, as well as financially successful alumni have expressed a need for students to obtain purposeful sales education.

To sustain the new sales program, the intent is to obtain a $1,000,000 endowment from a donor who has expressed an interest to fund a sales program. The endowment would financially maintain the operational expenses of the program in perpetuity. The salary and benefits of the Professional Sales Instructor would be funded from ongoing SWI legislative funding.

10. Letters of Support & Letters of Commitment

Letters of support are attached from the following:

Utah State Higher Education Board Member: Regent Alan Hall
Iron County School District Launch High School: Cory Henwood
Southwest Technical College: Will Pierce
Southern Utah University Larry H. & Gail Miller Center for Entrepreneurship: Tyler Stillman
Southern Utah University Entrepreneurship Leadership Council: Jon Black

Also attached are letters of commitment for the Professional Sales Strategic Workforce Initiative from:

Touch MD: Kary Smith
State Bank of Southern Utah: Eric Schmutz
Leavitt Enterprises: Vance Smith
Lendio: Kimberly Eastman
Innoventrum:LaMont Leavitt

January 2, 2020

Esteemed Colleagues,

I am writing to invite you to support a special project at Southern Utah University. In short, the University wishes to hire an instructor in professional sales at an annual budget of $142,000. This faculty member will teach five sales courses based upon the Professional Sales curriculum used at Weber State. In addition to teaching, the instructor will coordinate with Launch High School and Southwest Tech students, manage industry internships, sales career opportunities and critical work based learning programs. I enthusiastically endorse this very valuable program.

- SUU has a relationship with Launch High School, an innovative school that is competency-based and offers students specialized training in coding, computing and robotics. A high percentage of these students are eager to enter the workforce directly. An agreement to allow these students to take entrepreneurship classes for concurrent credit is already underway, and support of this grant would afford them the opportunity to take professional sales classes concurrently as well. These concurrent enrollment classes will count towards a certificate in professional sales, in a stackable fashion.
- Students at nearby Southwest Technical College can earn a certificate of completion in programs such as Web Design, Information Technology, Software Development, or Culinary Arts. Thanks to a unique and innovative arrangement between SUU and Southwest Technical College, students at the technical school would have access to the same classes and training provided to SUU students, including professional sales. Job prospects for students with technical school certifications are greatly enhanced when combined with SUU professional sales certificates. For example, rather than being qualified to perform narrow web design duties, students who augment their technical school certifications with an SUU certification in professional sales could knowledgeably sell web solutions.
- Successful funding of this proposal will allow SUU students from across campus to have the option of getting a minor in professional sales. For example, a biology major with a minor in sales is ideally suited to become a pharmaceutical representative; a finance major with a sales minor is ideally trained for selling financial services;
- Adding a Professional Sales course to the entrepreneurial program will have major impact for students. To wit, college business founders need to know how to sell their products or services, if they hope to succeed.

Respectfully yours,
Alan E. Hall
Board of Regents

UTAH SYSTEM OF HIGHER EDUCATION

SUU SOUTHERN UTAH UNIVERSITY
351 W. University Blvd.
Cedar City, UT 84720
(435) 586-7700
www.suu.edu

To the Strategic Workforce Initiative,

I have been the director of entrepreneurship at SUU for 3 ½ years. I am the first to hold this position at SUU, and as such I have had the good fortune of creating a program where there was none before. I have been somewhat surprised to have reached the following two conclusions.

The first is that there is no program powerful enough, no amount of funding sufficient, and no mentor adequately skilled to produce viable student business *if the students can't advocate for their business by themselves.* The second and related observation is that successful student entrepreneurs are those who have learned to sell.

I write as a strong supporter for an instructor of professional sales in the Leavitt School of Business. The entrepreneurship program would like to offer a minor in entrepreneurship at SUU, and we'd like SUU to be the first program in the state *to require a class in selling for a minor in entrepreneurship*. Successful funding of a position in sales would not only benefit the proposed SUU sales program (and their partners at Launch High School and Southwest Technical College), it would have a tremendous and positive effect on the entrepreneurship program at SUU.

The entrepreneurship program aims to do two things that are somewhat out-of-step with traditional methods of entrepreneurship instruction. The first is that we advocate bootstrapping, which is the practice of starting small, profitable businesses and reinvesting profits into growing the business. This is as opposed to taking big funding and aiming for billionaire status. The second is to be wide-open to the community. The Larry H. and Gail Miller Center for Entrepreneurship at SUU hosts two pitch competitions, weekly entrepreneurship speakers, and countless other events that are open to local residents. My reason in pointing these out is that both bootstrapping and our open-door policy work together to produce economic benefits from the program that resonate beyond students and into the lives of people in this community. The successful funding of a sales position will have an impact on an array of students, but through entrepreneurship the effects will go deep into the community.

Our program is too new to have accurate numbers on jobs created and success rates over time, so the following is a good-faith estimate that stems from partial SUU data, and includes the nationwide high rate of failure among start-ups. I estimate that, when fully implemented, funding a position in professional sales would result in 5 more successful student businesses than we would have without giving students the benefit of training in sales.

I urge support of the position and give it my strongest endorsement.

Sincerely,

Tyler F. Stillman
Director of Entrepreneurship
Larry H. and Gail Miller Center for Entrepreneurship

REACHING HIGHER

IRON COUNTY SCHOOLS

CREATING A BETTER TOMORROW FOR ALL

2077 W. Royal Hunte Dr. • Cedar City, Utah 84720
(435) 586-2804 • Fax (435) 586-2815 • **irondistrict.org**

12/27/2019

Dear Strategic Workforce Initiative Review Committee,

My name is Cory Henwood and I am Iron County School District's Coordinator for Innovative Teaching and Learning. I am overseeing the development of a pioneering new school named Launch High School. Launch will open its doors Fall of 2020, with advancement between classes based on competency rather than the amount of time in a classroom. We also place a heavy emphasis on entrepreneurship, coding, computing, and robotics. In short, Launch is a High School that aims to prepare students for whatever comes next for them—be it university, the workforce or developing a student's own business.

Launch High School is working closely with SUU, especially their entrepreneurship center. Launch High School has an understanding with SUU that includes their funding and supervision of entrepreneurship competitions for Launch students. Beyond that, SUU and Launch are working towards concurrent enrollment agreements relating to entrepreneurship classes, specifically Small Business Management.

Given the strong demand for sales jobs and our close relationship with SUU, I write as a strong advocate for the funding of a position in professional sales at SUU. I estimate that between 40 to 60 students per year would take advantage of such a course when offered concurrently from Launch alone and many more from other schools throughout the county if possible. A sales class adds valuable skills that are critical for students who go directly to the workforce. The concurrent credit is valuable for students who plan on getting a SUU certificate in sales as well as those seeking a minor in sales.

I fully and wholeheartedly commend SUU's request for a position to teach professional sales, as it would directly improve Launch High School, and more broadly Iron County School District's capacity to graduate students who are prepared for the next chapters in their lives.

Sincerely,

Cory Henwood
District Coordinator
Iron County School District

SOUTHWEST TECH
SOUTHWEST TECHNICAL COLLEGE

December 31, 2019

Strategic Workforce Initiative Review Committee

Dear Review Committee,

Southwest Technical College is proud to support and participate in this proposed Strategic Workforce Initiative project. We believe the project will provide students and prospective students in our region with significantly enhanced opportunities to gain certificates and degrees in high-demand, high-wage related fields. Also, it will assist our regional industry partners by providing an expanded pool of qualified candidates in fields experiencing increasing workforce shortages.

Southwest Technical College and Southern Utah University have a positive track record of working collaboratively to create academic and career pathways which begin in high school and allow students to continue their education through accredited certificate and degree programs. The proposal will improve these pathways in business and business related programs. We are excited about the prospect of expanding our collaborative efforts and providing additional opportunities for our students to take advantage of stackable credentials which will provide multiple entry and exit points preparing them for new and advanced employment in high-demand careers.

We believe this project can help provide the structure and allow students to reach their full educational and career goals in an efficient, cost-effective way. Also, this project will expand the pipeline of students and employees seeking education and training through targeted efforts to provide knowledge and skills to add value to their employers and their industry. This project will provide the much needed structure, training, and collaboration between education and industry to benefit students and to help to create and maintain the technical workforce desperately needed by regional employers.

Sincerely,

Will Pierce, Ph.D.
Vice President of Instruction
Southwest Technical College

TouchMD

December 19, 2019

To the Review Committee,

My name is Kary Smith, and I am Managing Partner at TouchMD. TouchMD is a software company revolutionizing the consultation process in Aesthetic Health. We are a fast-growing tech-company based in Cedar City, Utah.

It is with great interest that I write this letter in support of Southern Utah University's (SUU) proposal to the governor's Office of Economic Development, Strategic Workforce Investment (SWI) initiative.

As an employer, I applaud the SWI initiative and think it has the opportunity to do tremendous good in preparing people for the jobs needed in Utah's explosive tech industry. We are desperate for quality salespeople in our company.

TouchMD wishes to express our strongest possible support of SUU's request that SWI help fund sales education at SUU, and through SUU's partnerships Southwest Technical College and Launch High School. We are extremely pleased with SUU and the education the students receive. We currently employ 10 part-time students, and in the past three years have hired 40 full-time SUU graduates.

We are in a heavy expansion mode within the Medical Tech Industry which traditionally produces very high paying sales jobs. We are currently looking at candidates in Northern Utah to fill open positions. In addition, we are opening a division within our company that distributes other Medical Tech Industry services.

Our single greatest need is skilled salespeople. Sales Education/Training represented by a certificate in Professional Selling would facilitate more Southwest Technical College and SUU hires. We would be even more interested in graduates with a minor in sales to fast track to senior sales positions within our company. Providing sales education at SUU would allow TouchMD to hire an additional 30 salespeople earning an average of anywhere from 50 to 100K per year in the next 18 months. Again, I support the SWI initiative generally and I think training students in sales would be an outstanding way of preparing them for jobs we badly need.

Sincerely,

Kary Smith

TMD
99 N Main Street, Suite 7 | Cedar City, Utah 84720
Office: 435.867.0077 | Fax: 435.867.1254 | Web: www.TouchMD.com

SUU Entrepreneur LEADERSHIP COUNCIL

SOUTHERN UTAH UNIVERSITY

Strategic Workforce Initiative Review Committee

December 19, 2019

Dear Review Committee,

I represent Southern Utah University's Entrepreneur Leadership Council (ELC). Our group consists of veteran entrepreneurs who volunteer our time and resources to mentor student entrepreneurs. With successful careers now in our rearview mirrors, this is one small way for us to give back.

I am writing to offer my sincere and heartful support for Southern Utah University's request to fund an instructor/professor to teach a professional sales curriculum at the University.

As an entrepreneur for the last quarter of a century, I can honestly say that successful entrepreneurs are essentially successful salespeople. And professional salespeople have to think like entrepreneurs to be successful. The tools, principles and skills used in both of these endeavors are virtually the same.

In my opinion, professional sales skills are actually needed in every aspect of our business and personal lives. They are skills of communication that include active listening, thoughtful questioning, understanding pain points and ultimately meeting the needs of a given individual or company. They also include life skills like integrity – representing yourself and your products fairly, setting proper expectations and delivering on promises.

Perhaps sharing a portion of the Entrepreneur Leadership Council's mission might help you understand why I feel so strongly about funding this sales position:

> In partnership with Southern Utah University, the Entrepreneur Leadership Council seeks the success of aspiring student entrepreneurs by:
>
> > 1) Educating and mentoring student entrepreneurs in gaining practical, real-world, business creation experience.
> >
> > 2) Modeling good character for student entrepreneurs.
> >
> > 3) Producing a significant, positive, and lasting impact on the economy of rural Utah and beyond.

As listed above, our priorities are to educate student entrepreneurs, to build character and to provide lasting results for the entrepreneur and for those they have an opportunity to influence. *I can think of nothing that would improve the likelihood of success in these priorities among our student entrepreneurs, more than for them to learn to sell professionally, with the utmost integrity.*

I understand that SUU is seeking to add a certificate in sales, a minor in sales, and a minor in entrepreneurship with a required sales class. I applaud SUU in these efforts.

Please accept my strongest endorsement of this new on-campus position. Additionally, I would like to commit the following ELC resources to help ensure the success of the sales program once it has launched:

The Entrepreneur Leadership Council commits to:

- Encourage our student entrepreneurs to take advantage of SUU's sales curriculum
- Use our networks to place our sales-trained students in career-trajectory positions
- Work with SUU's Larry H. and Gail Miller Center for Entrepreneurship in every way we can, to ensure the success of a quality curriculum

If you have any questions or require additional information, please don't hesitate to contact me directly at 801-472-6440 or blackstonecreek@gmail.com

Sincerely,

Jon Black,
Chair, Southern Utah University Entrepreneur Leadership

State Bank
OF SOUTHERN UTAH

377 North Main Street ♦ P.O. Box 340 ♦ Cedar City ♦ Utah ♦ 84721-0340
Phone (435) 865-2317 ♦ Fax (435) 865-2217

December 30, 2019

Dear Review Committee,

I am writing this letter of support on behalf of SUU's request for funding through the Strategic Workforce Initiative grant. State Bank of Southern Utah has enjoyed a successful relationship with Southern Utah University for many years. We have employed students and graduates to fill several internship and full-time positions at our institution over the years. We appreciate the work ethic and caliber of employee that Southern Utah University provides.

State Bank of Southern Utah was founded in 1957 by community leaders who saw a need for a local bank to provide financial services to individuals and organizations in their towns. State Bank has always put the community first. We understand the importance of providing our customers with products and services that meet their goals.

Today, State Bank has 14 locations in 12 different cities and towns. One of the most important factors of our growth has been having quality people on our team that exemplify our core values and understand the importance of the customer experience. State Bank of Southern Utah has had a long history of supporting SUU, and in turn we have been very glad to hire SUU students. The prospect of having SUU students be trained in selling and customer service is extremely exciting and one we wholly support. I have confidence that students who receive certificates or degrees in this program will be better equipped to be successful in our company.

I estimate that graduates with training in sales and customer service would allow us to hire approximately 15 interns and potentially 7 graduates over the next 5 years. Our interns make on average $11.25 per hour and new employees hired with specialized degrees make on average $45,000 per year. While these numbers are estimates and may change as our economic environment changes, I am confident that offering courses with certificates and minors in sales will result in hiring students better prepared to enter the financial services industry.

Please accept this letter as our strong support for the Southern Utah University Strategic Sales Workforce Initiative. This initiative will help boost the economy of Utah and raise the quality of our Southern Utah workforce.

Sincerely,

Eric J. Schmutz

President/CEO, State Bank of Southern Utah

Leavitt Group

December 31, 2019

Dear Review Committee,

As President of Leavitt Group Enterprises, I am writing to advocate on behalf of Southern Utah University's (SUU's) request to receive funding through the SWI grant. The Leavitt Group provides sophisticated insurance and risk management solutions. We have become the 12th largest independent insurance brokerage in the nation (Insurance Journal, Aug 2019), and we have done so using time-honored business practices.

The founder of The Leavitt Group, Dixie Leavitt, started the company in 1952 on the strength of his natural abilities as a salesperson. More than any other factor, the company's growth since then has relied on having quality people that acquit themselves with integrity and understand how to sell.

The Leavitt Group has a long and rich history of supporting SUU, and in turn we have been very glad to hire students and graduates of SUU. The prospect of having SUU student graduates who are trained in sales is extremely appealing to The Leavitt Group as employers and should only bolster our commitment to hire more of them. I have confidence that the students who receive certificates or degrees in the program will be well qualified to obtain valued employment in Utah, as, I too, am a graduate from SUU's accounting program. The education and training I received at SUU has enabled me to flourish in my profession.

We look forward to more students working through this training to help raise the quality of our Southern Utah workforce. I see short-term and long-term advantages for both The Leavitt Group and our community, and I ask you to please give their request your best consideration.

Sincerely,

Vance Smith
President, Leavitt Group Enterprises

Leavitt Group Enterprises
216 S 200 W | PO Box 130 | Cedar City, UT 84720 | Phone 435.586.6553 | Fax 435.586.1510 | www.leavitt.com

lendio

January 2, 2020

Dear Review Committee,

Southern Utah University has provided Lendio with a wealth of talent since we opened our doors in 2011. We've been lucky enough to recruit students for internships and have had several graduates fill full-time positions in multiple departments. We've found that our team members from Southern Utah University display an incredible work ethic and truly embody our culture.

Lendio is the largest small business loan marketplace in the United States and we are growing RAPIDLY. We pride ourselves on our ability to offer customers the best financial products and the most personalized service. We are delighted with the team members we have hired from SUU and their competence to deliver on these goals. As of today, there are 300 Lendions and we expect to exceed 450 by the end of 2020. Most of this growth will be in our sales, marketing, and bookkeeping departments, but all teams will expand this year.

Through our extraordinary growth, Lendio has found that some graduates are not fully prepared to be sales professionals straight out of college. We have created our own sales development training to offset this issue, but it comes at a tremendous cost to our company. The Strategic Sales Workforce Initiative that Southern Utah University is proposing would greatly benefit Lendio by providing students the necessary sales training to help them succeed and hit the ground running right out of the gate. Sales positions can be our hardest to fill, so having a source of highly educated students at SUU to fill these positions would provide an invaluable service to our company.

Please accept this letter as our strong support for the Southern Utah University Strategic Sales Workforce Initiative. This initiative will help boost the economy of Utah and keep Lendio at the forefront of small business lending.

Sincerely,

Kimberly Eastman

Kimberly Eastman
HR Manager

Jan 2, 2020

To the Strategic Workforce Initiative Review Committee,

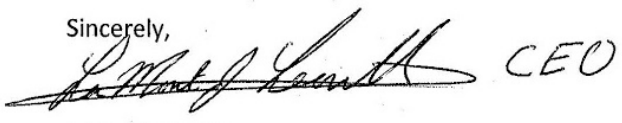
As CEO of Innoventrum and innoviHealth, I offer this letter as expression of our commitment with respect to Southern Utah University's grant application to the Strategic Workforce Initiative (SWI). Innoventrum and innoviHealth are in the SaaS technology sector and have been for many years. We have many ties to businesses and partners across the country with a strong emphasis on healthcare. I write you with great eagerness in support of SUU offering a certificate and a minor in sales.

My businesses provide software solutions for medical coding, billing, clinical documentation, revenue cycle, and compliance. Successful employees in my businesses need specialized training, such as that provided by degrees in computer science and/or healthcare coupled with on-the-job training. I have hired many good employees over the years. If I could hire potential employees that not only had the technical skills, but also the sales marketing savvy to understand how to promote/sell on more than just a list of features. Every employee needs to understand the criticality of putting the customer first and embracing the sales process. Potential customers need to feel that they are coming to the right solution they need rather than being pushed a product or service. That is why I find the possibility of SUU's offering sales education, available across the university to all majors, such an outstanding opportunity for me as an employer. It would allow specialized training in the form of a major, with the additional capacity to leverage that specialization into workforce-ready skills. As an employer, I strongly advocate for a better trained salesforce as proposed in SUU's SWI request.

My relationship with SUU includes my role on the Entrepreneur Leadership Council, a group of successful entrepreneurs committed to mentoring SUU student entrepreneurs. This program will undoubtedly have a great positive impact on them. Entrepreneurs need to market and sell their products and services, and they also must learn to represent themselves and their businesses effectively. Offering sales curriculum to entrepreneurs can only have a positive impact on student the startup initiative.

In sum, I offer my advocacy for SUU's request without reservation. I support it as a prospective employer of SUU students, and I support it as a mentor to the student entrepreneurs at SUU I mentor.

Sincerely,



LaMont Leavitt

CEO and Co-Founder, innoviHealth Systems Inc.
CEO and Co-Founder, Innoventrum Inc

Southern Utah University's

Utah Aviation Workforce Development Program

30% of aviation technicians are retiring and only *2%* are replaced annually resulting in a critical need for *754,000* technicians over the next two decades.

Veteran Transition/Professional Retraining

Military training/experience credited based on entrance exam.
Opportunities:

- Potential to test for FAA Airframe and/or Powerplant License within as little as one semester (four months)
- Retraining for industry professionals leaving shrinking industries.

CTE High School Programs

First four General Courses AMT (entire 1st semester/Online, or onsite courses.)
OR Rotor Ground School Courses

- Maintenance: two semesters left following high school (8 months)
  - eligible to test for FAA Airframe and/or Powerplant License
- Flight: Introduced to rotor flight w/ concurrent enrollment
- Cedar High, Canyon View, Parawon, Cedar Valley

STech- Dual Enrollment Classrooms/Labs

SOUTHWEST TECH
SOUTHWEST TECHNICAL COLLEGE

Management

-Nine Semesters- 3 years
-Eligible For:
☒ Aviation Management Bachelor's Degree

- Average Starting Wage: $169,128

Rotor Maintenance Major Airlines

-Five Semesters- 1.5 years
-Eligible for:
☒ FAA Airframe and Powerplant License
☒ Aviation Maintenance Associate's Degree
-A&P Technician

- Median Wage: $86,000

MRO Manufacturing

-Three Semesters- 1 year
-Eligible for:
☒ FAA Airframe Certificate OR
☒ FAA Powerplant Certificate
-Technician

- Median Wage: $44,321

SUU

SUU AVIATION

SUU Aviation led the composition of Part 147 Act S.3043/H.R.5427 which will redefine and modernize curriculum and AMT school requirements

Applicant Name: Southern Utah University College of Aviation Science and Technology

Applicant Type: Public post-secondary

Project Title: Utah Aviation Workforce Development Program

Annual Funding Request: $373,000, year 1; $320,000 annually thereafter

Project Summary: Southern Utah University, in partnership with several statewide high schools, Southwest Technical College, Weber State University, and various industry employers, is working to create an aviation workforce pathway for students to get an early start into the aviation flight and maintenance technology workforce. SUU will utilize industry partnerships, stackable credentials, dual enrollment courses, and distance learning to ensure student success at every entry and exit level within the SUU Aviation Maintenance Training Program. This workforce development program will support the existing Utah Rotor Pathway and Maintenance Pathway programs.

