

The logo for Utah State University, featuring the text "UtahStateUniversity" in a bold, sans-serif font. The "Utah" and "State" are in a dark blue color, while "University" is in black. A small trademark symbol (TM) is located at the end of the word "University".

**UtahStateUniversity™**

MOAB

**Welding Career Pathway**  
**Governor's Office of Economic Development**  
**Strategic Workforce Investment 2019**

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## **Abstract**

**Applicant name:** Utah State University Moab

**Applicant type:** Public post-secondary educational institution

**Project title:** Welding Technology Career Pathway

**Strategic Industry Cluster:** Outdoor Products and Recreation

**Targeted industry:** Outdoor Products

**Targeted occupations:** power sports fabrication and repair, water boats manufacturing, waterproof river gear, climbing gear manufacturing, product developers, operations managers, corporate level outdoor products researchers and designers

**Education partners:** Grand County School District (Grand County High School, BEACON Afterschool Program)

**Area served:** Grand County and Southeast Region

**Funding level requested:** \$187,815

**Project Summary:** This project will implement a Welding Career Pathway targeting the Outdoor Products Industry that will support workforce development throughout the Southeast Region and will result in higher levels of workforce credentialing and expertise within a strategic industry cluster that is important to the region and to the state.

Beginning with career awareness in elementary grades; work-based learning, internships and concurrent enrollment in high school to stackable certificates, associates and bachelor degrees at USU Moab; the Welding Pathway will lead to high demand, high wage jobs and careers in Grand County and the Southeast Region.

## Proposal

### a) Program of Study

This proposal involves the development and implementation of a career pathway program within the targeted industries of the Utah Strategic Industry Cluster: Outdoor Products and Recreation. Grand County's first-ever Welding Technology Pathway will focus on Outdoor Products. Beginning with career awareness in elementary grades; work-based learning, internships and concurrent enrollment in high school; and stackable certificates, associates and bachelor degrees at USU Moab, the Welding Pathway will lead to high demand, high wage jobs and careers in Grand County and the Southeast Region. Participation in these programs will support the Governor's goal that 66% of the workforce will have credentials or degrees by 2020; and the Talent Ready Utah goal of filling 40,000 high-skills, high-wage jobs through educational programs that are important to State industry clusters.

#### i. *Responsive to workforce needs of a strategic industry cluster*

In 2007, the Southeast Applied Technology College merged with the College of Eastern Utah. In 2010, the College of Eastern Utah in turn merged with Utah State University. Due to these mergers, USU is now the provider of all post-secondary education opportunities, from certificates to doctoral degrees, in Southeast Utah. When the region lost the Southeast Applied Technology College, legislative funding for workforce development that flows through the Utah System of Technical Colleges to the Applied Technology Colleges was no longer available to Southeast Utah. As a result of this unusual situation, Southeast Utah has been underserved in its ability to design, develop, and deliver workforce development programming at a level necessary to meet industry needs.

For Grand County in particular, the level of workforce training and credentialing has been unacceptably low. In an effort to promote positive change, USU Moab has sought and obtained Utah Cluster Acceleration Partnership (UCAP) funding to implement Career and Technical Education (CTE) Programs. Over the last four years, USU Moab has been extremely effective in developing new workforce training programs at the Certificate and AAS levels. Because of these efforts, not only are the programs now available in Southeast Utah, they are becoming increasingly accessible to other underserved rural areas in the Southwest part of the state via a statewide interactive video conferencing (IVC) system available through the USU regional campus system.

As Grand County's population continues to grow, the success and hospitality of our community hinges on economic diversification. The Grand County Economic Development Office cites workforce development and education as one of the County's eight strategies in economic development. Specifically, the lack of workforce development, unemployment and underemployment are issues the Grand County Economic Development Office is addressing. One action item within the Grand County Economic Development Plan for workforce development is to "Work with Grand County School District and USU Moab to ensure CTE

programs are supporting targeted cluster Development.<sup>1</sup>” The Welding Technology Pathway is shovel ready and will be a foundational program that will support the power sports manufacturing and repair, river sports related fabrication and outdoor product design and development careers. The number one targeted industry cluster in the Grand County Economic Development plan is Outdoor Products<sup>1</sup>.