Counties Served: Iron County, Washington County, Utah County, Weber County

Key Partners: Schools- Cedar High School, Canyon View High School, Parowan High School, Cedar Valley High School, Southwest Technical College, Utah State University, and Weber State University. Industry- MSCAerospace, Duncan Aviation, SkyWest Airlines, Papillon Helicopters, Intermountain Life Flight, and Helicopter Association International.

Projected Outcomes:

SUU has created stackable credentials, dual enrollment programs, and distance learning modules in both maintenance and rotor flight education. Funding will allow for the proper staffing support of our CTE programs to ensure they meet their full potential. Through the Rotor Pathway and Maintenance Pathway Programs, SUU will provide a student pipeline into the aviation industry, starting students on this path as early as high school and educating them all the way through their choice of a bachelor's degree in either maintenance or rotor flight. At its start, the SUU Aviation Maintenance Program will allow for 75 students per year to become eligible for employment in the aviation maintenance workforce. Utilizing the benefits of stackable credentials and industry partners, students will become increasingly qualified for full time positions and have employment opportunities at many exit points throughout the program. Students can follow this program's path to an A&P license, AAS degrees and eventually a BS degree, and will immediately be eligible to apply for open positions in aviation and related industries. This will provide rural Utahns with lucrative career paths in a high growth industry. As SUU's AMT

Program begins to produce well-qualified applicants, SUU expects that providing an aviation maintenance workforce in southern Utah will create the potential for growth in Utah's aviation sector as companies seek to develop in the area. Through employing these faculty positions, SUU can ensure the proper staffing of the online AMT courses developed through the use of the Talent Ready Grant earlier this year, effectively expanding SUU's offerings to Cedar Valley High School and ensuring our partnership with Weber State University.

SUU also seeks to expand their reach through the support of our Rotor Pathway Program by utilizing these faculty positions to help offer rotor ground school training to rural areas throughout the state. This will be done through the purchase of a mobile simulator and online course delivery. SUU has pioneered both the Rotor and Maintenance Pathway Programs. Utilizing this grant to staff four positions for the programs will ensure statewide growth in these aviation sectors.

By focusing growth efforts on both the rotor and maintenance programs, we will ensure a greater success of the entire aerospace industry. Indefinitely dependent on one another, the aerospace industry cannot survive without the equal success of both rotor and maintenance programs through the certification of qualified new employees. For this reason, we are asking for the support of both our rotor and maintenance pathway programs through the purchase of one mobile simulator and one faculty member dedicated to its operation and overseeing the rotor pathway program, and three faculty members to launch our maintenance pathway program.

SUU Helicopter

Executive Summary:

Southern Utah University (SUU), a public post-secondary university, is requesting Strategic Workforce Initiative funding to staff the Utah Aviation Maintenance Technician Workforce Development Program, which in turn will directly support the expansion of the Utah Rotor Pathway Program. These Utah-based, nationally unique programs will be the first of their kind. The workforce programs will allow students to earn stackable credentials through Southern Utah University's strategic partnerships with other educational institutions, our utilization of dual enrollment courses and distance learning, and industry leaders.

In partnership with Southwest Technical College, SUU received Strategic Workforce Initiative grant funding last year for aerospace manufacturing and engineering education. Although within the aerospace sphere and industry, this funding was specifically for fabrication and production and is completely disconnected from any rotor and/or aviation maintenance training education. The aerospace industry is self-sustaining and independent, with special fabricators, engineers, mechanics, and pilots trained under certain standards and practices. Without a sufficient quantity and quality availability of mechanics and pilots, programs such as aerospace manufacturing and engineering will suffer as well, no matter how strong of an educational and training base there is. Because of the deep disconnect at an educational level and a contrastingly high dependence in real-world settings, it is crucial that all facets of aerospace education are supported equally.

The aviation industry is in the midst of the greatest maintenance technician and pilot shortage in its history. The combination of unprecedented growth and an aging employee base means that these shortages will continue to be felt globally. Without technicians to inspect and maintain aircraft and a shortage of pilots to fly them, the entire aviation industry will suffer. Southern Utah University's new and collaborative programs will counteract these shortages and provide the aviation industry with fully trained, qualified technicians and pilots for years to come. Governor Herbert has set Aerospace as one of his top priorities, and SUU believes that developing a strong aviation workforce in southern Utah will aid in aerospace growth throughout the entirety of our state.

These programs will be led by Southern Utah University College of Aviation Science and Technology, in partnership with Canyon View High School, Cedar High School, Parowan High School, Cedar Valley High School, Southwest Technical College, and Weber State University. Our partner schools are located in mostly rural settings with little-to-no access to education in this field. Our program is a one of a kind, statewide initiative in Utah that will involve a greater diversity of students than any single program has ever been capable of.

SUU Aviation will offer the beginning portion of our recently accredited AMT curriculum to local high school students by the start of next school year, giving high school seniors the opportunity to begin SUU's Associates of Applied Science Aviation Maintenance Technician Degree program prior to their high school graduation. This effort was partially funded by the Talent Ready Grant earlier this year which was used to purchase a portion of the required equipment and to fund the development of first semester online courses. SUU's current curriculum is designed to offer certificates for each level of completion. Upon completion of each level of stackable credentials, students will become eligible for increasing levels of entry positions into the aviation workforce.

With Airframe and Powerplant (A&P) technicians in unprecedented demand across Utah and the world, this pathway will also elevate students' standard of living by bridging southern Utah to the opportunities that a career in aviation maintenance can provide. SUU's College of Aviation Science and Technology is requesting $373,000 in order to staff four faculty positions and ensure the programs' ability to offer courses to high school students, as well as ensure an efficiently scaled growth of the program, guaranteeing that SUU will be able to match the demand for maintenance technicians and pilots. In an effort to take this another step further SUU has recently partnered with Weber State University and is in the process of establishing dual enrollment maintenance and flight programs, a lucrative effort that can be expedited with the addition of staff funding.

Students that are currently enrolled in the Utah Aerospace Pathway Program (UAP) attend classes multiple times per week at SUU's airport location. By leveraging educational space at Southwest Technical College and the pre-existing learning space at SUU's airport, training for the AMT program can be offered at an existing and available location to teach several high school programs.

Utah is home to the first Rotor Pathway program in the world, and the program's capability will increase with the funding of the Utah Aviation Workforce Development Program. SUU is poised and ready to offer rotor ground school to high school students throughout the state in support of the Utah Rotor Pathway Program. A vital component necessary to administering these courses is a mobile flight simulator that will be used in conjunction with the faculty positions previously requested. SUU is requesting $53,000 to purchase the Helimod Mark III Simulator. This will allow the Utah Rotor Pathway Program room for expansion.

SUU AMT Hangar

Current Situation:

The aviation industry is facing a detrimental technician shortage. Boeing has projected a need for thousands of aviation technicians in the next 10-15 years. Currently, 30% of the workforce is at or near retirement, meaning that aviation companies will struggle even more to sufficiently fill the projected vacant technician positions. Without enough technicians properly trained to fill these roles in coming years, the aviation industry will be severely affected. Limited availability of technicians will lead to potentially unsafe environments since there will not be enough technicians to properly perform inspections and devote the necessary attention to each aircraft.If this shortage continues, aviation industry companies will be forced to shut down, beginning with smaller companies, until even the largest companies have no option but to close their doors. Without aviation technicians, the world of aviation will cease to operate.

There are many causes for this technician shortage. One cause is the current lack of training facilities. There are not enough schools offering technician programs to meet industry demands for aviation maintenance technicians. Adding to this, the limited number of schools that do have operating technician programs do not have the capacity to train the same volume of students as they receive in applications. Opposing this severe lack of training facilities, the aviation industry itself is expanding greatly and is anticipated to continue this growth at a steady rate over future years. This means that companies will need even greater numbers of technicians than those who are currently employed. In addition, many people who may be interested in becoming

technicians face many tedious barriers and do not have the opportunity nor the funding available to them to attend school for two to four years. Unfortunately, these barriers do not fall away once a student is finally able to earn his/her certificate or degree. New technicians must often go through an additional training phase specific to their new company's aircraft and equipment procedures. This means that valuable time must be spent on learning new equipment rather than working on the aircraft, prolonging both the technicians' careers and hindering technicians' combined ability to have a significant impact on their growing deficit in the aviation industry.

Maintenance is an essential part of the aviation industry. Without maintenance technicians, aircraft would be left in unsafe and unchecked conditions, meaning pilots would be unable to fly because of the hazardous condition of the aircraft. Even the lucky companies who have the minimum number of technicians will experience great delays, with inspection and repair processes moving at slower rates than they would if properly staffed.

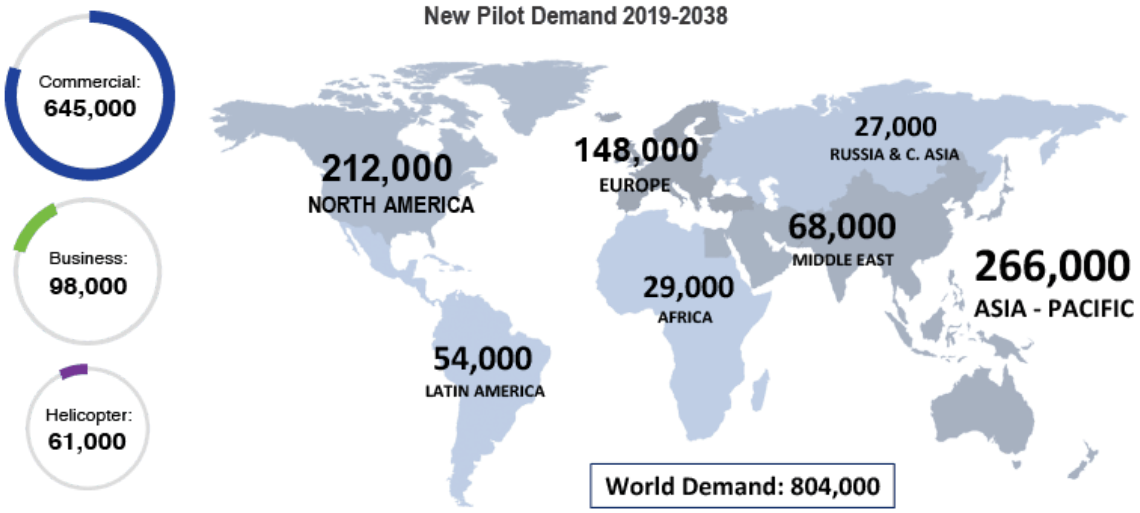
If enough technicians can be trained to fill vacant positions as they appear, the aviation industry will be properly equipped to keep aircraft and people safe, and will once again thrive and expand. SUU Aviation has implemented an innovative and aggressive approach to mitigate the technician shortage and provide the industry with fully trained, qualified technicians. SUU's Aviation Program plans to implement online Aviation Maintenance Training courses that will allow high school students to get a head start on maintenance courses. Being the first to offer technician courses online, SUU will pave a new path and introduce a wider population of students to this high-demand industry. With the opportunity to begin the career pathway as a junior or senior in high school, students will have the ability to transition directly into the aviation workforce within a mere two years of graduating high school. This will boost the number of individuals who earn industry-recognized credentials, enabling them to compete for employment. In turn, the industry will grow from the availability of trained technicians and students will be enabled to begin their career and start earning a professional salary much earlier than their classmates in comparable industries.

The College of Aviation Science and Technology at Southern Utah University has positioned itself as a leader in the helicopter training industry. Currently, SUU produces 10% of all helicopter pilots in the United States and employs 1% of all commercially certificated helicopter pilots. With a current U.S. commercial pilot population of only 15,000 and an industry demand for over 61,000 helicopter pilots, the state of the industry is dire at best. SUU Aviation is ambitiously continuing our expansion in an effort to close this gap.

Similar to mechanics, helicopter pilots are vital to Utah, the nation, and the world. Most significant to Utah are helicopter fire-fighting and EMS services. On a yearly basis multiple Utah lives, homes and property are saved from disaster by the helicopter industry. Neighboring states

thrive on helicopter tourism, especially in areas like Las Vegas and the Grand Canyon. It is also common that Utah-based helicopter graduates spend a few years in Nevada gaining experience as tour pilots. These tour companies rely on programs such as ours at SUU to produce well-qualified helicopter pilots in order to make their operations successful.

An additional study by the University of North Dakota demonstrated that, at current production rates, the US will miss the mark by almost 8,000 pilots. Due to the even larger shortage of airline pilots, the helicopter industry is losing approximately 500 pilots a year to the airlines.



Industry Need:

The aviation industry is facing a detrimental technician and pilot shortage and current training and production rates of new and skilled aviation maintenance technicians and pilots will not account for attrition.

Aviation Technical Education Council's (ATEC) model projects that the mechanic population will decrease 5% in the next 15 years. New entrants make up 2% of the population annually, while 30% of the workforce is at or near retirement age. Meanwhile, forecasts by the U.S. government and Boeing project a need for thousands of additional mechanics in the next 10-20 years (Aviation Technical Education Council Report 2018.)

The helicopter industry is currently experiencing the worst personnel shortage since vertical flight first became commercially viable. Of the existing helicopter pilots, more than 50% are over the age of 50 years old. Boeing' recent study regarding the future demand for pilots indicates a need for 61,000 helicopter pilots worldwide over the next 20 years.

Technician wages increase with each passing month, with the current average starting wage at $56,000/year. Average wage for an A&P mechanic has risen to $86,000 and is expected to continue rising in the coming years as demand increases.

The shortage of qualified Aviation Maintenance Technicians (AMT's) and pilots, coupled with global growth creates a fantastic opportunity for Utah students within this pathway program. SUU's aviation pathway programs and our concurrent enrollment proposal will introduce Utah residents to careers they may have never-before known existed.

With multiple exit points throughout the AMT program, students will have increasingly lucrative job opportunities upon completion of Airframe Certificates, Powerplant Certificates, A&P Certificates, AAS degrees, and eventually an opportunity for BS degrees. After completing the required FAA testing, students will be eligible to apply for the current 609 open technician positions in Utah and the 3,977 open jobs across the U.S. An added encouragement for students, many aircraft technician careers allow technicians to live in Utah and travel to work around the world.

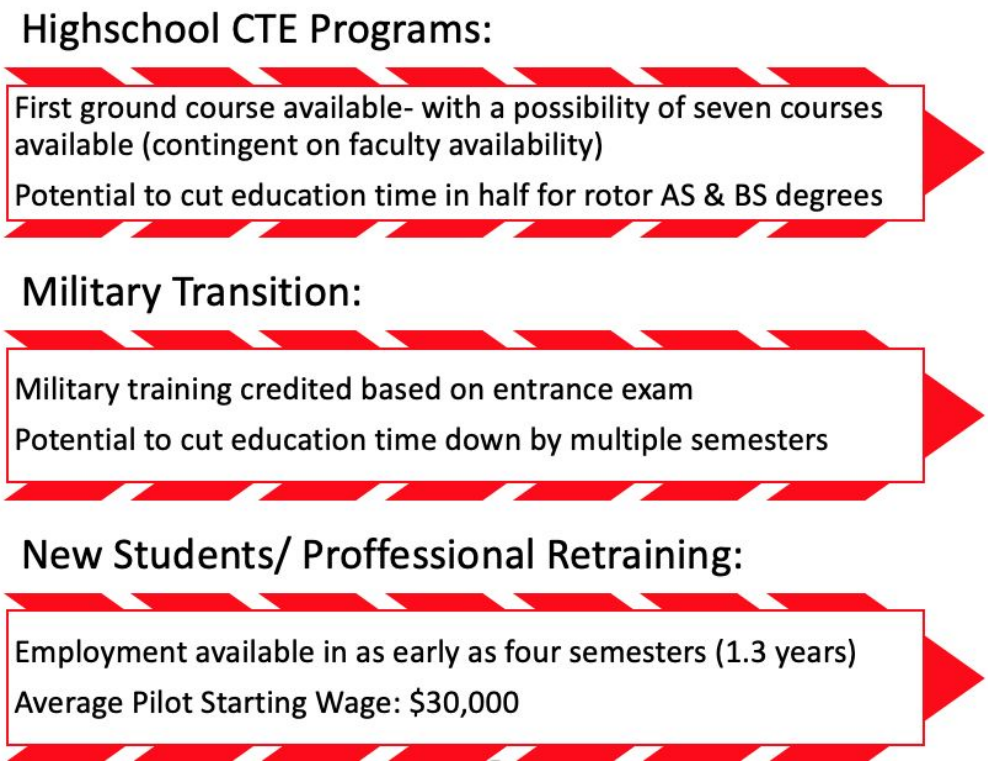
AMT Pathway Program Exit Points with Relative Employment and Salary Opportunities

In addition to expanding outreach for the AMT Program, SUU is striving to do the same for our Flight Program. The SUU Aviation Flight Program, similar to the AMT Program, offers students multiple exit points throughout their education process with increasing employment opportunities along the way. Our program will allow students to earn their FAA Pilot Certificate and either an AAS or BS degree depending on student preference.

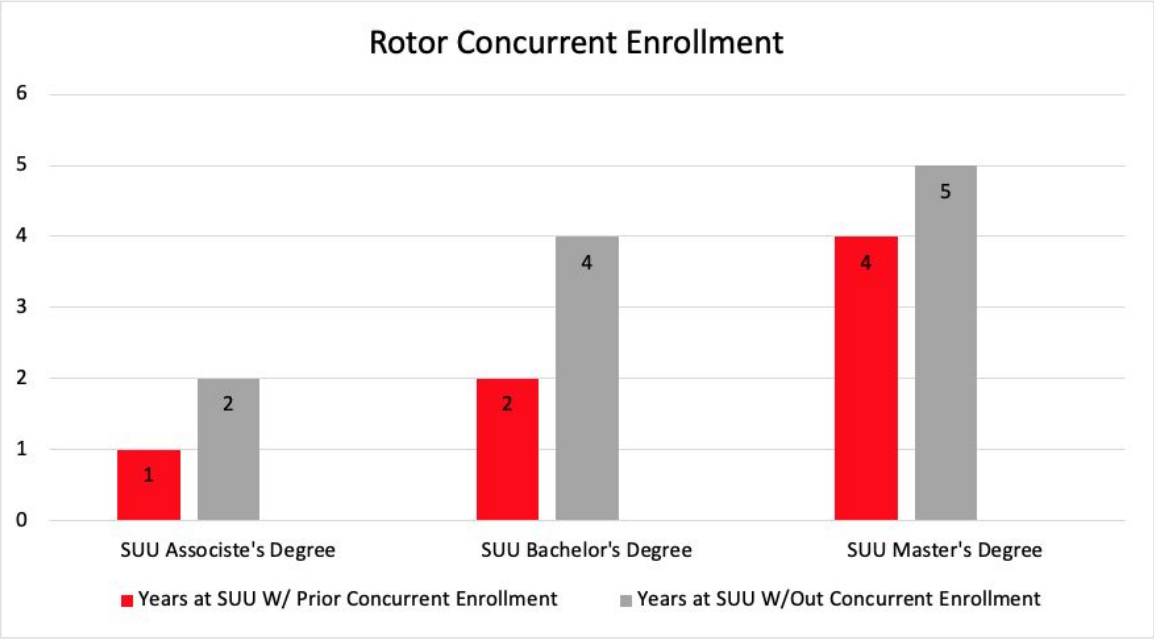
Flight students will first become eligible for employment after four semesters in the program (roughly 1.3 years.) At this point, students will have the opportunity to receive their FAA Commercial Pilot Certificate and roughly 175 flight hours. Moving further along in SUU's stackable credential program, students can continue their education and become an FAA Certified Flight Instructor (CFI) or an FAA Certified Flight Instructor with Instrument (CFII) Ratings and roughly 200 flight hours. This will expand student opportunities within the aviation industry and allow them to instruct at flight schools and continue to build their flight hours.

With multiple FAA certifications, all-inclusive educational training, and completion of the necessary flight hours, students will become qualified for a multitude of instructor and/or pilot positions. Multiple program on-ramps and concurrent enrollment opportunities will fast-track a wider population of students into industry careers as demonstrated in the following graphics.

Rotor Program On-Ramps:



Concurrent Enrollment Timeline Comparison:



Project Plan:

Building a multifaceted workforce development program in southern Utah:

SUU Aviation, in collaboration with Utah high schools, Southwest Technical College, Weber State University, and industry partners, is in the process of creating a workforce development program within its current aviation program. Students' option of several entry and exit points throughout the program will enable students to obtain certifications and employment in both maintenance and rotor flight in as soon as three semesters. Taking this even further, if sufficient funding for staffing becomes available, this program has the potential to offer a multitude of classes to high school students for concurrent enrollment credit, and dual enrollment at Weber State University. Some of these courses can even include hands-on helicopter simulation experience. The purpose of our proposal is to strengthen the aviation workforce throughout Utah by implementing a pathway from high school all the way through a bachelor's degree with several entry and exit points that offer employment opportunities along the way.

Workforce Development Program:

SUU Aviation, in partnership with Cedar High School (Iron County,) Canyon View High School (Iron County,) Parowan High School (Iron County,) Cedar Valley High School (Utah County,) Southwest Technical College (Iron County,) and Weber State University (Weber County,) is seeking funding to staff aviation maintenance and rotor flight training courses with qualified instructors.

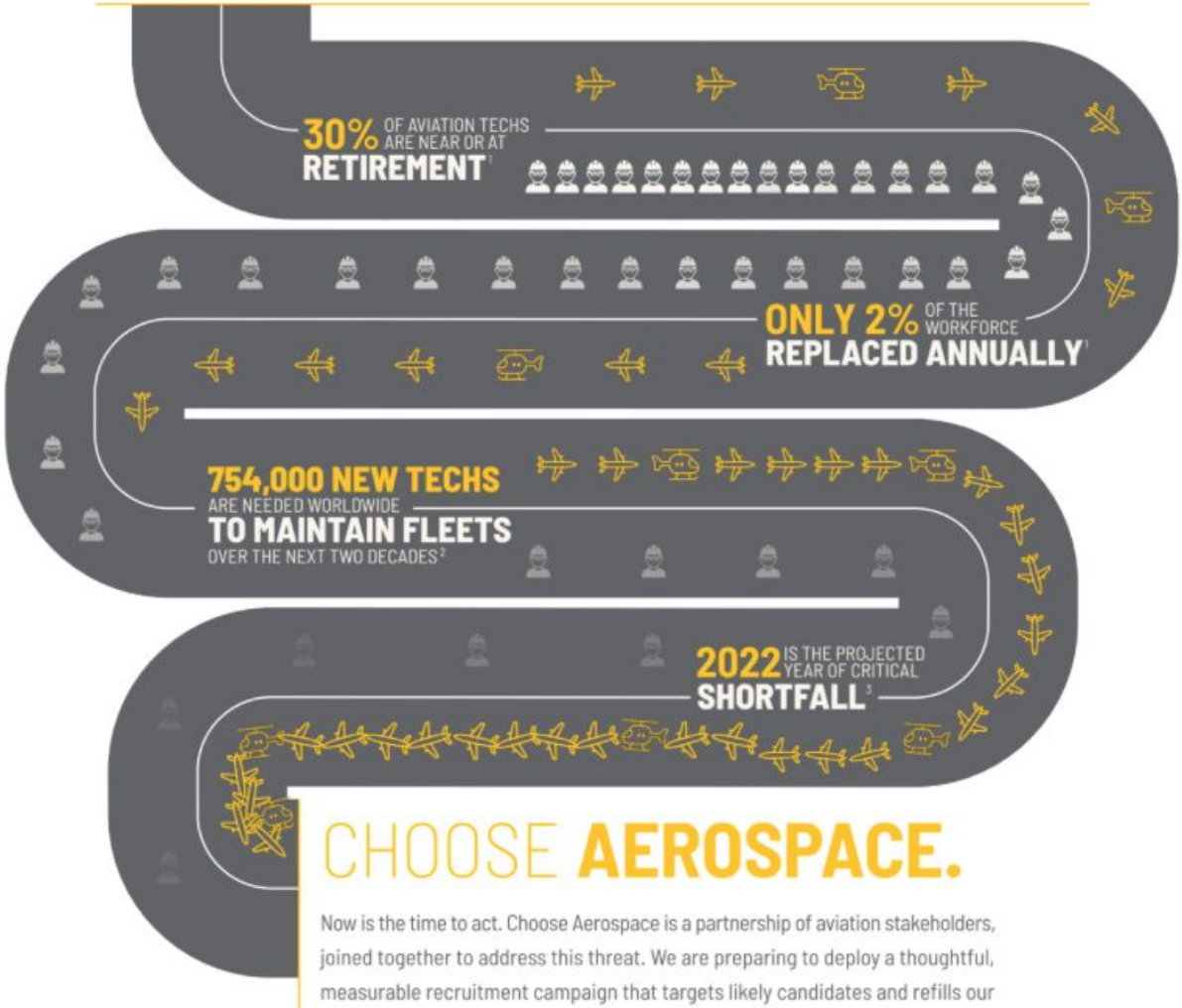
By applying this funding to staffing needs for the AMT and rotor programs, SUU can ensure that properly qualified faculty will be available to administer concurrent enrollment courses. SUU will be enabled to offer these courses at a volume that will directly support the Utah Rotor and Utah Aviation Maintenance Pathway Programs and ensure the growth of the aerospace industry in Utah.

SUU's AMT program is currently designed to offer stackable certifications for Airframe, Powerplant, A&P, Associates in Applied Science Aviation Maintenance Training, and by 2021, a bachelor's degree option in Aviation Maintenance Management.

Much like the AMT program, SUU's Rotor Pathway Program is currently working with high schools across the state to continue the growth of the program. By adding faculty and a mobile simulator, SUU will be able to offer off-site courses to a wider population of students and continue towards the target growth of our pathway programs.

GET INVOLVED, **OR GET GROUNDED.**

While the aviation industry is poised for continuous growth, a massive shortage of a qualified technical workforce threatens to clip our wings.



CHOOSE **AEROSPACE.**

Now is the time to act. Choose Aerospace is a partnership of aviation stakeholders, joined together to address this threat. We are preparing to deploy a thoughtful, measurable recruitment campaign that targets likely candidates and refills our pipelines—to ensure we stay in the air for decades to come.

CHOOSEAEROSPACE.ORG

Project Timeline:

SUU has received FAA approval of the AMT school curriculum, as well, SUU has received accreditation from Northwestern Accreditation Commission. SUU is currently awaiting a final sight visit and certification from the FAA which is scheduled before the end of 2019 to ensure a January 2020 program launch. The curriculum is designed to offer certificates for Airframe, Powerplant, AAS AMT, and soon, a BS in Aviation Maintenance Management.

With the funding of these four faculty positions, SUU will be able to ensure that the first semester of AMT lab courses will be offered to high school students located at our Southwest Technical College location starting Fall 2020. The Fall 2020 will prospectively also be the first semester of joint courses with Weber State University. SUU has already developed a pathway program for high school students to take an electrical training course. Adding these positions will allow SUU to expand course offerings to high school students to include the complete Generals section of the program, and various flight and maintenance lab courses to WSU students for the foreseeable future.

Upon receiving funding, SUU Aviation's program directors will purchase the Helimod Mark lll simulator from *Ryan Aerospace* and hire the four faculty positions. In the fall semester of 2020, high school students will begin taking concurrent enrollment courses using these simulators at Cedar Valley High School.

Budget Request and Explanation:

A total of $373,000 is being requested from SWI for year 1, $320,000 annually thereafter.

- $320,00 for four qualified faculty members
    a. Years 1-3: $50,000 salary + $30,000 benefits X 4 positions = $320,000
- $53,000 for purchase of one mobile Helimod Mark III simulator
    a. Year 1 only: $53,000

Matching Contributions

- SUU has currently invested significant funds in the development of its Aviation Maintenance Training Program. This investment includes equipment, curriculum, classrooms, and lab space. Some of this investment came as part of the Talent Ready Grant awarded to SUU to purchase equipment for the program.
- The director and developer of this program is paid through Southern Utah University and is dedicating 25% of his time. No additional funding will be required for his salary.

- The facilitator for the rotor flight simulation courses is paid through the Southern Utah University and is dedicating 40% of his time. No additional funding will be required for his salary.

Purpose of Funding:

Funding for the Aviation Workforce Development Program will be used to fund and fill four faculty positions and purchase a mobile simulator. The faculty positions will be responsible for delivering the aviation maintenance and rotor curriculum and administering labs at various locations. Through receiving funding for instructors, the aviation program will be able to ensure that the concurrent enrollment courses will be delivered. The simulator will be used to ensure hands-on education for helicopter flight training at Cedar Valley High School and other locations throughout Utah.

Collaborations and Partnerships:

SUU Aviation boasts a large number of partnerships with the aviation industry, trade organizations, and other institutes of higher learning.

For these pathway programs, SUU has secured new partnerships with the following institutions:

- Cedar High School (Iron County)
- Canyon View High School (Iron County)
- Parowan High School (Iron County)
- Cedar Valley High School (Utah County)
- Southwest Technical College (Iron County)
- Weber State University (Weber County)

In addition to our educational partnerships, SUU has also partnered with the following industry leaders:

- Classic Aviation
- Papillon Helicopters
- MSCAerospace/Syberjet
- Duncan Aviation

- SkyWest

These companies have been working closely with SUU to develop industry-specific curriculum. and share the common goal of creating industry-ready technicians and pilots. Our partner companies are also willing to support their employees in career progression through training, internships, externships, field trips, career mentoring, and summer employment.

Southern Utah University College of Aviation Science and Technology is actively involved in multiple national organizations and associations including:

- Northrop Rice Foundation
- Helicopter Association International (HAI)
- Women in Aviation
- Aviation Technical Education Council (ATEC)

SUU Aviation program is an active member of the HAI International Training Committee. We also hold a role as Chair of the Legislative Committee for ATEC. In a collaborative effort, SUU and ATEC passed aviation legislation last year requiring the FAA to allow for more advanced training.

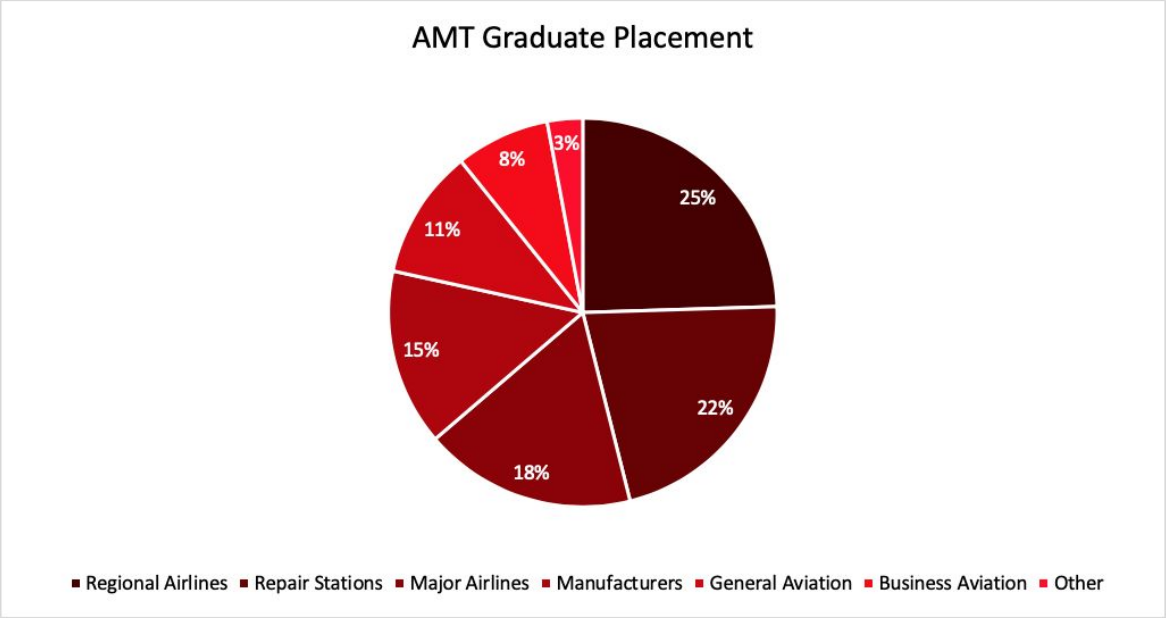
Additionally, the College of Aviation Science and Technology at SUU is already a partner in the UAP and continues to work side by side with Syberjet, MSCAerospace, Department of Workforce Services, Cedar High School, Canyon View High School, Parowan High School, Cedar Valley High School, Southwest Technical College, and Weber State University.

SUU Mechanic/ Student

Outcomes:

By developing and properly staffing this workforce program for Utah students, SUU will continue to provide a sustainable student pipeline into both the maintenance technician and helicopter pilot sides of the aviation industry. Students will be exposed to aviation maintenance and flight as lucrative career opportunities and offered a direct pathway into these positions. As the state of Utah is perpetuating the growth of aviation, we must find ways to support the aviation professionals needed in order for this to occur. At its start, SUU expects to introduce 25 students per semester into the AMT program and hopes to increase our growth rate with the addition of faculty members. Courses will be offered throughout Fall, Spring, and Summer semesters, allowing for as many as 75 students per year to benefit from this pathway. Once fully established and properly staffed, the AMT Program will be able to offer both morning and evening courses to ensure maximum utilization of time, equipment, and space. Students will progressively complete the program, earning an SUU AMT AAS degree and FAA A&P license, making them instantly eligible to apply for open positions over the course of the full program. Beyond aviation, AMT students will also be eligible for jobs with wind turbine companies, theme parks, oil rig maintenance, entrepreneur opportunities, and hundreds more that employ similar equipment and engines.

This workforce program will perpetuate the growth of the current Rotor Pathway Program by allowing for proper staffing and adding hands-on experience with the proposed simulator. SUU expects that, with the growth of the pathway program, a continual stream of helicopter pilots will be introduced to the industry. This influx of young pilots will help overall Aerospace growth in Utah and ensure that companies can sufficiently staff their operations.



Sustainability:

SUU's aviation program will greatly benefit from the ongoing funding of these faculty positions, and enable both the AMT and Rotor programs meet their goals for developing the aviation workforce in Utah. Positions will be guaranteed for years to come and growth of the workforce development program will be allowed through ensurance of the necessary staffing to offer these courses. SUU leverages any grant funds with marketing efforts, staffing, and delivery of the programs, and will continually be sustained by the AMT and Rotor Programs' tuition and fees. As a public university, SUU seeks to meet industry needs through ongoing collaborative efforts, pathway programs, and workforce pipeline development.

Conclusion:

By effectively staffing the Aviation Workforce Development Program, the Utah aviation industry will be met with a steady stream of newly certified maintenance technicians and helicopter pilots, effectively allowing for growth in the struggling aviation industry for the foreseeable future. Southern Utah will gradually produce a workforce that will be able to support aerospace industry growth not just locally, but throughout the entire state. Through SUU's Utah Aviation Workforce Development Program, a wider population of students will have the opportunity to take concurrent enrollment aviation courses and earn stackable credits with careers available at each level. The advancement of the Utah Aviation Workforce Development Program will ensure that the Utah Rotor Pathway Program and the Utah Maintenance Pathway Program can be properly supported and eventually exceed their current potential. With the proper availability of instructors and equipment, SUU's aviation programs will excel and produce fully trained, qualified aviation technicians and pilots who will help develop the aviation workforce in Utah and the world.

SUU Fixed Wing/ Airport

SOUTHWEST TECH
SOUTHWEST TECHNICAL COLLEGE

Strategic Workforce Initiative Grant Review Committee

November 8, 2019

Dear Review Committee,

Southwest Technical College is proud to provide full support to the Southern Utah University Aviation program for the proposed Strategic Workforce Initiative funding. We believe the stackable credential program will provide students and prospective students in our region with significantly enhanced opportunities to gain certificates and degrees in in the high-demand technical field of Aviation Maintenance. Also, it will assist our regional and statewide industry partners by providing an expanded pool of qualified candidates in this field which is experiencing tremendous workforce shortages.

Southwest Technical College and Southern Utah University have a positive track record of working collaboratively to create academic and career pathways which begin in high school and allows students to continue their education through certification and degree programs. The proposal will help to improve pathways in the aerospace sector by enhancing the existing Utah Aerospace Pathways opportunities already available in Southern Utah. We are excited to be housing classroom space for the new SUU AMT program and for the prospect of expanding our collaboration and providing additional opportunities for our students to take advantage of concurrent enrollment and stackable credentials which provide multiple entry and exit points preparing students for new and advanced employment in high-demand technical careers.

We believe this project can help provide the structure to allow students to reach their full educational and career goals in an efficient, cost-effective way. Also, it will expand the pipeline of students and employees seeking education in the aerospace industry through targeted efforts to provide students with the knowledge and skills to add value to their employers and their industry.

Sincerely,

Will Pierce

Will Pierce, Ph.D.
Vice President of Instruction and Accreditation
Southwest Technical College

SkyWest AIRLINES®

December 3, 2019

Strategic Workforce Initiative Committee,

At SkyWest Airlines, we believe in developing and building individuals to promote successful and positive environments. With this in mind, we are pleased to give our full support to Southern Utah University College of Aviation's Rotor Pathway and Maintenance Pathway programs and believe they are extremely worthy of SWI Grant funding.

SkyWest Airlines is a proud partner of SUU Aviation and is enthusiastic to support the expansion of their programs. With a great student focus and understanding for real-world aviation operations, SUU Aviation has consistently produced reliable pilot and technicians.

By developing these programs and establishing new ones, SUU Aviation's reach will expand in a way that the entire aerospace industry can benefit from. With a current detrimental need for certified pilots and aviation mechanics, SUU's rotor and technician programs are crucial to the survival and the success of the world of aviation. SkyWest Airlines has great faith in SUU's Rotor Pathway and Maintenance Pathway programs to fill this void and to build-up the national aerospace industry.

Through funding this program, thousands of students will be presented with new opportunities that would otherwise be unavailable. SUU Aviation has grasped a key component that has seemingly been lacking in the past by shifting the focus to developing students and providing them with thorough and relevant knowledge.

SkyWest Airlines is proud to continue to support and partnership with SUU Aviation through their innovative developments and ambitions.

Cordially,

Lori Hunt
VP | People

444 South River Road // St. George, Utah 84790 // *Phone* 435.634.3000 // www.skywest.com

Papillon Grand Canyon Helicopters

December 5th, 2019

Strategic Workforce Initiative Grant Committee:

Papillon Helicopters is a proud partner of Southern Utah University Aviation. Located in the Las Vegas region, we at Papillion operate in relatively close proximity to SUU and have the unique opportunity for a closer partnership. We continue to witness first-hand the success and enthusiasm of SUU Aviation's directors, instructors, and students. This positive and encouraging environment that has been established within this school reaches outwards by building students up and making them excited for moving forward with their careers. This benefits Papillon by providing us with ambitious young pilots who are excited about what they do. With this in mind, we fully support SUU Aviation's request for SWI program funding.

The positive effect that SUU Aviation's environment has on new pilots makes us at Papillon excited to support the growth of this institution. Expanding on the Rotor Pathway program and establishing a Maintenance Pathway program will extend SUU Aviation's influence to new students, new instructors, and new industry leaders, ultimately benefiting and growing the entirety of the aviation industry. The industry as a whole continues to grow and impact more areas of everyday life. This growth coupled with the already diminishing aviation workforce creates a dire demand for programs such as those at SUU. Supporting SUU's rotor and maintenance programs will also support Papillon and other aviation leaders and the entire aerospace industry, which will ultimately benefit the national economy and the widespread services that rely on aviation.

We greatly anticipate watching SUU's rotor and maintenance programs continue to grow and evolve, and fully support any additional funding and/or resources that will enable the program to do so.

Sincerely,

Mark G Slack
Vice President Administration

Papillon Grand Canyon Helicopters
Boulder City Headquarters
1265 Airport Road
Boulder City, Nevada 89005
T 702.638.3200
W papillon.com

Helicopter Association International

1920 Ballenger Avenue, Alexandria, VA 22314-2898
703-683-4646 | rotor@rotor.org
www.rotor.org

Dedicated to the Advancement of the International Helicopter Community

December 17, 2019

RE: Strategic Workforce Initiative Application

To whom it may concern:

I am writing this letter to demonstrate Helicopter Association International's support of the Utah Rotor Pathway Program. The academic career pathway this work-based learning program provides can make a significant difference in the quality and employment eligibility of the industry pilot and mechanic workforce. Employing skilled pilots and mechanics with strong academic career upbringings makes a measurable difference in business success, which in turn, improves the product we are able to provide to the public.

The rotor industry is facing a severe workforce shortage for both pilots and mechanics. The Utah Rotor Pathway Program is a unique collaborative initiative designed to help address this shortage. Industry partners provide work-based learning opportunities and skilled educator partners provide a new generation with the education necessary to succeed. This partnership is important - knowing how to fly or maintain an aircraft is a skill of a basic pilot or mechanic but possessing a firm academic understanding of the job can turn that same person into a professional aviator or mechanic.

The Utah Rotor Pathway Program is currently collaborating with Southern Utah University and Cedar Valley High School to provide work-based learning. HAI is committed to working with the Utah Rotor Pathway Program in any way we can to support the goal of providing qualified professional aviators and mechanics to the industry. The industry is in desperate need of qualified and prepared professionals. This program is relevant, timely, and will improve the quality of the workforce. Please consider funding this application.

Thank you for your consideration and support.

Respectfully,

Cade Clark
Vice President of Government Affairs

MSC AEROSPACE

December 4th, 2019

Governor's Office of Economic Development
Strategic Workforce Investment Grant Review Committee

Dear Review Committee:

It is with great interest that MSC Aerospace (MSC) and its subsidiaries Metalcraft Technologies and SyberJet Aircraft write this letter in full support of Southern Utah University's (SUU) College of Aviation Science and Technology's request for Strategic Workforce Initiative Grant funding to support the Rotor Pathway and Maintenance Pathway program. SUU is a vital partner to the Iron County business community and has been a longtime supporter of our organizations.

At MSC Aerospace, we have collaborated, supported and maintained a successful partnership with SUU's aviation programs. We believe these programs provide relative and useful training and education to aerospace students while encouraging new opportunities for both individuals and the industry as a whole.

With pipeline employment opportunities, SUU students and MSC Aerospace alike benefit from these programs. Students in both the rotor and maintenance programs are able to create unique connections and establish a well-rounded industry understanding. This program benefits recently certified pilots and mechanics by providing timely employment opportunities. Similarly, MSC Aerospace also benefits from these programs through the availability of properly trained and educated talent to fill vacant positions.

By developing reliable and consistent pilots and mechanics from the start, the aviation industry will benefit on a large scale. As MSC and companies anticipate the certification of the new avionics in the SJ30 and the production increase to support existing customers and the production and delivery of the SJ30, there will be an increase in positions and the need to have a pipeline of potential candidates. We are highly supportive of the efforts at SUU to provide these additional educational and career development opportunities for their students and support their initiative to obtain the funding necessary to give them the resources and tools to make these programs successful.