Governor Herbert announced 2018 as the ‘Year of Technical Education’. The Office of Outdoor Recreation within the Governor’s Office of Economic Development (GOED) states in their ‘Outdoor Recreation Vision’: “The outdoor industry sector contributes \$5.8 billion annually to our economy, representing 5% of the state’s GDP. Outdoor recreation has stimulated the growth of an outdoor products and sporting goods industry in Utah, creating jobs and generating public revenue. It is a primary driver of Utah’s large tourism industry. It attracts employees and businesses to Utah. Companies and their highly talented recruits cite our quality of life, natural beauty, and varied outdoor recreational amenities as key factors in their decision to relocate to Utah. Utah ranks first nationally in the concentration of outdoor/sporting goods jobs as a percentage of total state jobs and ranks second in the total number of such jobs<sup>2</sup>”. Grand County and the Southeast Region are poised to have a significant impact on its local economy by offering training for the outdoor products industry . With the natural assets already discovered and benefiting from the tourist economy, the resulting new and emerging outdoor product industry can add much-needed diversification to help sustain a year-round economy and not just dependent on seasonal tourism. However, the local workforce must be ready and capable to join the high demand/high wage pipeline of jobs that this industry can bring to the region.

The recent Area Sector Analysis Process<sup>3</sup> conducted for Moab City and Grand County by the Western Rural Development Center identified key economic targets for development in this region. ‘Specialized Design & Professional Services’ was identified as one sector for ideal future industries. The time is ripe for education and training programs to be developed and implemented for our local workforce in these emerging fields of outdoor products and related businesses that are projected to expand in Grand County and the Southeast Region. With this growth on the horizon, the outdoor products pathways will hone students’ entrepreneurial skills and acknowledge the industries that have roots here already. While jobs in Grand County are currently narrow in the field of outdoor products; by providing students with a pathway NOW, they will be "riding the wave" and prepared to be the front-runners and innovators for these jobs when the market is primed to receive them.

Many of the local outdoor product companies (4x4 power sports fabrication, boat and bicycle manufacturing, hiking, climbing and river gear design and development) in Grand County are in

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<sup>1</sup> <https://www.grandcountyutah.net/DocumentCenter/View/4803/DRAFT-Grand-County-Economic-Development-Plan>

<sup>2</sup> The State of Utah Outdoor Recreation Vision: Office of Outdoor Recreation – Governor’s Office of Economic Development January, 2013

<sup>3</sup> Area Sector Analysis Process: Helping Communities Identify Targeted, Sustainable Economic Development, <https://wrdc.usu.edu/htm/programs/asap>

the 'start-up' and/or expansion phases. Therefore, traditional labor force data for Grand County does not accurately reflect the demand for the specialized skills needed that the continual technical advancements in outdoor product development requires. These business operations currently existing in Grand County are looking to grow as the outdoor products pathways are implemented. The success of these small local companies will also increase opportunity for larger established businesses to consider making Grand County and the Southeast Region a home for a branch of their product development and manufacturing. The Welding Certificate program will develop to respond and dovetail with USU Logan's recently awarded (FY 19) Strategic Workforce Initiative (SWI); Outdoor Products Pathway Development. USU's SWI targets the outdoor products industries located on the Wasatch Front. However, the SWI also contains a part-time faculty position at USU Moab to write curriculum for a stackable Outdoor Product Design and Development (OPDD) Certificate and Associate's Degree that will incorporate the Welding Certificate.

The table below represents a sampling of entry-level jobs within the welding career pathway. Those listed need foundational training and entry-level skills that our proposed pathway will offer.

**Table 1: Key Occupational Cluster for Grand County and Eastern Utah<sup>4</sup>**

Occupation (Entry level)	Star Rating	Education Level Required	Median Hourly Wage	Utah Median Income/ Occupational Outlook
<b>Outdoor Products Industry</b>				
Structural Metal Fabricators	3	High school diploma or equivalent	\$14.58	\$38,660/Average employment growth
Specialized auto mechanic (power sports)	4	High school diploma or equivalent*	\$16.11	\$33,510/Expected to experience about average employment growth
Brazing Machine Operators	3	High school diploma or equivalent*	\$17.50	\$35,670/Replacement of jobs expected to make up majority of jobs
Auto Body and Related Repairers (power sports)	4	High school diploma or equivalent*	\$17.80	\$37,010/Faster than average employment growth
Welders, Cutters, Solders,	5	High school diploma or equivalent*	\$22.07	\$45,900/Experience average employment growth with high volume of job openings
* Job opportunities and wages are higher with Postsecondary Certification				

These entry level pathway jobs will serve as a pipeline that will lead into high wage/high demand jobs and careers in the outdoor products industries<sup>5</sup> such as listed below:

- Welder III: \$51,590

<sup>4</sup> Eastern Utah Outlook Projection Data: Occupational Projections 2014-2024, Utah DWS, November, 2018