With confident support,

Chuck Taylor, President
SyberJet Aircraft

Megen Ralphs, Vice President – Business Systems
Metalcraft Technologies

Intermountain℠ Life Flight

Operations Center
250 North 2370 West
Salt Lake City, Utah 84116
(800) 321-1911 Communication Center
(801) 321-3330 Business Number
(801) 321-3327 Fax

December 17, 2019

RE: Strategic Workforce Initiative Application

To whom it may concern:

I am writing this letter to demonstrate support of the Utah Rotor Pathway Program. The academic career pathway this work-based learning program provides can make a significant difference in the quality and employment eligibility of the industry pilot and mechanic workforce. Employing skilled pilots and mechanics with strong academic career upbringings makes a measurable difference in business success, which in turn, improves the product we are able to provide to the public.

The rotor industry is facing a severe workforce shortage for both pilots and mechanics. The Utah Rotor Pathway Program is a unique collaborative initiative designed to help address this shortage. Industry partners provide work-based learning opportunities and our skilled educator partners provide a new generation with the education necessary to succeed. This partnership is important - knowing how to fly or maintain an aircraft is a skill of a basic pilot or mechanic but possessing a firm academic understanding of the job can turn that same person into a professional aviator or mechanic.

The Utah Rotor Pathway Program is currently collaborating with Southern Utah University and Cedar Valley High School to provide work-based learning. I am committed to working with the Utah Rotor Pathway Program in any way I can support the goal of providing qualified professional aviators and mechanics to the industry. The industry is in desperate need of qualified and prepared professionals. This program is relevant, timely, and will improve the quality of the workforce. Please consider funding this application.

Thank you for your consideration and support.

Respectfully,

Kent Johnson, Director of Operations
Intermountain Life Flight
801-321-3362

DUNCAN
AVIATION

January 3, 2020

To whom it may concern,

Duncan Aviation is greatly anticipating the launch of Southern Utah University's (SUU) Aviation Maintenance Technician program and the outreach pathway programs that it will include, and fully endorses Strategic Workforce Initiative Grant funding. With a severe industry shortage of mechanics, this one-of-a-kind program will provide our company with a direct line of certified and well-trained technicians to employ.

The aviation industry is currently experiencing a severe shortage of qualified aviation technicians, an insufficiency that is expected to widen in the coming decade. SUU's AMT program has set out to ease and eventually diminish this shortage, a movement that we at Duncan Aviation have full faith in.

With a new approach to mechanic training, SUU's program will become available to a wider population of students through their outreach and pathway programs, and the offering of online courses. With a greater availability to this specialty education, SUU's program will reach more students and produce greater volumes of well-trained mechanics than the industry has ever experienced before. We are also hopeful that the forward-thinking movement occurring within SUU Aviation will inspire other institutions to follow in their footsteps and take similar measures.

The development and success of this program will, in turn, benefit Duncan Aviation and the aviation industry as a whole through the establishment and maintenance of a greater availability of certified aviation technicians.

We look forward to the expansion of SUU Aviation's Maintenance Pathway program and the positive impact it will have on the AMT world.

Sincerely,

Jennifer Monroe
Senior Talent Acquisition Specialist
Duncan Aviation

www.DuncanAviation.aero

402 475.2611 Business
800 228.4277 Toll Free

3701 Aviation Road | P.O. Box 81887 | Lincoln, NE 68524

COLLEGE of AGRICULTURE and APPLIED SCIENCES
UtahStateUniversity

December 30, 2019

RE: Strategic Workforce Initiative Application

To whom it may concern:

I am writing this letter to demonstrate support of the Utah Rotor Pathway Program. The academic career pathway this work-based learning program provides can make a significant difference in the quality and employment eligibility of the industry pilot and mechanic workforce. Employing skilled pilots and mechanics with strong academic career upbringings makes a measurable difference in business success, which in turn, improves the product we are able to provide to the public.

The rotor industry is facing a severe workforce shortage for both pilots and mechanics. The Utah Rotor Pathway Program is a unique collaborative initiative designed to help address this shortage. Education partners provide a new generation with the education necessary to succeed and our industry partners provide work-based learning opportunities to complement what the students learn in the classroom. This partnership is important - knowing how to fly or maintain an aircraft is a skill of a basic pilot or mechanic but possessing a firm academic understanding of the job can turn that same person into a professional aviator or mechanic.

Utah State University is currently collaborating with the Utah Rotor Pathway Program and our other education partners, Southern Utah University and Cedar Valley High School to provide work-based learning. Our University is committed to working with the Utah Rotor Pathway Program in any way we can support the goal of providing qualified professional aviators and mechanics to the industry. The industry is in desperate need of qualified and prepared professionals. This program is relevant, timely, and will improve the quality of the workforce. Please consider funding this application.

Thank you for your consideration and support.

Respectfully,

Taylor C. Schenk

2500 N 900 W FL-10 Logan, UT 84321 Phone: (435) 797-5171

Canyon View High School

166 West 1925 North
Cedar City, Utah 84721

Phone - (435) 586-2813
Fax - (435) 586-2849

Dennis Heaton
Principal
Julie King
Assistant Principal
Kyle Robinson
Assistant Principal / Athletic Director

October 29, 2019

Dear Strategic Workforce Initiative Grant Committee:

Iron County School District works well with Southern Utah University in a variety of ways that benefit our students here at Canyon View High School. We offer a significant number of academic concurrent enrollment courses that allow our students to get started on a college degree and begin gaining the skills that will prepare them for the world of work. It was exciting to speak with members of SUU's Aviation Department about developing concurrent enrollment courses in power mechanics and aviation that would allow high school students at CVHS to begin working toward a career in the aviation field while still in high school.

At CVHS, we would strongly support and commit to participating in aviation and power mechanics pathways. We endorse SUU's efforts to gain grant funding to staff these pathways with instructors and make them available to high school students here in Iron County. We believe that this type of collaboration will benefit our students. An additional benefit will be that our students will be oriented to and begin preparation for careers in a field that is in desperate need of qualified candidates for employment. This effort is great as an educational effort and much needed as a workforce development strategy.

Sincerely,

Dennis Heaton

Kim Blackner Counselor
KarriAnn Raddon Counselor
Ashley Whiting Counselor
Chad Winters Social Worker
Shelly Goodwin Office Manager

CEDAR VALLEY HIGH SCHOOL

1389 East Aviator Avenue
Eagle Mountain, Utah 84005
Phone: (801) 610-8825

December 13, 2019

Strategic Workforce Initiative Grant Committee:

Cedar Valley High School is collaborating with Southern Utah University College of Aviation Science and Technology to provide advanced education, training, and opportunity to Utah students. At Cedar Valley High School, we are dedicated to applying pre-existing aviation pathways and aligning with the national Career Clusters and the Utah CTE Career Pathway, Concurrent Enrollment Aviation Classes with SUU.

As a pilot, Utah Rotor Pathway Program committee member, and principal of one of Utah's newest high schools, I am committed to working with SUU's innovative aviation maintenance program. CVHS is enthusiastic to confront the perpetually rising demand surrounding air travel.

Pathway programs nourish Utah's skilled workforce and set-up students for premium wages in high-demand fields and positions. These partnerships come to great fruition for both individuals and the industries they are aimed for. According to the Utah Department of Workforce Services, air transportation companies in Utah currently employ 6,316 workers.

Our pathway programs with SUU Aviation will help Cedar Valley High and surrounding schools provide experiences that will ignite student interest in aviation mechanics. Cedar Valley's current student enrollment is 1,920 students. We are anticipating growth to reach 2,600 students by year 2023. We are opening up aviation offerings to Westlake High School that has an enrollment of 2,450 for 2019-20 school year. We are currently in the registration process and so far, we have 20 students enrolled in our early morning Private Pilot's Course. We plan to expand course offerings if awarded this grant and will promote and grow the Aviation Maintenance program.

In addition, plans to reward Aviation Maintenance pathway completers is underway where CVHS will offer a certificate of completion with a medal awarded to be worn at graduation.

Likewise, SUU Concurrent Enrollment possibilities will be discussed in student counseling guidance sessions along with social media posts about the Aviation Maintenance Pathway Program.

We marketed our Aviator Pathway Program at our grand opening in August 2019 and showcased the Civil Air Patrol, Experimental Aircraft Association, and various air medical companies like Life Flight, Air Methods, Classic, and more. Aviation is going to be one of the most important emphasis at Cedar Valley High School.

CVHS is honored to be a part of this wonderful opportunity to take part in developing resolutions for the nation-wide aviation industry shortages.

Sincerely,

Courtney Johnson

Courtney Johnson

CEDAR HIGH SCHOOL

"Dedicated to cultivating responsible citizens through lifelong learning and community involvement."

October 30, 2019

Strategic Workforce Initiative Grant Committee:

I am writing to express my support of the new Southern Utah University College of Aviation Science and Technology AMT program and the opportunities that our partnership will provide to students of the Iron County School District. Presently, we have already established an Aerospace Pathway program and look forward to expanding upon this to include rotor and maintenance mechanic concurrent enrollment pathways with SUU Aviation. Our partnership with SUU allows us to continue to enhance training opportunities for Iron County high school students while also building a competitive and well-equipped workforce to meet the demands of the aviation industry.

Cedar High School students will continue to benefit from this agreement and we will partner with SUU in our efforts to ensure this program is successful. As the university works to build their aviation programs and help students connect with the industry, we will give students the opportunities to be successful in this growing field.

We are committed to working with SUU Aviation in any way we can to support them, by providing qualified students to get a jump-start in this industry while they are still in high school. This program is relevant, timely, and will improve the quality of our workforce. Please consider full funding of their proposal and help us meet the growing needs of our community and our global economy.

Thank you for your time and continued support of Southwest Utah.

Respectfully,

Terri Sanders
Assistant Principal
Cedar High School

Principal John M. Dodds | Assistant Principal Terri Sanders | Assistant Principal Danny Lewis | Office Manager Lori Stubbs | Counselors Natasha Tebbs, Nick Parson, Jennifer Denhalter

Ph. 435.586.2820 Fax: 435.586.2826 703 West 600 South Cedar City, Utah 84720 chs.ironk12.org

Parowan High Rams

168 North Main • P.O. Box 337 • Parowan, Utah 84761 • 435-477-3366 • Fax 435-477-3743

"Reaching higher to make a positive difference"

November 1, 2019

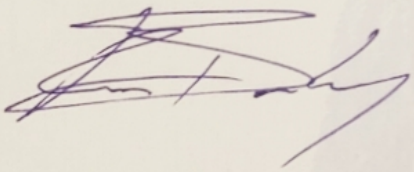
To the Strategic Workforce Initiative Grant Committee:

Parowan High School is joining with Southern Utah University in a collaborative partnership comprised of education, training, industry, and aviation employment leaders throughout Utah and four additional states. The consortium was chartered to develop participation in existing and new aviation pathways for rotor and fixed wing programs. To help accomplish the goals and outcomes of the grant, Parowan High School is committed to utilize established aviation pathways and will align with concurrent enrollment aviation classes with SUU and be involved with the development of aviation curricula and business and SUU partnerships.

PHS is committed to being a part of one of the most forward-thinking aviation maintenance programs in the nation. With this commitment, we are confident that our partnership will change the ways that high schools interact with industry leaders and universities. Specifically, we are committed to addressing workforce trends of a rising demand of increased airline and charter travel. Demands for air maintenance personnel are also due to attrition rates of retiring mechanics. Aviation maintenance pathways will help feed our Utah aviation mechanics pipeline with a skilled workforce that will pay premium wages in professions under high demand.

This partnership will emphasize skills needed to successfully prepare young people for the work environment and show the relevance of academic classes to future career and educational goals. PHS is enthusiastic to be a part of this opportunity for discovering innovative solutions for the national aviation maintenance shortages by bridging private industry, education, Southern Utah University, and the support of the Strategic Workforce Initiative Grant Committee.

Sincerely,



Principal	*Athletic Director*	*Superintendent*	*Office Manager*	*Counselor*
Kim Bailey	*Alana Benson*	*Shannon Dulaney*	*Maggie Topham*	*Ava A. Chamberlain*

ALPINE SCHOOL DISTRICT

Educating All Students To Inspire Learning And To Protect Our Freedoms

December 11, 2019

Strategic Workforce Initiative Grant Committee:

Alpine School District (ASD) is excited to be collaborating with Southern Utah University to provide advanced education and training for Utah high school students. At Alpine School District, we are dedicated to applying pre-existing pathway programs and aligning with the national Career Clusters, Utah CTE Career Pathways and Step-up Utah concurrent enrollment.

ASD is enthusiastically committed to working with SUU and other universities to create an aviation program that will allow students to earn an aviation CTE certificate, AAS and/or AS in rotor or fixed-wing Pilot, and an AS in an aviation maintenance. We are excited to support these aviation programs and face the perpetually rising demand surrounding air travel.

ASD greatly values, recognizes and promotes CTE pathways and concurrent enrollment programs. These viable learning opportunities sustain Utah's skilled workforce, set-up students for premium wages in high-demand fields, and result in an educational degree that encourages employment opportunities. According to the Department of Workforce Services, air transportation companies in Utah currently employ 6,316 workers, demonstrating the relevance and importance of aviation-specific pathways.

The pathways and concurrent programs will provide experiences to our students that will ignite interest in aviation programs. Our own Cedar Valley High School (CVHS) is very aviation-driven magnet program, offered to students of other ASD schools. We plan to expand CVHS's aviation courses to include rotor/fixed-wing aviation simulation and maintenance, making this partnership with SUU Aviation an even more exciting opportunity. Our goal with CVHS aviation and the entirety of Alpine School District is to design, refine, and build a world-class example of what public education partnered with colleges and industry leaders can do to promote rotor and fixed-wing aviation for Utah students.

ASD has made advances and taken initiative to partner with industry leaders, designing industry exposure experiences such as field trips and internships with our industry partners. Specific to aviation, these include Duncan Aviation, Intermountain Life Flight, and our Utah Rotor Pathway Program committee members' business partners. We are confident that students will become excited about aviation after these experiences and take an interest in the pathway programs.

Alpine School District is honored to partner with Southern Utah University Aviation and take part in developing resolutions for the nation-wide aviation industry shortages and to educate Utah students to be the most experienced and educated applicants. We eagerly support and highly recommend the funding of SUU's Rotor and Maintenance Pathway Programs.

Sincerely,

Sam Jarman
Superintendent
Alpine School District

REACHING HIGHER

IRON COUNTY SCHOOLS

CREATING A BETTER TOMORROW FOR ALL

2077 W. Royal Hunte Dr. • Cedar City, Utah 84720
(435) 586-2804 • Fax (435) 586-2815 • **irondistrict.org**

October 30, 2019

Strategic Workforce Initiative Grant Committee:

I am writing to express my support of the new Southern Utah University College of Aviation Science and Technology AMT program and the opportunities that our partnership will provide to students of the Iron County School District. Our partnership with SUU allows us to continue to enhance and expand upon training opportunities for Iron County high school students while building a competitive and well-equipped workforce that will ardently meet the current demands of the aviation industry. We have previously established an Aerospace Pathway program and look forward to expanding upon this to include rotor and maintenance mechanic concurrent enrollment pathways with SUU Aviation.

Our partnership with SUU continuously benefits our students in unique ways and Iron County School District is committed to ensuring the success of this additional program. We are enthusiastic to provide our high school students with new opportunities for future success and prosperity in such a lucrative industry by supporting the university as they continue to expand their aviation program.

The Iron County School District is dedicated to coordinating with SUU Aviation by making training available to capable students who will get to begin training for a fruitful career in a growing industry before graduating high school. The new SUU AMT training program will continue to advance and expand a currently diminishing workforce, benefiting the industry as a whole and individual students and future mechanics through significant and innovative opportunities. I believe that this program is in the best interest of both Southern Utah's youth and the aviation industry, and ask you to consider full funding of their proposal. If you have any questions please feel free to contact me; greg.sanders@ironmail.org cell 435-559-1458

Respectfully,

Greg Sanders
Career and Technical Education Director
Iron County School District

SoftCell
BIOLOGICAL RESEARCH

December 13, 2019

To Whom it May Concern:

SoftCell Biological Research is a St. George-based biotech company with patented, cutting-edge technology that has opened the door to L-form bacteria and fungi, which we are finding to be important, hitherto unrecognized pathogens causing a broad variety of acute and chronic diseases. We believe that our technologies will lead us to effective measures for preventing and treating some of the most problematic illnesses that now evade effective treatment.

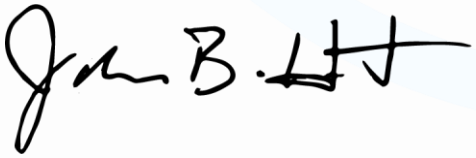
Our ongoing partnership with Dixie State University has been mutually beneficial. We benefit from bright, motivated DSU undergraduate students working in our laboratories. They, in turn, receive research experience that helps qualify them for admission to first-tier medical, dental, veterinary and other graduate schools throughout the country. Others who do not wish to pursue graduate degrees often join SoftCell as fulltime employees. Indeed, ninety percent of our current, salaried workforce attended DSU.

We are in the middle of a major expansion. This week, we opened our 5,800 square-foot laboratory in the Atwood Innovation Plaza, which will house our gene sequencing and bioinformatics operations. In its current configuration, it can accommodate up to 50 employees and student interns. Early next year (2020), we will complete a 13,000 square-foot, CLIA-certified diagnostic laboratory in the Fort Pierce industrial zone.

In addition to our being able to train several dozen student interns on an ongoing basis—multiples more than our current capacity—we anticipate hiring 40 CLIA-certified technicians in 2020, and an additional 120 scientists and technicians the following year. Our experience has been that most of our brightest interns and employees come from Southern Utah. We believe that our advances at SoftCell will attract many of the brightest local students, as they learn of the potential of the company. We, in turn, pledge to give them state-of-the-art training that can become foundational for their careers, whether in science or the medical arts.

We therefore heartily endorse the current SWI proposal, and pledge to open as many internship positions as possible.

Sincerely,



John Brent Hunt, JcD, Ss.P
Founder/CEO
Soft Cell Biological Research
435-705-1782

BIOTECH STACKS

WASHINGTON COUNTY SCHOOL DISTRICT
AND DIXIE STATE UNIVERSITY

STRATEGIC WORKFORCE INVESTMENT PROPOSAL

DIXIE STATE UNIVERSITY BIOTECH STACKS

BIOTECH CERTIFICATE:
Increasing the Biotechnology Capacity of Southern Utah

In 2015, according to the Utah Governor's Office of Economic Development (GOED), there were over 1,000 life science companies in the state employing over 30,000 Utahns who had salaries 161% above the state average. Nearly one out of six jobs in Utah is in the Life Sciences industry. Job growth in the life science sector has been higher than the national average, with a 9.2% increase in jobs from 2007-2010 outpacing the growth nationally from the entire decade which grew 8.4% from 2001-2010. This growth has made the Life Sciences one of the high-need, strategic industry clusters identified by the GOED with sub-clusters in Medical Devices and Equipment, Drugs and Pharmaceuticals, Research, Testing and Medical Labs, and Biomedical Distribution. Locally, ¢¦¬z ª ¥ § - ¦ ¬u ¦ bzu £ ¬~xu ª z «¬u ª ¬zy u ¦ y z ° ¨u ¦ yzy ¬~z ª j ª zx « § ¦ ` z ¦ § ¥ x« ¨ ª § } ª u ¥ u ¦ y m§{¬ \ z £ £ [§ £ § } xu £ « ¦ ¬~z ¨ ª § xz«« § { w - £ y ¦ } uyy ¬ § ¦ u £ laboratory {ux £ ¬ z« Local educational institutions need ¬§ increase in the skilled labor force in southern Utah. One of our ¦ y - «¬ ª ± ¨u ª ¬ ¦ z ª «, SoftCell Biological, estimates that they will need to hire 90 lab technicians this year alone (their letter is attached).

Our advisory council of local industry leaders identified two critical needs that must be addressed to support this burgeoning economic growth in southern Utah. The **first**, is to provide well-trained individuals for entry-level lab positions requiring a basic foundation in biology, chemistry, computer programming, and general lab skills which can be acquired in high school. Region 2 (includes Utah) is predicted to need an unusually high number of these skilled professionals (2014 report by the Coalition of State Bioscience Institutes), with 32% of all Life Sciences jobs requiring a high school diploma compared to 14% nationally. The founder of SoftCell Biological has told us that his company will need ten of these entry-level employees for every person with a college degree that they hire. However, the feedback we have from local industry is that local high school graduates require significant and costly training to bring them up to speed and that these employees often leave to finish college creating a financial burden for local companies. The **second** need is to help build the pipeline of students interested in pursuing college degrees in the biotechnology fields. A certificate that provides this basic training and simultaneously makes it easier to advance to Associate's and Bachelor's degrees addresses both of these needs.

Both of these needs are met by the new Certificate of Proficiency in Biotechnology (CPB) at Dixie State University. The CPB is unique because it can be potentially completed by students before they graduate from high school through Concurrent Enrollment (CE) in partnership with Washington County School District (WCSD). Even if they do not finish the CPB high school, all remaining credits in the CPB can be completed in a single year at DSU. At the same time, students who have made significant progress toward completing the credits qualify for work-place-based learning through our apprenticeship program with regional biotech firms.

This past fall, we promoted the upcoming CPB to the counselors and STEM educators in WCSD and local high schools have expanded the courses for the CPB they are currently offering, but they are not available in all high schools. We are requesting funding to provide the valuable lab experiences these students need and to expand the availability of courses across WCSD.

Requested funds will cover the cost of instructors and advisors to expand the number of high schools offering CE courses that count toward the CPB. Funds will also be used to create a unique "completer" lab course to give CE students access to expensive technical equipment and add ten additional hours of laboratory coursework to the new CE chemistry course now offered in WCSD as a direct result of the CPB. This will allow these students to complete the full chemistry requirement for the CPB without needing to take a traditional semester-long lab course.