<sup>5</sup> Eastern Utah Outlook Projection Data: Occupational Projections 2014-2024, Utah DWS, November, 2018; Glasshouse Jobs and Recruiting <https://www.glassdoor.com/index.htm>; Salary.com <https://www.salary.com/> <https://www.payscale.com>

- Jeep Mechanic: \$52,327
- Industrial Machinery Mechanic: \$62,840
- Certified Welding Supervisor: \$68,496
- Material Manager: \$77,400
- Quality Control Manager: \$83,000/year
- Supervisors of Production and Operations: \$92,060/year
- Research & Development Manager: \$93,400/year
- VP Product Design: \$135,000/year

Additionally, the welding certifications and skills learned will support other industry sectors in the region and state including energy, construction and manufacturing. Shannon Griffin, Manager of Operations at Williams NW Pipeline states, “Welding is a crucial part of our business. Most of our welders come from out of the area. We would like to see a welding training program in Grand County as it could help support our industry needs.” Although Williams does not hire many welders, according to Mr. Griffin, their contract wages can run up to \$80/hour for a highly specialized pipeline welder. Mr. Mark Hullinger, the Project Engineer, states, “Welders in the energy industry are highly sought after and are a big focal point on any project pertaining to safety, schedule, and quality of work. In short, many projects don’t happen without a qualified welder who is available.”

‘Made in Moab’ is a tag many companies would like to put on their products! Career pathways, beginning with a foundational Welding Certificate can lead to occupations that have strong incomes that can provide a living wage and which are higher than the current average monthly wage of \$2,721 for Grand County<sup>6</sup>.

Grand County is geographically isolated and rural, 260 miles from Salt Lake City and 120 miles from Grand Junction, CO with a population of 9,674. The Utah Department of Workforce Services data<sup>7</sup> shows that out of 29 Utah Counties, Grand County has the third highest poverty rate (17% vs 11.7% state). The average wage of \$2,721 is 27% less than the state-wide average. Other counties in the southeast region offer similar demographics. San Juan County, Grand County’s closest neighbor, has the highest poverty rate in the state, at 27.6%. Of particular concern, 16% of the Grand County’s children are experiencing intergenerational poverty, and 29% of our youth are at-risk of remaining in poverty as adults<sup>8</sup>.

With over 1.5 million visitors each year, Grand County’s economy is based on tourism with seasonal, low-paying jobs; typically without benefits or health insurance. Most families must work multiple jobs in order to make ends meet. A major goal of USU Moab is to prepare and train our local and regional workforce; thus paralleling the City and County’s Economic Development Plan to diversify Grand County’s economy. The Welding Certificate Program is a crucial component of this goal as well as a strategy for breaking the cycle of intergenerational poverty.

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<sup>6</sup> Utah DWS Economic Snapshot; Grand County 2018, First Quarter; Average Monthly Wage

<sup>7</sup> Utah DWS County Demographic Profile, July 2018

<sup>8</sup> Utah’s 7<sup>th</sup> Annual Report on IGP, 2018: <https://jobs.utah.gov/edo/intergenerational/igp18.pdf>

**ii. Leads to the attainment of a stackable sequence of credentials**

In 2015, in order to develop and implement career pathways and a pipeline into high wage, high demand careers, USU Moab and the Grand County School District formed a Consortium which consists of USU Moab, Grand County High School (grades 9-12) and the BEACON Afterschool Program (grades K-8). This allowed for the infrastructure to be built that provides our current career pathways model in several career fields; IT Support, Health Professions, Engineering Technology, Health Sciences and Business Support Professions. The Consortium’s overarching goal is to prepare students for entry into these stackable certificates programs and related jobs.

The proposed Welding Certificate Program will dovetail and build from BEACON to Grand County High School to USU Moab programs to establish academic and workplace competencies necessary for entry-level positions. The Consortium’s Pathway model begins with career awareness in the elementary schools bridging to college and career awareness and STEM academic assistance in the middle school, and then to work-based learning, job shadowing, internships, field trips and career pathway high school courses; as well as new concurrent enrollment courses within the stackable certificate programs; and finally moving to certificates of proficiency and completion and associate’s degrees at USU Moab that can be advanced through training at the bachelor’s degree levels. All programs have shared data collection and evaluation, common goals, and strengthened coordination in order to build smooth transitions for students’ progression through the pathways at each school.