STACKABLE CREDENTIALS

Students completing the CPB will not only be highly qualified for entry-level positions, but they will also be well situated to continue their education in the biotechnology fields. All of the courses are requirements of DSU's Bioinformatics Bachelor's degree and they also meet many of the first-year requirements for any of the biological or chemical degrees offered at DSU as well as the Bachelor's in Computer Science.

If high school students take the Biotechnology course and pass the CTE Biotechnology certification exam they are qualified for entry-level lab positions ($10-$15/hr), but less than 50% of students who take the exam pass it and need more training to be eligible for these jobs. The CPB has its greatest impact providing that training through classes hand-selected by our advisory council of local biotech employers. Three of these same employers host promising students in their labs for 6-20 weeks of work-based learning.

Advanced high school students can complete the CPB before they graduate. We already have on WCSD student on track to do so this spring. Less advanced high school students can start on the coursework as soon as they are ready, saving time and money with every course they complete. Any remaining course work can be completed within a year at DSU. SoftCell Biological, one of our key industry partners, has hired a number of students who have completed some or all of the CPB coursework and provides 20 internships for these students annually.

Five courses, amounting to fourteen of the 21 minimum credits required by the CPB, count toward general education requirements for an Associate's or Bachelor's degree. With the completion of the CPB, students only need to complete another 21 credits to earn an Associate's degree and they are well on their way to completing a Bachelor's degree. Graduates with Associate's degrees have more laboratory experience, especially if they intern with a local company, and so are eligible for lab positions paying $13-$20/hr. Those with Bachelor's degrees are eligible for jobs earning more and are also well situated to pursue graduate degrees with even higher earning potentials.

COURSE: A student completing any of the required courses for the CPB would have a stronger background in biotechnology and could obtain an entry level job. If they take the high school Biotechnology course (only offered at one school), they can take the CTE Biotechnology certification exam. If they pass the exam, they are qualified for some entry-level lab technician positions.

CERTIFICATE: A student completing all 21-22 credits of the CPB will have sufficient knowledge and skill to be highly competitive for entry-level jobs with salaries starting at $10-15/hour. These students require considerably less on-the-job training than their peers and have been hired by local companies.

ASSOCIATES DEGREE: Students could stack the CPB toward the completion of an Associates of Science by taking the additional 18-33 credits (depending on the courses chosen) required for this degree.

BACHELOR'S DEGREE: Students who stack the CPB toward the completion of a Bachelor's would be eligible for more advanced lab technician positions in management and starting salaries of $14+/hour leading to a career with a median salary of around $62,000. Stacking the CPB and Bachelor's degree also speeds up the time it takes to graduate -most STEM fields can take a minimum of three years of course work and the CPB guides them to take courses that will count toward these degrees.

ENROLLMENT PROJECTIONS

The demand for CE courses has been growing dramatically with increases ranging from 25% to nearly 29% in the past three years. These students make up nearly 18% of the entire student body of DSU. who are looking to earn college credit to reduce the time it will take them to graduate. Students interested in the biological and chemical sciences need very specific courses for this to work. The CPB courses stack with existing STEM degrees. Educating WCSD students and teachers about the program this year has increased the demand for concurrent enrollment. In fall of 2019, there are 64 Washington County CE students enrolled in just the biology courses required by the CPB compared to 57 students enrolled in any of the CPB courses in 2017. One CE student and one DSU student will earn the CPB this spring and 30 more are a single course away from earning the CPB. An additional 44 students are six credits shy of completing it. We expect to have 20 students completing the CPB by spring 2021. To date, students working toward the CPB have largely indicated an interest in continuing with the college educations, but five of these students have been working for SoftCell Biological part-time. Success of this program will be measured by student enrollment in CPB courses, and through employer feedback collected through annual interviews with the supervisors of student employees.

BUDGET REQUEST

ON-GOING FUNDING	
1 Full-time student advisor shared between WCSD and DSU [1,2]	$65,000
Full-time Faculty position in biology [1,2]	$105,000
Extra Chemistry personnel for "completer" lab course for CE students	$20,000
Chemistry teaching post-doc[1,2]	$75,000
Marketing of Biostacks	$10,000
TOTAL	$275,000

1. Staff will be based at DSU but will be responsible for working with WCSD students as well.
2. Total dollar amounts for positions include both salaries and the standard benefits package at DSU of health insurance, 401K contributions, etc. equal in value to approximately 27% of salary.

INDUSTRY DEMAND

Based on past industry growth, we expect about 4,500 new jobs being created in the life sciences every two years in Utah based on projections from the Department of Workforce Development. Job growth in the life sciences has grown in Utah even when it has been stagnant nationally. For details on local demand, please see industry letters of support. Our current advisory committee includes representatives from SoftCell Biological, and Intermountain Healthcare.

CONCLUSION

DSU has consulted with local industry leaders to increase the skilled workers in our region after hearing for years about the lack of a qualified workforce in southern Utah. DSU is a rapidly growing institution, which still retains the flexibility to develop programs that are directly relevant to local employers. We have an established Employer Advisory Committee to make sure that our program continues to meet their needs and keeps them relevant and the current feedback from them has been excellent.

The CPB meets a critical need in Washington County as these businesses continue to grow and the city of St. George expands with the development of three large high-tech business parks.

BIOTECH STACKS

WASHINGTON COUNTY SCHOOL DISTRICT | DIXIE STATE UNIVERSITY

Entry Level	Academic Level	Career Level

BACHELOR'S DEGREE OPTIONS

- BS Chemistry
- BS Computer & Information Technology
- BS Computer Science
- BS Biology
- BS Bioinformatics

Students who stack the CPB towards a Bachelor's degree would be eligible for positions of $14+/hr leading to a career with a median salary of $62,000.

AAS DEGREE

By taking an additional 18-33 credits, students stack the CPB toward completion of an Associate degree.

CERTIFICATE + DEGREE

CERTIFICATE

Students completing all 21-22 credits of the CPB will have sufficient knowledge and skill to be highly competitive for entry level jobs with salaries starting at $10-15/hour.

CONCURRENT ENROLLMENT

Biology * (5-6 credits)

Chemistry (5 credits)

Math (4 credits)

Computer Science (6 credits)

Optional Apprenticeship (1-8 credits)

* partially fulfilled if Biotechnology course passed with a C or higher

HIGH SCHOOL

BIOTECHNOLOGY COURSE

Washington County School District
121 West Tabernacle
St. George, Utah 84770
Telephone: (435) 673-3553
Fax: (435) 673-3216

SUPERINTENDENT LARRY G. BERGESON, M.ED.

December 9, 2019

To Whom It May Concern:

On behalf of Washington County School District, I am writing in support of our ongoing and expanding partnership with Concurrent Enrollment opportunities for high school students taking courses in Biology and Chemistry through Dixie State University.

As part of this expansion, we have identified 'qualified' WCSD faculty members in developing this CE opportunity for our students. This effort will include an expanded 'Chemistry Lab Boot Camp' to support the required additional lab time and resources for students.

We also recognize that many of our students will be seeking career opportunities in the area of BioTech – which will be enhanced through this cooperative effort. With support in the classroom and through extensions with staff members creating more community connections – which will more efficiently meet the needs of our local economy in the growing area in the health sciences.

We look forward to the continued development of this program – which supports the growing need in this high-wage and high-skilled area of our economy.

Respectfully,

Dave Gardner
Director of Career & Technical Education

Intermountain-
Precision Genomics

January 2, 2020

To whom it may concern:

I am writing in support of a Certificate in Biotechnology offered by Dixie State University.

Dixie State and Intermountain have been successful partners for many years. We believe that offering a certification will create a biotech pipeline for younger students. Additionally, the Certification in Biotechnology has helped strengthen the culture of biotech skilled employees. The interns we hired through this program have been excellent. This program is not only producing more skilled workers before college graduation but also creating a clear path for degree completion.

As many of you know, Intermountain has set out to be a world-leading organization in precision genomics. With our precision genomics and new destination cancer center, we are bringing groundbreaking research as well as new and innovative ways to treat patients in Southern Utah. This type of pioneering research requires in-depth knowledge and application of biotechnology. Intermountain would like to strengthen our partnership with Dixie State University and inspire young students to enter biotechnology while offering Intermountain's support to hire qualified candidates.

We anticipate the biotechnology sector will contribute significant economic and job growth in the St. George area and surrounding regions. As such, demand for qualified and talented employees will increase, as will opportunities to engage with organizations in this field. It will be important for these students to take part in the Intermountain Precision Genomics internship.

This project has our full commitment, and I feel this is an outstanding program needed within our community.

Sincerely,

Gary R. Stone,-RN,-EAGHIE
Executive Director, Precision Genomics

600 S Medical Center Drive• St. George, UT 8-1790

January 2, 2020

Dear Grants Committee:

As President & CEO of the St George Area Chamber of Commerce and the CEO & Co-Founder of the Women's Influence Center I fully understand the need for funding to support positions at DSU and Washington County School District (WCSD). This funding will afford four strategic workforce services positions to provide lower division college classes to train a skilled workforce.

Every Community has a "Gem" and our gem is Precision Genomics. Biotech is a burgeoning industry in southern Utah creating hundreds of jobs over the next decade and the biotech program is needed to train students to fill those jobs. This year we will host the CAIRN Symposium bringing thought leaders from all over the world. This symposium will break down barriers between industries of tech, science & engineering and will escalate the need for our future generation of workforce.

The positions, along with funding for apprenticeships will also aid in helping non-traditional women, in this community, to be financially independent. As a woman and CEO of our non-profit organization, I see firsthand how this will make a difference in the lives of the women and daughters. Also, as CEO of the 4th largest Chamber in the state of Utah, I see the need of our local businesses and economic development. This funding is a positive direction and a huge benefit to our local community.

I've observed and have been part of many programs at DSU and they do amazing things to make this community thrive. Please give this proposal your full consideration. If you have any questions I can answer, feel free to contact me at 435-628-1650 x-5 or Pam@StGeorgeChamber.com.

Thank you,

Pam Palermo

Pam Palermo
President/CEO
St George Area Chamber
& Women's Influence Center

DSU DIXIE STATE UNIVERSITY
ST. GEORGE, UTAH

Don Willie, MPA
Executive Director
Atwood Innovation Plaza
Zions Bank Business Resource Center

December 19, 2019

Dear Grant Review Committee,

As the director of the Atwood Innovation Plaza, I am thrilled to provide a letter of support for this proposal. In my position at Dixie State University, I am responsible for developing and implementing entrepreneurship programing across campus as well as providing hands-on training and support to local small businesses and entrepreneurs in St. George, Utah.

Our office is very interested in the success of this proposal as it provides a critical avenue to develop highly-trained talent who are able to contribute to our burgeoning economy and STEM industries. It also empowers local entrepreneurs with knowledge, skills, networks and resources.

We believe that this program has the ability to generate immediate impact and long-term results for our community and for the South West region of Utah. The return on investment is tremendous especially with recent and forthcoming developments that are providing world-class opportunities for students and industry professionals right here in St. George. These developments include the following:

1. Atwood Innovation Plaza – Southern Utah's largest entrepreneurship center, which includes the largest public makerspace in the state of Utah as well as a 5000 sq/ft biomedical research lab.

2. Cairn Symposium – An annual gathering of global thought leaders in Science, Technology and Engineering. This symposium discussed the convergence of these industries and charted new opportunities for collaboration and innovation across sectors and across industries.

3. Tech Ridge - A new technology hub being developed that will open it's first building to private tech companies in 2021. This master planned development includes office buildings, housing and recreational opportunities designed to attract and retain world class tech talent and companies to St. George, Utah.

Finally, I have had the opportunity to work with the originator of this proposal and her team extensively through my current position and have full confidence in her delivering outstanding results. She has established community partnerships and has the buy-in from local industry. I believe this proposal will be very successful if awarded funding.

Sincerely,

Don Willie

DSU DIXIE STATE UNIVERSITY
ST. GEORGE, UTAH

Trevor Clingman
Program Manager
Atwood Innovation Plaza
Zion's Bank Business Resource Center

December 10, 2019

Dear Grant Review Committee,

It is my pleasure to provide a letter in support of this proposal. As Program Manager for the Zion's Bank Business Resource Center at Atwood Innovation Plaza (ZBBRC), I am responsible for extending the services of the ZBBRC to rural communities in Washington and Kane counties. I work directly with small business startups providing entrepreneurs with hands-on training, support, and access to corresponding resources.

The ZBBRC is in full support of this proposal and acknowledges its potential to impact Southern Utah. As a partner of Dixie State University, the ZBBRC introduces and promotes services from federal, state, local, and private business service providers to encourage entrepreneurship, provide assistance for startups, drive small business growth, and contribute to economic development. By providing individuals with STEM education and leveraging our resources, expertise, and networks, participants will be able to further their education and explore entrepreneurship opportunities within those industries.

The ZBBRC has initiated the creation of several pipeline programs that will stimulate the growth of key target industries identified through state and federal reports. In collaboration with the originator of this proposal and her team, we will leverage our resources and add an entrepreneurial component to this program that will inspire entrepreneurship within STEM careers and industries. This component will offer participants the opportunity to pursue traditional industry employment, as well as the ability to explore an entrepreneurial route.

It is my belief that if this program is provided funds it will find immense success and generate a significant long-term impact for the entire region.

Sincerely,

Trevor Clingman

Strategic Workforce Initiative Proposal: Advanced Materials and Electronics Stackable Pathway

Primary Contacts: Steve Williams, steve.williams@usu.edu, Trevor Robinson, trevor.robinson@usu.edu

Project Title: Advanced Materials and Electronics Stackable Pathway

Summary: In partnership with Bridgerland Technical College (BTECH), Ogden-Weber Technical College (OWTC), Davis Technical College (Davis Tech) and Cache, Box Elder, Rich, Ogden, Weber, School Districts, Utah State University proposes developing a new pathway for Advanced Materials and Electronics to meet the needs of the Aerospace and Defense economic cluster in the State of Utah. This program is designed to establish partnerships and develop a stackable credential option for students and employers in northern Utah who are seeking additional training and pathway to a bachelor's degree in Advanced Materials, and Electronics.

The stackable pathway options include: 1) students in secondary education who explore advanced materials and/or electronics courses at either their high school, concurrent enrollment with USU, and/or through the technical college system. The students can transition from a secondary education program to either a technical college in their service area or enter the Associate of Applied Science (AAS) degree program at USU; 2) students can transition from a technical college to the AAS degree at USU. Their technical college certificates can be converted into credit toward an AAS in General Technology with an emphasis in two areas that are related to the aerospace industry cluster, Advanced Materials and Electronics; 3) the technical certificate and emphasis areas in the AAS are then stacked to lead into two existing Bachelor's (BS) degree programs at USU, Aviation Maintenance Management and Technology Systems. This stackable program is also proposed to help the aerospace and defense economic cluster by helping to centralize and build a training program to assist in the continuing education of their current employees and removes the burden for each company to maintain replicated training programs.

This program is being developed with Industry support and input in response to the demand for skilled technicians, who require additional training as technology in these industrial sectors becomes increasingly complex. At the request from industry, and to help service potential students who have already obtained entry level employment in the state, this stackable program is being designed to be accessible statewide through the USU statewide campus system and the use of online and Interactive Video Conference (IVC) instruction at any of the USU statewide campuses. This eliminates the relocation costs for Utah residents through use of USU Statewide Campuses and allows participants flexibility to schedule coursework around their work schedules. The structured Advanced Materials and Electronics Stackable Pathway program is responsive to regional workforce needs, offers a non-duplicative progression of courses and stackable credentials, leads to specific employment opportunities, and generates momentum for continued study and career advancement in the aerospace strategic industry cluster.

Strategic Industry Cluster: This initiative will specifically address the strategic cluster of Aerospace and defense identified by the Governor's Office of Economic Development.

Proposal

a) Program of Study

i. Responsive to workforce need of the CTE region

Companies such as Hill Air Force Base, Orbital ATK, Boeing, Northrop Grumman, Lockheed Martin, and Duncan Aviation help comprise the state of Utah's Aerospace and Defense Industry Cluster. These are just of few of the large aerospace companies in Northern Utah that require a strong workforce in the areas of advanced materials and electronics. Several more aerospace companies are scattered throughout the state, which also require a highly skilled workforce. The Department of Workforce Services website indicates a 4-5 start rating meaning a high number of jobs currently available with a high volume of job openings projected in the coming decade.

Many of these companies have training programs in place to provide training for inexperienced employees, but indicate they would rather hire qualified candidate that have received training and education in the industry. Currently, the required credential for this industry is an Associates Degree with many of the industry partners indicating that a bachelor's degree can make a candidate more employable.

The Advanced Materials and Electronics Stackable Pathway is designed to allow students to begin their training at the High Schools through both concurrent enrollment and through partnerships with the technical colleges. These courses are designed in introduce perspective students to the advanced materials and electronics pathway and provide an understanding of the industry and opportunities. Students with a fundamental knowledge can often obtain employment in these fields with minimal formal education and/or training.

During their high school experience students then enroll and complete a certificate program at the technical college in the areas related to Advanced Materials and Electronics. The following table shows a list of the certificate programs at each technical college that qualify for this program. Additionally, the program will be expanded to include similar programs throughout the state, once identified.

Technical College	Related Certificates (hours)
Bridgerland Technical College	Electronics (900) Automated Manufacturing(900)
Ogden Weber Technical College	Composites (700) NDI(700)
Davis Technical College	Composites (700) Automated Manufacturing(900)

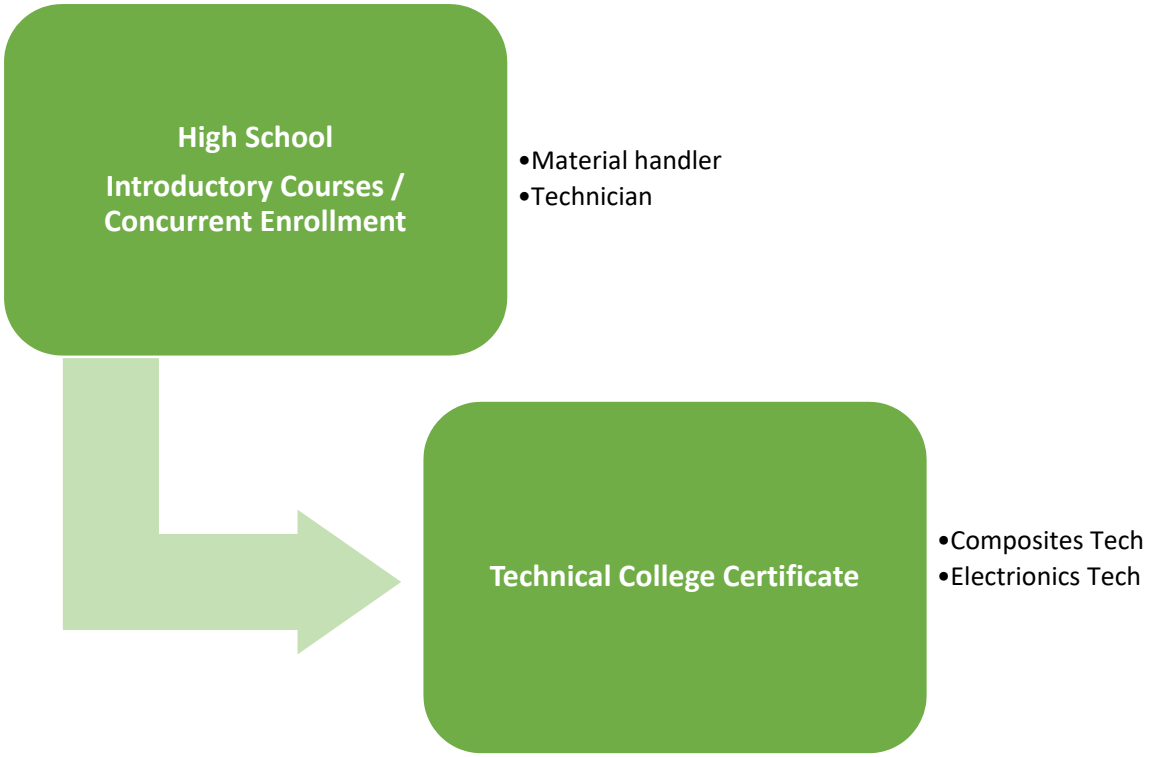
Upon completion of the technical college certificate students can enter the workforce and/or continue their education at Utah State University in the Associates of Applied Science degree in general technology program with an emphasis in Advanced Material or Electronics. The courses in this AAS program have been designed to maximize distance and online courses so students who enter the workforce can still continue their education regardless of their geographical location and with little disruption of their work day. This also helps provide educational opportunities to support potential job

growth in economically depressed area of rural Utah. These two new emphasis areas will help to provide additional training and courses required to obtain an AAS in their respective industry areas. According to the department of workforce services data, and attached letters of support, employment demand for these areas is high and student with an Associates degree are highly employable.

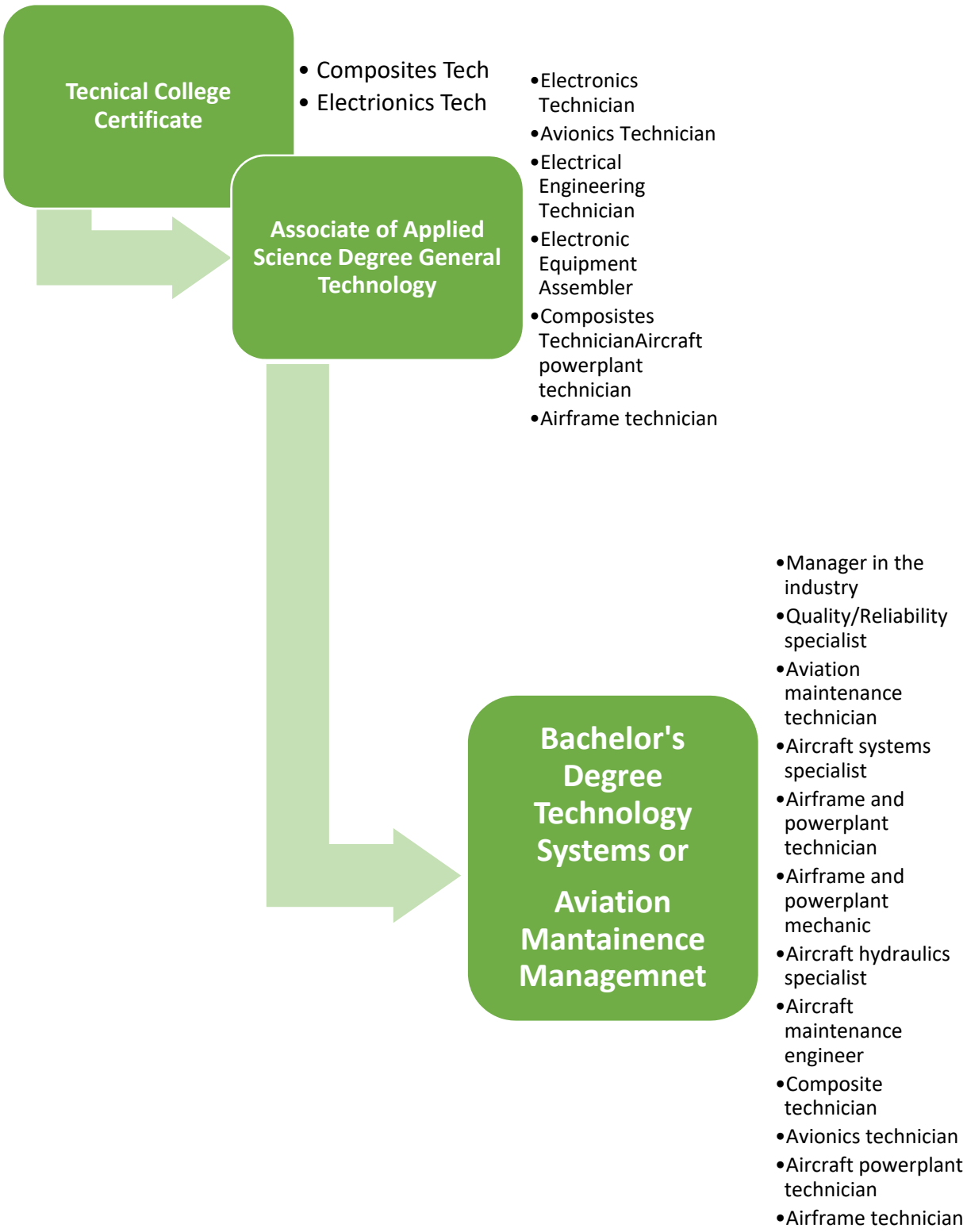
After obtaining an associate degree, students may choose to obtain additional training and education through the Technology Systems or the Aviation Maintenance Management bachelor's degree programs at Utah State University. The Technology Systems degree program has emphasis options in the areas of Technical Management, Product Development, and Quality and Reliability that will also service this industry. After completion of these programs members of the workforce often are qualified for advancement or promotion at their current employer or can pursue additional career opportunities in a related field.

The following models illustrate proposed pathway options, stackable credentials within each pathway, and employment opportunities associated with each credential.

Step 1 : *Transition from a Utah secondary education program to a technical college certificate program.*



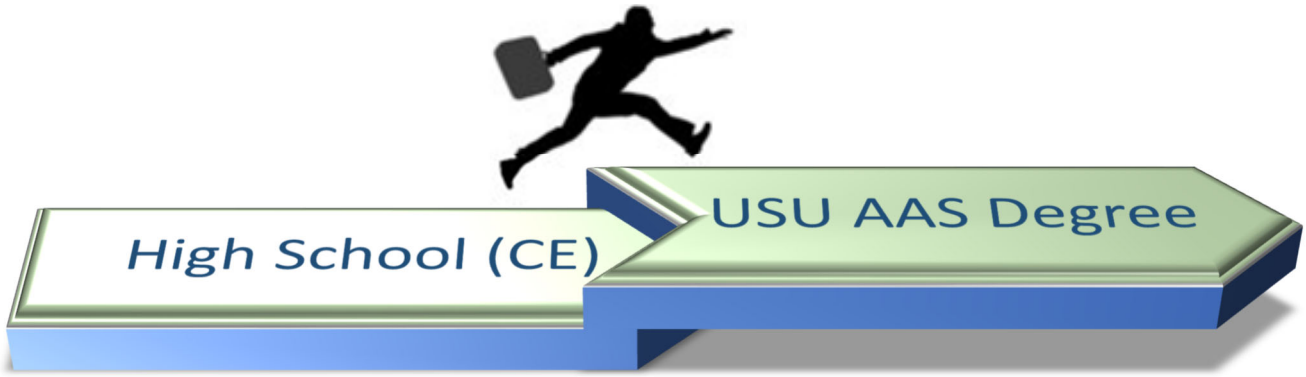
Step 2 & 3 : *Transition from a Technical College to Utah State University for both an Associates and Bachelor's Degree.*


Tecnical College Certificate
• Composites Tech
• Electrionics Tech
•Electronics Technician
•Avionics Technician
•Electrical Engineering Technician
•Electronic Equipment Assembler
•Composistes TechnicianAircraft powerplant technician
•Airframe technician
Associate of Applied Science Degree General Technology
Bachelor's Degree Technology Systems or
Aviation Mantainence Managemnet
•Manager in the industry
•Quality/Reliability specialist
•Aviation maintenance technician
•Aircraft systems specialist
•Airframe and powerplant technician
•Airframe and powerplant mechanic
•Aircraft hydraulics specialist
•Aircraft maintenance engineer
•Composite technician
•Avionics technician
•Aircraft powerplant technician
•Airframe technician

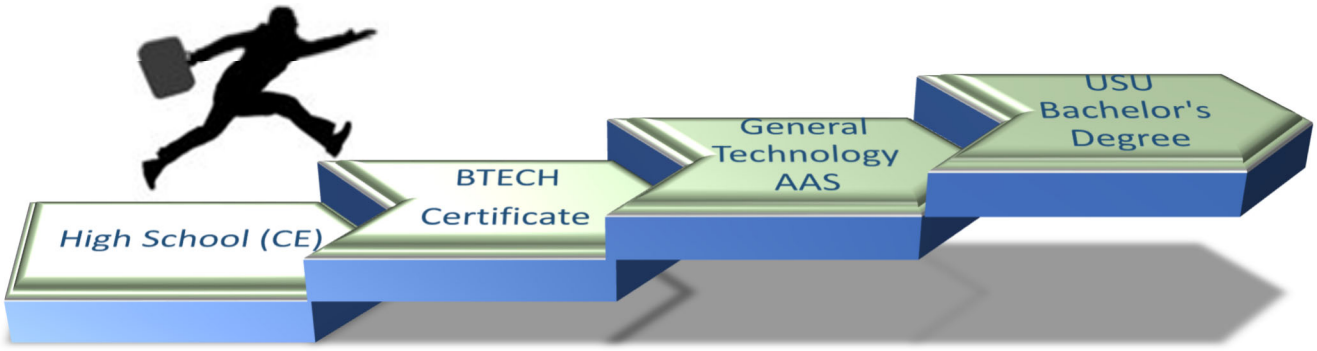
ii. Facilitates attainment and seamless transfer of stackable credentials

The following graphics provide a visual reference for proposed Advanced Materials and Electronics pathway options.

Pathway 1: *Transition from a Utah secondary education program to either USU's General Technology AAS degree with an Advanced Materials or Electronics emphasis Product Development emphasis*



Pathway 2: *Transition from a Utah secondary education program to a Technical College's certificate to USU's General Technology associate of applied science degree with an Advanced Materials or Electronics emphasis to either USU's Technology Systems bachelor of science degree with a technical Management, Robotics Automation and Control, or Quality and Reliability emphasis or to USU's Aviation Maintenance Management bachelor of science degree.*



A description of each Pathway Program credential preparatory for entry level and skilled product design and development employment is provided below.

High School Concurrent Enrollment Courses

The Advanced Materials and Electronics Stackable Pathway Program aims to reach high school students that may not otherwise be college bound. Many secondary education programs in the state offer career and technical education (CTE) courses in CAD design, composites, and manufacturing processes that provide foundational knowledge and skills for high school students to seamlessly transition to a Technical College certificate program or a USU associate or bachelor's degree program. Due to close articulation between secondary education courses and ATC courses, students in northern Utah will be able to complete all or most of the technical college certificate option they choose while still in high school. Additionally, some program courses and USU general education courses will be available to high school students as concurrent enrollment.

USU currently offers many concurrent enrollment courses to the Cache, Rich, and Box Elder County school districts. Likewise, Odgen/Weber and Davis school districts offer concurrent enrollment for many courses at their regional institutions that can be transferred to this pathway program as USU through current articulation agreements without the need for repetition of coursework. Faculty from USU's School of Applied Sciences, Technology and Education (ASTE) will train secondary teachers. ASTE houses pre-service training programs in Technology and Engineering Education and Family and Consumer Sciences Education, and highly qualified teacher educators in these programs will lead training activities.

Technical College Certificates

The technical college certificate programs are a natural path for students interested in advanced materials of electronics employment but not yet ready to commit to a bachelor's degree program. Technical College instructors are industry professionals who emphasize hands-on instruction in an environment that allows students to explore their passions, and students who participate in certificate programs are engaged in content directly related to their desired career paths.

Technical college certificates related to the Advanced Materials and Electronics AAS program include: These certificate programs prepare students for entry level positions as CAD designers/operators, manufacturing technicians, composites technicians, electronics technicians, and avionics technician. After completing a certificate program, students are encouraged to move into the workforce, and most technical college graduates find employment in Cache Valley or the Wasatch Front.

Technical college graduates interested in pursuing additional credentials can apply 30 credits toward an associate or bachelor's degree at USU, and completion of a certificate program equips students with skills to work as laboratory aids once enrolled at USU. Several technical college certificate programs prepare students to seamlessly transition to and succeed in either USU's AAS in General Technology and the Technology Systems bachelor's degree or Aviation Maintenance Management bachelor's degree, both of which offer courses in 2-D and 3-D computer design, manufacturing materials and processes for hard and soft products, plastics and composites, promotion, business, marketing, operations management, and sales.

Associate of Applied Science in General Technology (Advanced Materials or Electronics Emphasis)

Technical college graduates who pursue an Associate of Applied Science in General Technology degree will begin with foundational training and approximately half of the required credits (i.e. 30 credits). Many will also have concurrent enrollment credits. Remaining credits can be completed through distance delivered USU courses to accommodate the many associate degree students who are

employed. In addition to preparing students for employment as CAD designers/operators, manufacturing technicians, composites technicians, electronics technicians, and avionics technicians, completion of an Associate Degree in General Technology will pave the way for further education and correlated career opportunities in the advanced materials or electronics industry.

Bachelor of Science in Technology Systems

The Bachelor of Science in Technology Systems degree was developed with input from industry partners, Bridgerland Technology College leaders, and secondary career and technical education directors and was approved by the Utah State Board of Regents on July 21, 2017.

The Technology Systems bachelor's degree provides further training for certificate and associate degree completers interested in product development, information and computer technology, robotics, automation and control, quality and reliability and/or technical management and generates trained, technical professionals to meet workforce needs of regional manufacturing companies. Specifically, completion of the degree prepares graduates for employment as production Automation Engineers, Technical Management, Quality Specialist, and/or Product Development technicians.

Because the degree was developed with industry input, the curriculum provides hands-on learning experiences that keep students actively engaged and equip them with workforce skills. Due to the availability of USU courses in evenings and online, many students can continue their education while working. To ensure graduates have the requisite knowledge and skills and facilitate a smooth transition from college to the workplace, USU continues its work with industry partners.

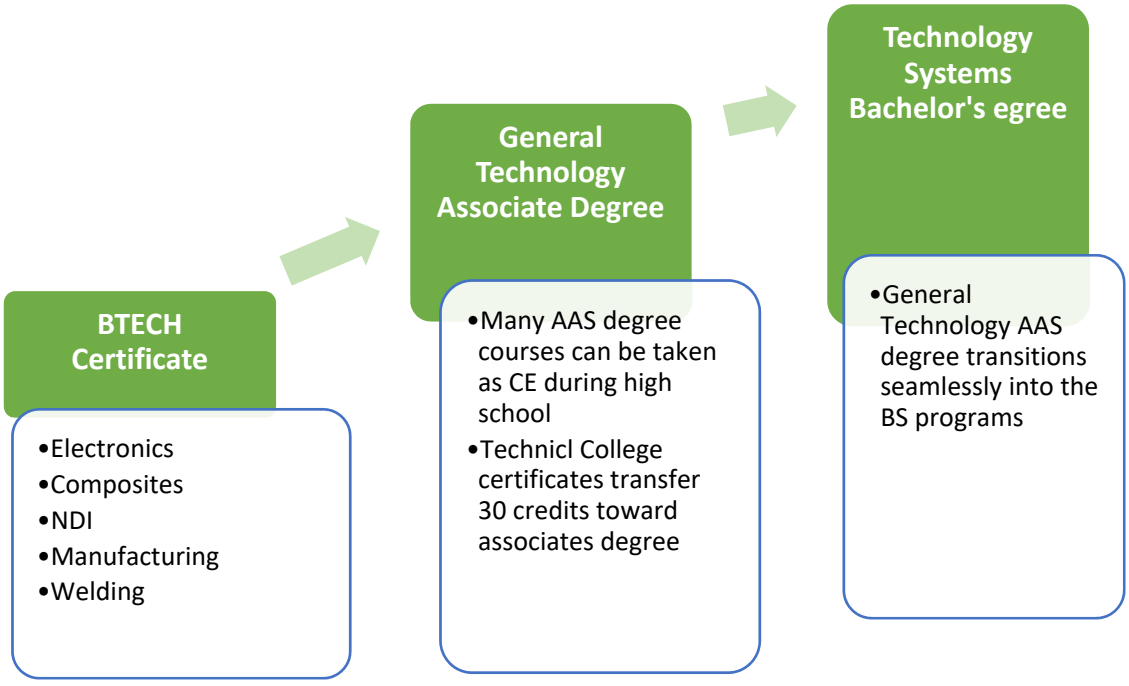
Bachelor of Science in Aviation Maintenance Management

The Aviation Maintenance Management bachelor of science degree primarily focuses on the technical skills required by industry. The degree combines academics with industry experiences students need to be successful.

iii. Offers a non-duplicative progression of courses with academic and CTE content

Ongoing partnership efforts to align the non-duplicative progression of credentials with workforce needs will enable students at all levels (high school, BTECH OWATC, DAVIS, and USU) to earn industry recognized credentials. Because each credential will give them access to more advanced jobs and higher wages, it is anticipated that students will pursue additional training and advancement opportunities. The following program courses include career and technical education (CTE) components and focus on advanced materials and electronics skills.

Pathway: *Transition from a Utah secondary education program to a Technical College's certificate to USU's General Technology associate of applied science degree with a Advanced Materials or Electronics emphasis to either USU's Technology Systems Bachelor of Science degree or to USU's Aviation Maintenance Management bachelor of science degree.*



b) expected student enrollment, attainment rates, and job placement rates

Many technical college programs have connections with the local high schools, however further development of these relationships and teacher training are required to strengthen the pathway. Currently, the programs identified in this proposal do not have a clear stackable pathway all the way to a BS degree in their respective regions for Advanced Materials or Electronics. Through this program, teachers at the High Schools throughout the respective regions will be targeted for training and curriculum will be developed by faculty at all levels. Additionally, equipment needs of the high schools will be assessed and provided by the technical colleges to strengthen the pathway. Through these efforts the High School programs and curriculum content will begin to provide the first step for students and lead them into the certificate programs at the technical colleges.

In the 2019-2020 school year the three technical colleges had over 30 students enrolled in certificate programs in the area of Advanced Materials, and in the area of Electronics. These same programs average 10 student completers in Advanced Materials and 10 in the area of Electronics. Through the efforts in this program we project these programs will see at least 10% growth.

During the first year, 2020-2021 of implementation we will target current and recent graduates at BTECH, Davis tech, and OWTC in the composites and electronics programs and purchase equipment. With current enrollment at the Technical Colleges, and the number of recent completers we expect to have at least 10 students enroll in the program during the 2021-2022 school year, and project 30 students in the 2022-2023 school year.

c) evidence of input and support for the proposal from an industry advisory group;

Advisory Board

This program includes 4 separate advisory committees were consulted for this program, one for each of the 4 post-secondary institutions involved across northern Utah. These relationships are displayed by attached letters of support from some of the industry partners. Both the Electronics and Advanced Materials emphasis areas have key industry partners in common including, Orbital ATK, Northrop Grumman, Hill Air Force Base. Additional key industry partners for the advanced materials include, Hypercomp, GoComposites, Lifetime, and Kihomac. Additional key industry partners for the electronics program include, Campbell Scientific, Innovar, TTM, and APG.

Meetings are typically held for each of these committees in September and April and will be attended by the Advanced Materials and Electronics Stackable Pathway curriculum director or a representative. A planned agenda item is to discuss this programs progress and implementation as well as student who have been place with industry partners. Advisory board members contribute the following:

- Share industry developments and advise partners to ensure the program produces graduates with current skills that meet industry employment needs
- Identify and offer work-based learning opportunities for students
- Assist with placement of program graduates
- Assist with curriculum refinement and program expansion
- Assist with identification of external resources to support the students and program (e.g. work-based learning opportunities, equipment, etc.)
- Provide ongoing connections and information exchanges with industry contacts

The advisory board will continue to evolve and grow as current members assist with identification and recruitment of new board members.

Continued industry involvement and commitment

In addition to the advisory board participation several companies from northern Utah have expressed support through providing internships and job placement for student that are moving through this program.

Additionally, the attached letters of support show a strong desire from industry for students who will move through this pathway program.

d) Evidence of official action in support of proposal

i. Utah System of Technical Colleges Board of Trustees

The presidents of Bridgerland, Davis, and Ogden/Weber Technical College provided a letter of commitment, which is attached to this proposal. The Utah System of Technical Colleges (USTC) commissioner has expressed support for the Advanced Materials and Electronics Stackable Pathway, and the Utah System of Technical Colleges Board of Trustees will consider and provide final support for the proposal during their January 2018 meeting.

ii. Utah Board of Regents

Per directions from the Governor's Office of Economic Development, the proposal abstract was sent to the USHE Commissioner's Office. As part of the process, the Commissioner's Office will review the full proposal at their next meeting and forward it for the next level of review.

e) Funding request and justification

USU is requesting Strategic Workforce Initiative funds to advance educational pathway partnerships and increase stackable credential training opportunities for high school and technical college students Throughout northern Utah. Other counties will be served as the program expands. These training opportunities will increase the number of Advanced Materials and Electronics professionals to meet regional workforce demands.

Funds are requested to support direct costs associated with 1) hiring one full time faculty position, and one Program Coordinator position at USU. 2) providing workshops for high school career and technical education (CTE) instructors, and 3) purchasing equipment and related supplies to ensure appropriate student learning opportunities throughout the pathway and also to maintain laboratory equipment.

The following budget table and narrative detail the request.

Funding Categories	Year 1 Budget Request	Year 2 Budget Request	Year 3 Budget Request	On-going Budget Request
Salary & benefits for 1 USU faculty position	$0	$140,000	$140,000	$140,000
Salary & benefits for Program Coordinator	$112,000	$112,000	$112,000	$112,000
In state travel	$2,000	$1,000	$1,000	$1,000
USU Equipment and related supplies	$150,000	$10,000	$10,000	$10,000
Davis Tech Instructor costs, Equipment, and related supplies	$60,000	$60,000	$60,000	$60,000
Ogden Weber Instructor costs, Equipment, and related supplies	$60,000	$60,000	$60,000	$60,000
BTech Instructor costs, Equipment, and related supplies	$100,000	$100,000	$100,000	$100,000
Summer Teacher Training and Development	$10,000	$10,000	$10,000	$10,000
Total Budget Request	$494,000	$483,000	$483,000	$483,000

Table 4: SWI Funding Request

Salary & Benefits for Two Faculty Positions

Support is requested to fund salary and benefits for one full time faculty position at USU Logan and one program coordinator position at USU. In the first year of the program the funds for the faculty position will be used to purchase equipment and upgrade current equipment so the labs are ready for the instructor to offer the additional courses in year two of the program.

The needs of each technical college in this program differ with some needing equipment and others needing instructors to make the program work for their institution, as a result allocated funding of 70,000 to offset cost in three specific areas, additional instructor cost, equipment at the high schools and tech colleges, and supplies and maintenance.

Specific equipment needed for the Brigham City Campus are in the table below.

Description	Cost	QTY	Total
Student Electronic Kit (includes multimeter oscilloscope and other equipment nessicary to work with electronics)	$500	30	$15,000
Laser Cutter	$20,000	1	$20,000
Waterjet Cutter	$25,000	1	$25,000
Electronic trainers	$3,000	10	$30,000
Cutting Tables	$1,000	3	$3,000
Injection Molder	$20,000	1	$20,000
CNC Milling machine	$20,000	1	$20,000
CNC Lathe	$20,000	1	$20,000

Travel

To ensure quality course development and delivery at secondary schools, the proposed initiative will support summer workshops. Travel funds in the amount of $1,000 on going is requested to facilitate faculty in-state travel to participating high schools with $2,000 requested in the first year due to the increased travel required in setting up of the program. The funds are to cover the cost of mileage, perdiem, and hotel for traveling throughout the state.

Summer Workshops

In addition to in-state travel, $10,000 is requested to support curriculum development for the secondary summer workshops and for the training of secondary, TECH college, and USU instructors. The summer workshops will be developed by USU faculty a budget request for 1 month's compensation for development and delivery of the workshop for the faculty required 7,250 with benefits of 2,250 (at 45% benefit rate). The remaining funds will be used to put together the necessary kits for the instructor and attendees to use the equipment and ensure the transfer of knowledge. The ongoing funds are to cover the cost of continuing to update the curriculum to be consistent with changing industry needs and to hold the training each summer.

USU's School of Applied Sciences, Technology and Education appreciates our connection to the Technical College programs and looks forward to enhancing and developing these collaborations in the advanced materials and electronics arena. The Advanced Materials and Electronics Stackable Pathway program allows for development of an educational pathway consistent with Regent Policy 473's integrity in the process of awarding credit for high school, Technical College, and USU students. The Advanced Materials and Electronics Stackable Pathway will allow students to enter a career path during high school, continue to earn a certificate from a technical college, continue to complete an Associate of Applied Science degree in General Technology with an Advanced Materials or Electronics emphasis from USU, and finally, continue to complete either a Bachelor of Science degree in Technology Systems with a Product Development, Quality and Reliability, or Robotics emphasis or a Bachelor of Science degree in Aviation Maintenance Management USU. Strategic Workforce Initiative funding for the Advanced Materials and Electronics Stackable Pathway program will build the instructional infrastructure and ensure successful implementation.

Automation Products Group, Inc.
1025 West 1700 North
Logan UT 84321
Phone: 435-753-7300
Fax: 435 753-7490
www.apgsensors.com

December 30, 2019

To Whom It May Concern:

Automation Products Group, Inc. (APG) is a supplier of innovative and differentiated products, solutions, and services for industrial process measurement and control. Technologies include pressure, flow, level control, analytics, and dedicated flexible control, using state of the art methodologies. Our customers include OEM's, integrators, distributors, and end users. APG's goal is to provide reliable products and solutions supported with exceptional customer service.

Utah State University and Bridgerland Technical College are applying for a grant to acquire funds that will help them make changes to their Electronics Engineering Technology program and create a stackable credential pathway for highly skilled electronics technicians. I believe the *Advanced Materials and Electronics Stackable Pathway* Strategic Workforce Initiative Grant proposal is a fantastic idea. The proposal will create more trained and skilled employees in the area of electronics. This pathway will allow high school students to begin taking electronics engineering technology courses during high school and then apply that credit towards Bridgerland and USU associate's and bachelor's degrees thus shortening the amount of time required to become skilled and enter the electronics field. Furthermore, this grant will allow Bridgerland to increase the number of electronics technicians for local companies to hire. This is wonderful, because we currently have a shortage of workers in our area, and it is particularly difficult to find skilled technicians.

If Bridgerland is funded by this grant, APG is willing to provide industry direction and feedback.

Sincerely,

Ryan Andersen
HR Administrator

DAVISTECH
DAVIS TECHNICAL COLLEGE

December 17, 2019

RE: USU Advanced Materials and Electronics Stackable Credential Pathway, Strategic Workforce Initiative Proposal

Dear Legislative Review Committee,

Davis Technical College (Davis Tech) is pleased to partner with Utah State University (USU) on a Strategic Workforce Initiative Proposal for an Advanced Material and Electronics Regional Consortium Stackable Credential Pathway.

Through this proposal, Davis Tech will collaborate with USU to expand pathway opportunities for students in our Automation and Robotics and Composite Materials Technology Programs. Davis Tech students who complete their certification will be eligible to transfer 30 credit hours towards an Associate of Science Degree in Technology Systems or a Bachelor's of Science in Technology Systems or Aviation Maintenance Management. This workforce pathway will fill the growing job gap in the Aerospace and Defense, and Manufacturing industry sectors.

Funding from this proposal will support training equipment and salaries for instructors at Davis Technical College. Through the consortium, funding will support the development and distribution of curriculum, and sustain ongoing collaborative efforts between educational institutions. Positions that will be funded through the grant are critical to the implementation and success of the pathway. These positions will be responsible for teaching curriculum, developing and coordinating internships and jobs with industry partners, and ensuring a pipeline of students from secondary to post-secondary education.

Thank you for your consideration of this proposal. We appreciate the opportunity to partner with USU, other Tech Colleges, and our local school districts in continuing to expand educational pathway opportunities that meet the need for skilled workforce in the aerospace and defense, and manufacturing industries in northern Utah.

Sincerely,

Darin Brush
President & CEO

DAVIS TECHNICAL COLLEGE
550 E. 300 S. KAYSVILLE, UT 84037 ■ 801.593.2500 ■ WWW.DAVISTECH.EDU

January 02, 2020

Utah Governor's Office of Economic Development
60 East South Temple, 3rd Floor
Salt Lake City, UT 84111

Re: Advanced Materials and Electronics Stackable Pathway - Strategic Workforce Initiative Grant

Inovar knows our success lies in our highly-qualified, skilled, and excellent employees. We employ over 450 people; 250 of these work in electronics. We would like to fill these positions with highly qualified individuals equipped with the knowledge, abilities, and skills necessary to succeed. However, finding these highly qualified people has proven challenging due to a gap in supply and demand of these employees. For our company and our state, we know it is imperative to begin resolving this electronics workforce supply issue.

Our company is excited for the *Advanced Materials and Electronics Stackable Pathway* Strategic Workforce Initiative Grant. Inovar strongly supports Bridgerland Technical College (BTECH) and Utah State University's (USU) proposal for grant funds to support the formation of a stackable credential pathway in electronics. We feel that it will simultaneously produce more entry-level workers and allow our current employees to further develop their skills while continuing to work for us. We are excited to begin to offer this as an option for up-skill our current workforce.

As a partner in the grant, Inovar commits to:

- Participate in annual ongoing advisory meetings
- Review and advise on curriculum
- Contribute to instruction (e.g., guest lectures, classroom teaching, conduct site tours, serve as panelists or judges)
- Provide monetary or in-kind contributions totaling $ 1,000 for program sustainability or enhancement (e.g., financial support, equipment donation, marketing assistance, student sponsorship)
- Donation of software and supplies
- Work based learning (e.g., externships, mentoring, job shadowing, demonstrations)
- Tuition reimbursements for 2 full-time scholarships
- Work with project partners to implement and monitor the project (e.g., collect data about progress toward proposed goals, submit required reports in a timely manner)

We have a strong working relationship with BTECH and USU, and we are committed to working with both institutions to align curriculum with workforce needs, expanding and improving training pathways, and providing workforce with training development. We are confident that BTECH and USU will work with education and industry partners and use government funds to improve Utah's economic vitality.

Sincerely,

Craig Rupp, CEO

31 May 2019

FROM: KIHOMAC Inc

SUBJECT: Support for Davis Technical College Composite Program

To whom it may concern,

KIHOMAC Inc, is proud to submit this letter of support for the Davis Technical College (DTC) composite program.

Over the past 10 years, KIHOMAC Inc has heavily recruited and hired graduates of the Davis Technical College composite program due to the quality of their training and their expertise. This active partnership has evolved into a mutually beneficial relationship. KIHOMAC Inc routinely provides excess material to enhance hands-on experience at DTC. The ability to manipulate these materials and structures further develops the specific job skills required for advanced aerospace manufacturing.

KIHOMAC Inc provides full spectrum aviation support services to a variety of Department of Defense aircraft, employing more than 40 technicians to manufacture various structural components of combat aircraft. The challenges of this work require a highly technical work force which is able to meet the evolving demands of new and aging aircraft. DTC has proven exceptionally capable at training a cadre of graduates with the technical ability and work ethic to excel in the aerospace manufacturing market.

KIHOMAC Inc enthusiastically supports Davis Technical College's composite program. We anticipate hiring 20 – 40 more composite technicians over the next 3 years.

Christopher Gough

Christopher S. Gough
Vice President, Aerospace Engineering Group
KIHOMAC Inc

Automotive Strategic Workforce Initiative Proposal

Partnership—Weber State University, through the College of Engineering, Applied Science & Technology (EAST) and the Department of Automotive Technology, a departmental unit within EAST, is applying for Strategic Workforce Initiative funding for a new cooperative project addressing electric and hybrid vehicle service and repair industry needs. The automotive technology partners are:

- Weber State University (WSU) —David Ferro, Dean, College of Engineering, Applied Science & Technology; Scott Hadzik, Department Chair, Automotive Technology
- Davis School District (DSD) — Reid Newey, Superintendent; Jay Welk, CTE Director; Dave Milliken, CTE Specialist
- Weber School District — Jeff Stephens, Superintendent; Rod Belnap, CTE Director; Charles Nielson, CTE Coordinator
- Ogden School District — Rich Nye, Superintendent; Tim Peters, CTE Director; Chritine Heslop, CTE Specialist

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

Project Summary— Develop an advanced training program that prepares high school students for careers in the technically complex automotive service and repair industry.

A. **Curriculum Development**: Develop a curriculum that can be delivered in a high school automotive program that introduces students to emerging vehicle technology found in the automotive industry.
B. **Career Pathways:** Establish a clear pathway to employment for each step along the certification process. Create two positions at the college level that can support high school students through the process and ensure appropriate concurrent enrollment transfer of credit.
C. **Train the Trainer:** Establish a biannual emerging technology conference that provides update training for all automotive instructors throughout the state. Provide time for

WSU faculty members to mentor high school automotive instructors and participate in their courses.

D. **Develop Stronger Industry Connection:** Create a more seamless transition for students in the programs to connect directly with industry members. The grant will fund a staff member who helps establish and maintain this connection. The staff member will work directly with employers to guide interested students along the education pathway that best fits their interest. They will also create industry partner events to better connect the high schools with their local employers.

Project Outcomes.

The project outcomes are found in Table 1. The outcomes are grouped according to the program summary major categories.

Table 1. Curriculum Development	
Year 1 Outcomes	● Develop high school certification for hybrid and electric vehicle safety. Create individual modules
Year 2 Outcomes	● Deliver high school curriculum at lead schools in each district: **60 students** ● Monitor students' progress through curriculum and report enrollment and completion rate for students: **60% completion rate** ● Revise curriculum using assessment data and high school instructor feedback. ● Of those who successfully complete the certification course: ○ **50% completion certification course (3 CE WSU credits)** ○ **50% completion of Certificate of Proficiency (16 CE WSU credits)**
Year 3 Outcomes	● Deliver modified high school curriculum at most schools in each district (determined based on budget schedule) **120 students** ● Monitor students progress through curriculum and report enrollment and completion rate for students: **80% completion rate** ● Revise curriculum using assessment data and high school instructor feedback. ● Of those who successfully complete the high school certification course:

<table>
<tr><td></td><td>

30% completion certification course (3 CE WSU credits)
70% completion of Certificate of Proficiency (16 CE WSU credits)

</td></tr>
<tr><td colspan="2">Career Pathways and Develop Stronger Industry Connection</td></tr>
<tr><td rowspan="3">Year 1 Outcomes</td><td>Faculty Member</td></tr>
<tr><td>

establish duties outside of teaching related to project
at least one class period of high school students technical training for the 14 partnering schools

</td></tr>
<tr><td>CE Coordinator</td></tr>
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begin to establish relationships with industry partners, meeting with at least two automotive employers each month
provide at least one employer supported career discussion at each of the 14 partnering high schools
Coordinate with high schools to establish a process for tracking, retaining, and recruiting high school students in automotive concurrent enrollment courses.

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<tr><td rowspan="3">Year 2 Outcomes</td><td>Faculty Member</td></tr>
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at least two class periods of high school students technical training for the 14 partnering schools

</td></tr>
<tr><td>CE Coordinator</td></tr>
<tr><td></td><td>

continue to establish relationships with industry partners, meeting with at least two automotive employers each month. Increase the actively participating industry organizations by 5
provide at least two employer supported career discussions at each of the 14 partnering high schools
Report on auto CE student:

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enrollment and completion -- 75 students 50% completion
taking other CE courses -- 30%
completion of emerging technology certificate -- 40% of auto CE students
employment, internships, job shadow with industry partners -- 1 per lead school
transfer to automotive programs at technical colleges, SLCC, WSU, UVU -- 10% of auto CE students

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<tr><td rowspan="4">Year 3 Outcomes</td><td>Faculty Member</td></tr>
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at least two class periods of high school students technical training for the 14 partnering schools

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<tr><td>CE Coordinator</td></tr>
<tr><td>

continue to establish relationships with industry partners, meeting with at least two automotive employers each month. Increase the actively participating industry organizations by 5
provide at least two employer supported career discussion at each of the 14 partnering high schools
report on Auto CE student:

enrollment and completion -- 150 students 75% completion
taking other CE courses -- 60% of auto CE students
completion of emerging technology certificate -- 80% of auto CE students
employment, internships, job shadow with industry partners -- 2 per unit
transfer to automotive programs at technical colleges, SLCC, WSU, UVU -- 30% of auto CE students

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<tr><td colspan="2">Train the Trainer</td></tr>
<tr><td>Year 1 Outcomes</td><td>

Create curriculum and promotional material for conference Summer of 2022

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	• Invite subject matter experts to present -- **6 presenters**
Year 2 Outcomes	• Hold Conference. **50% of Utah automotive instructors in attendance** • Provide **6 - technical training sessions** that each participant can attend • **Collaboration time** to discuss emerging technology implementation at the high school level. As a group determine the most appropriate technology to embed in curriculum • **Employer session**. Create an event where automotive industry members can establish relationships with automotive instructors throughout the state
Year 3 Outcomes	• Using feedback from previous years' conference, plan and prepare for next year's conference • Create a **panel of former students** who have followed the career pathway setup by this project to provide feedback

Program of Study Workforce Needs—According to the Utah Department of Workforce Services Occupational Projections, Automotive Service Technicians and Mechanics positions will increase 2.5% while Bus and Truck Mechanics and Diesel Engine Specialists will increase 3.0%. As of 2016, there have been four million Electric Drive Vehicles (EDV) sold in the United States. EDVs in the US include Hybrid Electric Vehicles (HEV), Plug-in Electric Vehicles (PEV), Battery Electric Vehicles (BEV) and Fuel Cell Electric Vehicles (FCEV).

High School Automotive EDV Safety Training (Certificate) —In order to meet the industry needs, high school automotive partners will begin to incorporate EDV safety procedures into the current automotive curriculum. Students will receive certification for safe handling procedures when performing minor service on an EDV. The curriculum will be a combination of in-class activities, instructor-led demonstrations and online training. The certification will provide evidence of competency to prospective employers. Upon completion of the high school curriculum, students will be qualified for any of the following positions: entry-level service technicians, lot technicians, used vehicle evaluators, and similar entry-level automotive positions. The high school certificate will provide the student with 3 credits that will transfer to the WSU automotive program's EDV Safety and Introduction Course.

WSU Automotive EDV Maintenance and Light Repair (Certificate of Proficiency) — This pathway will cover EDV specific courses that further train students in basic maintenance and light repair on EDVs. Students will earn credentials that cover basic charging systems, regenerative braking, and EDV heating and ventilation systems. The courses taught in this

pathway will be an excellent resource for industry professionals who already have a background in vehicle service but lack EDV specific certification. Students who complete this pathway in high school will transfer in at least 16 credits to WSU. This certificate will allow students to complete an AAS in Automotive Technology in as little as one year. This certificate will prepare students to take four industry recognized assessments:

- G1 - Auto Maintenance and Light Repair
- A1 - Engine Repair
- A4 - Suspension and Steering
- A5 - Brakes.

WSU Automotive EDV Service Technician (AAS) — This pathway will cover EDV specific courses that further train students in advanced EDV diagnostics and repair. Students will earn credentials that cover vehicle communication, battery systems, advanced electrical diagnosis, and propulsion management. The degree will prepare students to take five additional industry recognized assessments:

- A2 - Automatic Transmission/Transaxle,
- A3 - Manual Drivetrain & Axles
- A6 - Electrical/Electronic Systems
- A7 - Heating & Air Conditioning
- A8 - Engine Performance.

WSU Automotive Technology Advanced Vehicle Emphasis (BS) — Students will earn credentials that cover diagnosis of advanced battery systems, charge controllers, electric motor systems and advanced electronics systems. The degree will prepare students to take the advanced level certificate: L3 - Light Duty Hybrid/Electric Vehicle Specialist.

Stackable Credentials — This career pathway consists of stackable credentials (see Figure 1) beginning with high school. Specifically designed to streamline student progress toward a STEM-oriented career goal, this pathway offers multiple entry and exit points culminating in an associate degree or higher in automotive technology. The degrees directly support economic growth in the high-demand industry cluster of automotive technology, energy, and natural resources. Students with basic skills in electric vehicle repair and advanced electronic systems are highly sought after by employers and frequently secure employment as specialized automotive service technicians. Finding skilled and experienced automotive service technicians, capable of safely diagnosing electric vehicles as well as diagnosing complex electronic systems are critical to the automotive industry in Utah. The stackable credentials provided by WSU's partnership with Davis, Weber, and Ogden school districts offers a number of entry and exit points (See Figure 2). Each successive step provides students access to an advanced degree and associated higher wages, achieving a primary objective of Strategic Workforce Investment.

Figure 1: Certificate of Proficiency Options

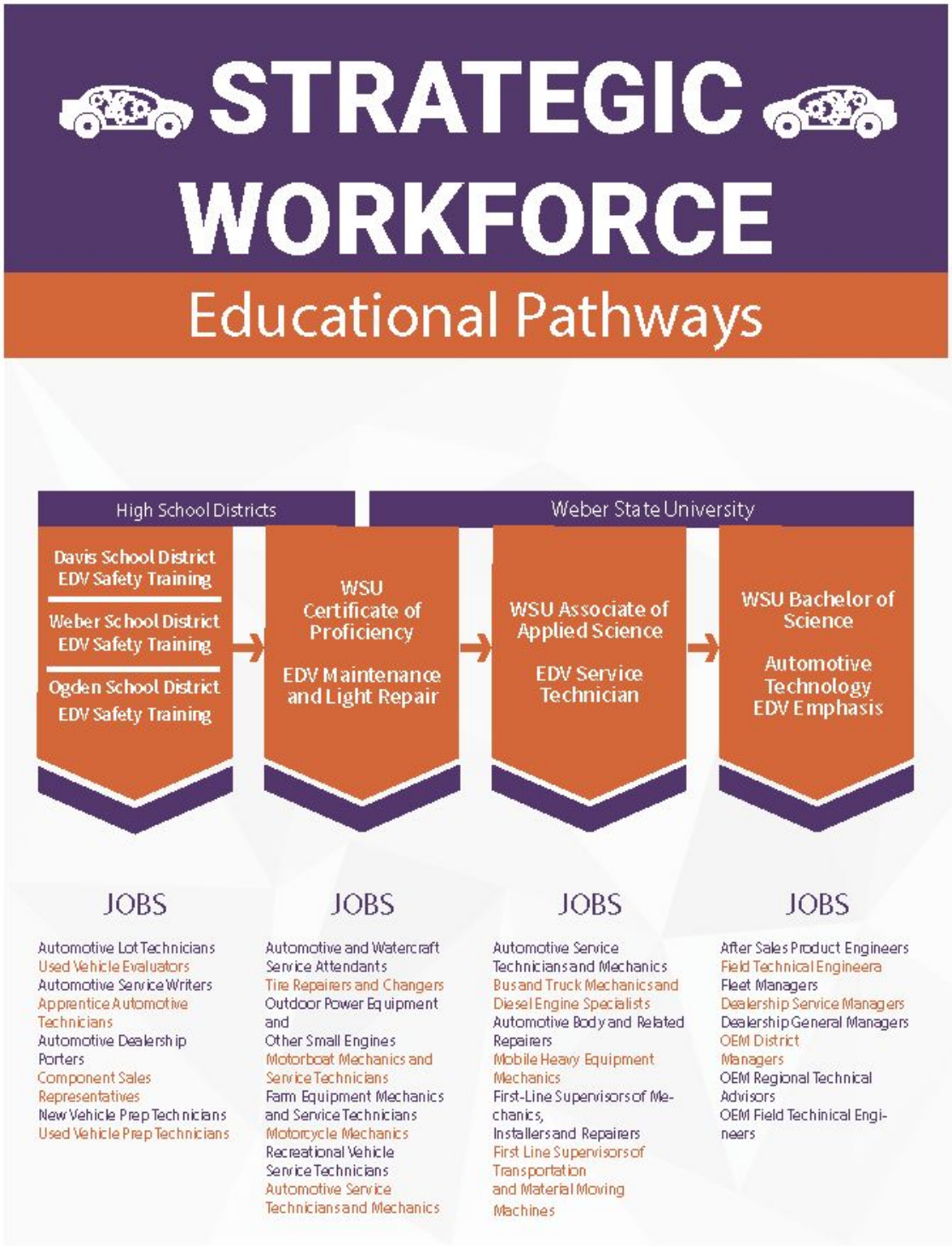


Figure 2: Strategic Workforce On-Ramps and Off-Ramps

Evidence of Support from Industry

The following companies or entities have indicated a critical need for employees in this career path and have affirmed support for this proposal by providing part-time employment early in a student's educational path. These firms represent a broad cross-section of Utah's transportation repair industry. Support of the project is wide ranging, from relatively small, privately held organizations, to large international firms.

Tony Lambiase, Area Training Manager, FCA, Western Region, "The automotive industry is moving toward a greater mix of hybrid and full electric vehicles, with many manufacturers increasing their offerings of electrified powertrains. As a result, the need for highly trained technicians familiar with these specialized technologies will continue to increase. Training on safety as well as complex control systems is now required by many of these manufacturers."

Nathan Thies, Manager, Les Schwab Tire Center, Logan, "Our company plans to hire 150 employees in the state of Utah in 2018. We plan on building up to 5 new stores in Utah in the next few years. We specialize in tires, brakes and suspension. New employees with some basic training in these areas have a huge advantage over employees without. Employees with some training in these areas normally have a higher starting wage."

John Garff, CEO, Ken Garff Automotive Group, "The Ken Garff Automotive Group has a need to hire qualified individuals in our service department at our dealerships throughout the state. We feel that there is currently a shortage of qualified individuals to fill the high-quality positions that we have available in our stores. We recognize that the automotive education institutions in the state are a great pathway for students to enter into this high-demand, high-wage career field."

Blake Murdock, Sr., CEO of Murdock Automotive Group**,** stated "We always need technicians at our dealerships. It is a position that is vital, as we value good service, yet it's one of the most difficult to fill." Murdock Automotive Group is a family-owned business and one of the oldest car dealerships in the state with over 90 years in business. Murdock has six dealerships in Utah. A new partnership with Davis Tech provides a pathway for new career potential for students and will provide Murdock with people who are prepared for employment in this high-demand field.

Christopher Kay, Young Mazda**,** stated that there is a shortage of qualified automotive technicians that has led to negative impacts on their abilities to conduct business. As many as 5 ongoing openings remain unfilled at any given time, limiting the ability to service vehicles in a timely manner.

***Kenneth Rees , Maintenance Manager, Utah Transit Authority*, "**I am writing you on behalf of the Utah Transit Authority maintenance departments indicating our support for moving forward with a partnering program with educational institutions to meet the training and hiring requirements we will have in the future.

We are excited about the opportunity to work with various institutions in identifying ways in which we can work together to meet critical educational competencies and have trained technicians that possess the necessary skills as we move forward into the future successfully."

***Ryan Lamb , Service and Parts Area Manager, Fiat Chrysler Automobiles*,** "Automotive Manufacturers are experiencing very rapid growth. We have more vehicles on the roads than ever before. The increase of vehicles brought with it an increased demand for qualified technicians to be able to service and repair them. With the technological advances being-made in the automotive industry, automotive education programs are vital to ensure enough qualified individuals are entering the job force to meet the current and growing demand."

Steve Hoellein, Chairman of the AAAC , Automotive Aftermarket Advisory Council, "For the last thirty or more years we have seen the need for qualified technicians. Over the years vehicles have become more advanced and the shortage of technicians keeps growing. We recognize that the great automotive education institutions are in place here. It's the only pathway to get these great students to enter into this high-demand, high-wage career field"

Nick Barnes, Owner, Big O Tires South Ogden, "Big O Tires has a need to hire qualified individuals in our mechanical, oil and lube departments. This is very consistent throughout the state as we meet with our Independent business owners. We feel that there is currently a shortage of qualified individuals to fill the high-quality positions, with the cars getting more and more sophisticated, the need for qualified individuals with training becomes more prevalent. We recognize that the automotive education institutions in the state are a great pathway for students to enter into this high-demand, high-wage career field. It has been and will continue to be a resource for us an Independent Tire and Repair shops."

Kelly Faley, Mopar CAP Relationship Manager, Fiat Chrysler Automobiles, "The automotive industry is selling more vehicles than ever, and advancements in automotive technology are creating the need for more qualified individuals to service and repair vehicles. Dealerships are handling this demand in two ways – they're expanding their facilities, and they're hiring more people and the demand isn't expected to decrease anytime soon. Today, there are approximately 650,000 automotive technicians employed in the U. S. That number is expected to explode to 760,000 jobs by 2022. As for FCA's share of that number, our dealerships currently employ 26,000 automotive technicians. To keep up with demand, FCA dealerships are

expected to hire another 5,500 technicians over the next two years, and expand the total pool of technicians to more than 30,000 by the end of next year.

Table 2. shows the employment information from DWS for automotive repair and service related fields.

Table 2. Employment Information (Source: DWS unless otherwise indicated)				
Stackable Educational Level	**Job Title**	***Statewide Occupational Projections (2014-2024)***		**Median Annual Wage**
		Annual Growth	**Annual Replacement**	
High School Automotive with EDV Safety Certificate	Automotive and Watercraft Service Attendants	30	40	$21,740
	Tire Repairers and Changers	30	50	$24,780
	Automotive Lot Technician			$24,780
	Used Vehicle Evaluator			$24,780
	Outdoor Power Equipment and Other Small Engines	10	10	$26,980
	Apprentice Automotive Technician			$31,200
	Automotive Service Writer			$37,960
Institutional Certificate	Motorboat Mechanics and Service Technicians	10	10	$37,690
	Farm Equipment Mechanics and Service Technicians	10	10	$38,600
	Motorcycle Mechanics	10	0	$40,040
	Recreational Vehicle Service Technicians	0	10	$42,610
	Automotive Service Technicians and Mechanics	190	200	$37,750
Associate of Science in Automotive Technology	Automotive Service Technicians and Mechanics	190	200	$37,750
	Bus and Truck Mechanics and Diesel Engine Specialists	90	50	$42,970
	Automotive Body and Related Repairers	50	40	$44,170
	Mobile Heavy Equipment Mechanics	40	50	$51,850
	First-Line Supervisors of Mechanics, Installers and Repairers	110	90	$62,150
	First-Line Supervisors of Transportation and Material Moving Machine and Vehicle Operators	30	40	$57,790
Bachelor of Science in Automotive Technology *(needed for promotions and job transferability)*	After-Sales Product Engineer Field Technical Engineer Fleet Manager Dealership Service Manager Dealership General Manager District Manager	$55,000-$65,000 $75,000 with experience *Source: WSU Faculty*		

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

Table 3. Funding Requests	
SWI On-Going Funding Needs	**Budget**
Total SWI Annual Budget The on-going budget by institution is listed below:	**$299,000**
Weber State University	
Total WSU Budget (Rotates every three years)	Year 1 - $175,500 Year 2 - $195,500 Year 3 - $175,000

1 faculty position ($105,000) at WSU
Faculty – Full-Time Position ($105,000)

- **Description**
  - The faculty member will specialize in hybrid and electric vehicle systems teaching lower- and upper-division courses
- **Duties**
  - Board member on partners' advisory board
  - Coordinates and assists in updates to curriculum with partners
  - Supports outreach events for the partner
  - Provides technical support to partners

.5 CE Coordinator ($35,000) at WSU
Staff– Full-Time Position ($35,000) partially funded by grant

- **Description**
  - WSU automotive representative who travels to partnering schools aiding in CE related activities. Also, employment liaison with automotive repair facilities in order to pair students with employers.
  - There have been several meetings between WSU and the larger dealership groups in the state. Young Automotive Group has agreed to approach the members of the Utah Automobile Dealers Association(UADA) to solicit funds to pay part of the salary of a full-time WSU employee who fills the role described below. UADA members and WSU will work in collaboration at the high schools to raise awareness of the industry opportunities available to students.
- **Duties**
  - Board member on partners' advisory board
  - Coordinates and assists with CE enrollment
  - Supports outreach events for the partner
  - Provides transfer support for students
  - Builds relationship with auto industry employers
  - Presents on career opportunities at high schools with industry partners

Year 1 – 2020-2021 – ($175,500)

- **Salary -- Hybrid and Electric Vehicle Faculty Salary ($105,000)**
  - Develop curriculum for high school programs that covers hybrid and electric vehicle safety systems and light maintenance
  - Incorporate hybrid and electric vehicle curriculum in WSU automotive courses
  - Develop course descriptions and content for hybrid and electric vehicle specialization degree
- **Salary -- CE Coordinator ($35,000)**
  - Establish relationships with partnering institutions
  - Create events promotional material for 8th and 9th grade students
  - Establish relationships with repair facilities
  - Create events and promotional material for student exposure to local automotive industry
  - Provides college with updated website information
- **Equipment -- Advanced Electronic Systems Components and tools ($35,000)**
  - Components systems, vehicle platforms or tools that are used for advanced driver assist systems
- **Vehicle Emerging Technology Conference ($500)**
  - Promotional, marketing material, conference preparations

Year 2 – 2021-2022 – ($195,500)

- **Salary -- Hybrid and Electric Vehicle Faculty Salary ($105,000)**
  - Evaluate curriculum for high school programs that covers hybrid and electric vehicle safety systems and light maintenance
  - Incorporate hybrid and electric vehicle curriculum in WSU automotive courses
  - Teach hybrid and electric vehicle specialization courses.
- **Salary -- CE Coordinator ($35,000)**
  - Establish relationships with partnering institutions
  - Create events promotional material for 8th and 9th grade students
  - Establish relationships with repair facilities
  - Create events and promotional material for student exposure to local automotive industry
  - Provides college with updated website information
- **Equipment -- Driver Assist System and Components ($35,000)**
  - Components systems, or vehicle platform that are use driver assist systems
- **Vehicle Emerging Technology Conference ($20,500)**
  - Biannual conference that will provide update training to all Utah automotive instructors. Hosted at WSU. Courses taught by industry experts.

Year 3 – 2022-2023 -- ($175,000)

- **Salary -- Hybrid and Electric Vehicle Faculty Salary ($105,000)**
  - Continue duties assigned
- **Salary -- CE Coordinator ($35,000)**
  - Continue duties assigned
- **Equipment -- Plug-in Hybrid Electric Vehicle and Components ($35,000)**
  - Plug-in hybrid electric vehicle with advanced battery management system
  - Components from Plug-in hybrid electric vehicle

Ogden School District **Automotive Programs: 1**	Year 1 - $24,500 Year 2 - $1000 Year 3 - $500

Year 1 – 2020-2021 - $24,500

- **Professional Development -- Automotive Training Costs 1 Instructor ($500)**
  - Compensation for instructor training courses
  - Registration for instructor training courses
  - Courses will be made available at WSU in the summer at no cost
  - Instructors are also encouraged to attend training provided by OEMs or tier 1 suppliers
- **Equipment** --Advanced Vehicle Systems **($24,000)**
  - **Qualifying items**
    - Plug-in Hybrid Vehicle purchase
    - Safety Equipment for hybrid service
    - Charging Station components and installation
    - Equipment and Tools identified by industry advisory board and/or WSU automotive program
    - purchases should follow the guideline that acceptance of the course credit for hybrid and electric vehicle safety systems is based on the students access to the equipment outlined in the safety systems course

Year 2 – 2021-2022 - $1000

- **Professional Development -- Automotive Training Costs 2 Instructor ($1000)**
  - Compensation for instructor training courses
  - Registration for instructor training courses
  - Courses will be made available at WSU in the summer at no cost
  - Instructors are also encouraged to attend training provided by OEMs or tier 1 suppliers

Year 3 – 2022-2023 - $500

- **Professional Development -- Automotive Training Costs 1 Instructor ($500)**
  - Compensation for instructor training courses
  - Registration for instructor training courses
  - Courses will be made available at WSU in the summer at no cost
  - Instructors are also encouraged to attend training provided by OEMs or tier 1 suppliers

Year 4 - 2023-2024 - Year 1 funds repeat

Davis School District **Automotive Programs : 9**	Year 1 - $74,000 Year 2 - $76,500 Year 3 - $74,500

Year 1 – 2020-2021 - $74,000

- **Professional Development -- Automotive Training Costs 4 Instructor ($2000)**
  - Compensation for instructor training courses
  - Registration for instructor training courses
  - Courses will be made available at WSU in the summer at no cost
  - Instructors are also encouraged to attend training provided by OEMs or tier 1 suppliers
- **Equipment** --**Advanced Vehicle Systems 3 Schools ($72,000)**
  - **Qualifying items**
    - Plug-in Hybrid Vehicle purchase

- Safety Equipment for hybrid service
- Charging Station components and installation
- Equipment and Tools identified by industry advisory board
- purchases should follow the guideline that acceptance of the course credit for hybrid and electric vehicle safety systems is based on the students access to the equipment outlined in the safety systems course

Year 2 – 2021-2022 - $76,500

- **Professional Development -- Automotive Training Costs 9 Instructor ($4500)**
  - Compensation for instructor training courses
  - Registration for instructor training courses
  - Courses will be made available at WSU in the summer at no cost
  - Instructors are also encouraged to attend training provided by OEMs or tier 1 suppliers
- **Equipment --Advanced Vehicle Systems 3 Schools ($72,000) (See Qualifying items on year 1 budget)**

Year 3 – 2022-2023 - $74,500

- **Professional Development -- Automotive Training Costs 5 Instructor ($2500)**
  - Compensation for instructor training courses
  - Registration for instructor training courses
  - Courses will be made available at WSU in the summer at no cost
  - Instructors are also encouraged to attend training provided by OEMs or tier 1 suppliers
- **Equipment --Advanced Vehicle Systems 3 Schools ($72,000) (See Qualifying items on year 1 budget)**

Year 4 - 2023-2024 - Year 1 funds repeat

Weber School District **Automotive Programs : 4**	Year 1 - $25,000 Year 2 - $26,000 Year 3 - $49,000

Year 1 – 2020-2021 - $25,000

- **Professional Development -- Automotive Training Costs 2 Instructor ($1000)**
  - Compensation for instructor training courses
  - Registration for instructor training courses
  - Courses will be made available at WSU in the summer at no cost
  - Instructors are also encouraged to attend training provided by OEMs or tier 1 suppliers
- **Equipment --Advanced Vehicle Systems 1 Schools ($24,000)**
  - **Qualifying items**
    - Plug-in Hybrid Vehicle purchase
    - Safety Equipment for hybrid service
    - Charging Station components and installation
    - Equipment and Tools identified by industry advisory board
    - purchases should follow the guideline that acceptance of the course credit for hybrid and electric vehicle safety systems is based on the students access to the equipment outlined in the safety systems course

Year 2 – 2021-2022 - $26,000

- **Professional Development -- Automotive Training Costs 4 Instructor ($2000)**
  - Compensation for instructor training courses

- Registration for instructor training courses
- Courses will be made available at WSU in the summer at no cost
- Instructors are also encouraged to attend training provided by OEMs or tier 1 suppliers

- **Equipment --Advanced Vehicle Systems 1 Schools ($24,000) (See Qualifying items on year 1 budget)**

Year 3 – 2022-2023 - $49,000

- **Professional Development -- Automotive Training Costs 2 Instructors ($2000)**
  - Compensation for instructor training courses
  - Registration for instructor training courses
  - Courses will be made available at WSU in the summer at no cost
  - Instructors are also encouraged to attend training provided by OEMs or Tier 1 suppliers
- **Equipment --Advanced Vehicle Systems 2 Schools ($48,000) (See Qualifying items on year 1 budget)**

Year 4 - 2023-2024 - Year 1 funds repeat

Table 4 identifies the specific distribution of funds over a three-year period. The units column describes the number of school automotive programs that each district will be able to fund during that fiscal year.

Table 4. Distribution of funds over a three year period

Districts	Description	Units	FY20	Units	FY21	Units	FY22
Ogden	Equipment	1	$24,000.00	0	$0.00	0	$0.00
	Training	1	$500.00	2	$1,000.00	1	$500.00
Weber	Equipment	1	$24,000.00	1	$24,000.00	2	$48,000.00
	Training	2	$1,000.00	4	$2,000.00	2	$1,000.00
Davis	Equipment	3	$72,000.00	3	$72,000.00	3	$72,000.00
	Training	4	$2,000.00	9	$4,500.00	5	$2,500.00
	SUB TOTAL		**$123,500.00**		**$103,500.00**		**$124,000.00**
WSU	Faculty Member		$105,000.00		$105,000.00		$105,000.00
	CE Coordinator		$35,000.00		$35,000.00		$35,000.00
	Equipment		$35,000.00		$35,000.00		$35,000.00
	Tech Conf.		$500.00		$20,500.00[1]		$0.00
	WSU TOTAL		**$175,500.00**		**$195,500.00**		**$175,000.00**
	SWI TOTAL		**$299,000.00**		**$299,000.00**		**$299,000.00**

[1] $500 of this budget will carry over to the third year to cover promotional material for the next conference. The $500 was placed in the year 2 budget to maintain consistency between SWI total budget annually

Appendix A - Letters of Support from Industry

Mitch May, Western Region Educational Manager, Subaru,

The Perfect Storm

Being hailed as the Perfect Storm the lack of skilled workers in the transportation industry is now being noticed and is of a large concern. The automotive – light truck service technician is in short supply. It is now time to do something!

The technician in today's service facility needs to be process driven with a high amount of skill in Root Cause Analysis. As the world moves to alternate propulsion as being mainstream the skill set of these technicians needs to be at an all time high. The Oscilloscope once hailed as the prized tool of the drivability technician has morphed by demand into the tool of choice in many diagnostic routines today. So, what drives the complexity?

Safety, automation, alternate fuels, alternate propulsion systems all play their part in diluting the standard vehicle selection in a modern service facility. Looking to items like Advanced Driver Assistance Systems (ADAS for short) once seen as a high- end luxury system is now main-stream in today's car park. What about the connected car? What about autonomous vehicles? Once a future long way off technology is now seen in cities on a regular basis. The modern vehicle has data processing systems today that dwarf office computers of yesterday. So, what does this all lead up to?

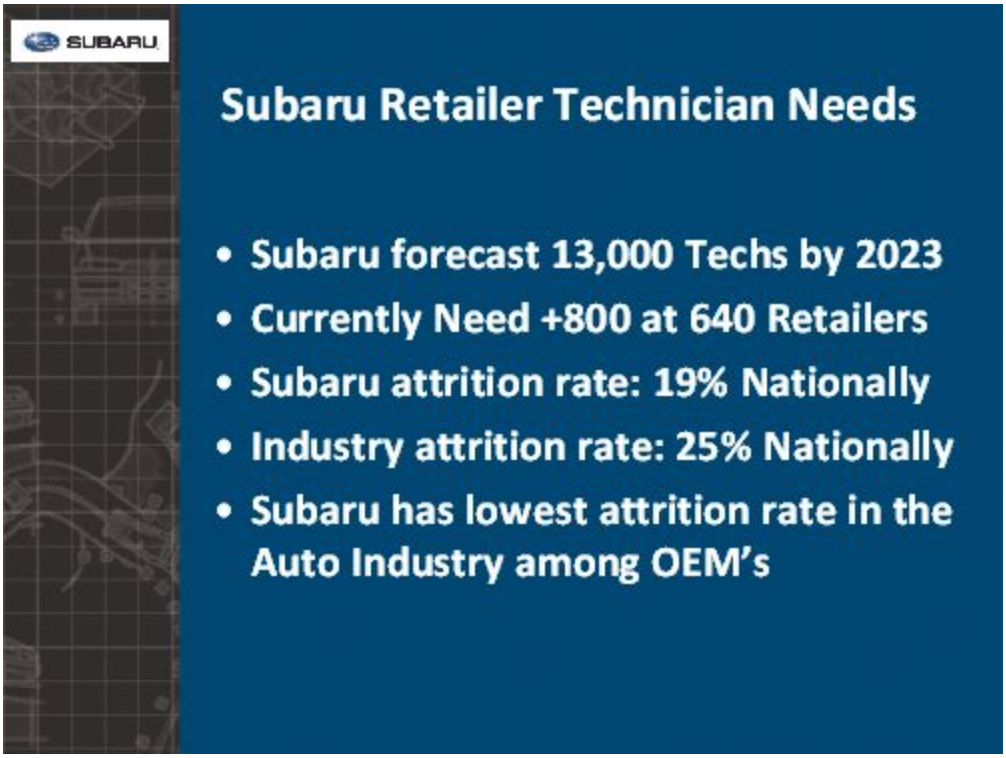
The vehicle technician of today needs to be schooled on a continuous basis and must be brought up through a modern well- equipped educational system. The classroom of the future(today) needs to offer a balanced approach to educating and training the service technician of tomorrow. Balancing theory and well designed, practiced diagnostic routines must be a part of the educational system today.

So how big is the issue? What are the hard numbers? In a meeting of the Automotive Training Managers Council (ATMC) a part of the ASE family, a representative of the labor board estimated the shortfall of skilled automotive technicians in 2020 to crest 150, 000 in the United States. Those numbers now look small with the latest figures showing in excess of 780,000 skill technicians will now be required in 2024!

So, what is a Perfect Storm? The industry has recognized the shortage of skilled technicians, the educational system needs to be engaged, the future has arrived> Based on Wikipedia: *A **perfect storm** is an event in which a rare combination of circumstances drastically aggravates the event.*[1]

Industry growth, complexity growth, and advances in technology we now have an industry the needs skilled people. The Perfect Storm for the transportation educational and training organizations.

Mitch May
Western Region Educational Manager
22100 East 26th Avenue
Aurora, CO 80019


SUBARU
Subaru Retailer Technician Needs
• Subaru forecast 13,000 Techs by 2023
• Currently Need +800 at 640 Retailers
• Subaru attrition rate: 19% Nationally
• Industry attrition rate: 25% Nationally
• Subaru has lowest attrition rate in the Auto Industry among OEM's

Young
AUTOMOTIVE
GROUP
EST. 1925

December 30, 2019

Scott Hazdik
Department Chair
WSU Automotive Technology

Hello Scott,

The Young Automotive Group fully supports your efforts to increase the number of highly trained technicians who are familiar with specialized technologies. The demand for technicians who are trained to work on hybrids, fully electric, and driver-assist vehicles is already critically low, and we see that trend continuing rather than improving. As a result, it's imperative that we focus more efforts on preparing high school students for these careers in order to meet the demand now and in the future.

As a large automotive group representing several manufacturers, we currently have openings for highly skilled technicians at nearly every one of our 18 dealerships. Filling these openings is necessary in order to satisfy ever increasing manufacturers' requirements and to keep up with the demand.

We appreciate your foresight in this area, and we welcome the opportunity to further support your efforts however we can. Please keep us apprised on the situation, and how we can help.

All the best,

Jay Frye
Fixed Operations Director
Young Automotive Group

Tami Olsen
Corporate Recruiter
Young Automotive Group