The Welding courses and Certificates stack without duplication into the AAS General Technology or AAS Welding Technology Degree. Both the AAS Degrees can stack into the BS Technology Systems or the BS OPDD Degree:

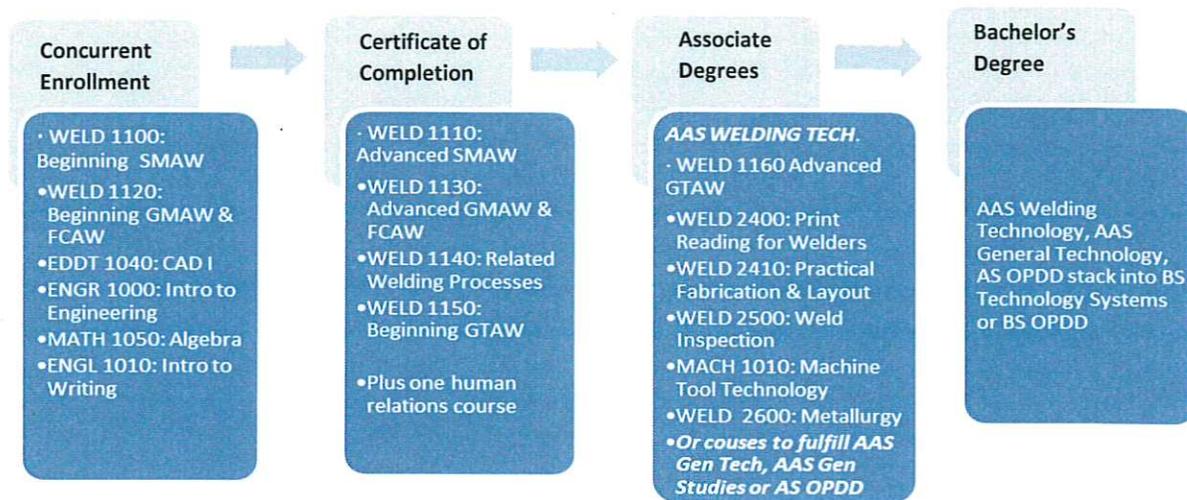


\* To be developed by fall 2020 from USU Logan’s SWI OPDD Program

**iii. Includes a non-duplicative progression of courses with academic and CTE content:**

The stackable credentials outlined above include academic content and career and technical education components at the certificate level, which stack without duplication into an Associate of Applied Science degree, which stacks without duplication into a Bachelor of Science degree in Technology Systems or Outdoor Products Design and Development.

**Chart of non-duplicative progression**



Please see Attachments for degree plan specifics.

**b) Expected student enrollment, attainment rates, and job placement rates;**

Table 2 below outlines projected student enrollments, attainment/completion rates and job placement rates for fall 2019 through spring 2021 semesters beginning at the certificate level. These numbers are based on our experience with other CTE pathways in the Southeast, and are informed by conversations with industry leaders. While these numbers may be small compared to urban centers, they represent significant achievements for our rural Southeast region.

Projected enrollments are limited to those entering and completing the first step of the pathway at the certificate level. AAS, AS and BS enrollments will occur in years three and four for those beginning their certificate program in the fall of 2019. It will take several years for this career pipeline to become full, which will coincide with industry growth from targeted economic development by the community.

**Table 2: Projected Enrollments, Completions, and Job Placements**

	Fall 2019	Spring 2020	Fall 2020	Spring 2021
# Enrollments	4	12	16	24
# Completers (certificate level)		4	11	14
# Job Placements		4	9	12

USU Moab and Grand County School District will maintain close ties with industry and partners, expanding work-based learning while establishing new job shadowing and internship programs with career placement strategies. Our consortium will work with USU academic units to integrate industry credentials into academic programs.

**c) Evidence of input and support from an Industry Advisory Group;**

With initial 2015 UCAP funding, our Industry Advisory Group (IAG) was formed to guide and advise the efforts of the Consortium that aligned their goals to STEM-based education and career readiness. The IAG is made up of local and regional business owners, DWS specialists and managers, as well as City and County officials who are actively engaged in identifying the skills and competencies needed for Grand County’s workforce. A letter from that group is attached in support of this proposal (please see Attachment F). Our ongoing commitment is to work closely with industry partners to develop educational programs that dovetail with skill sets needed for the industry to thrive.

Additionally, USU Moab will have access to USU Logan’s OPDD Advisory Board which has over 30 education partners and industry representatives. Many of their members have expressed necessity for OPDD Pathways Programs to provide local workforce for the industry and sustain outdoor industry growth in Utah. We intend to capitalize on their interest in Southeast Utah!

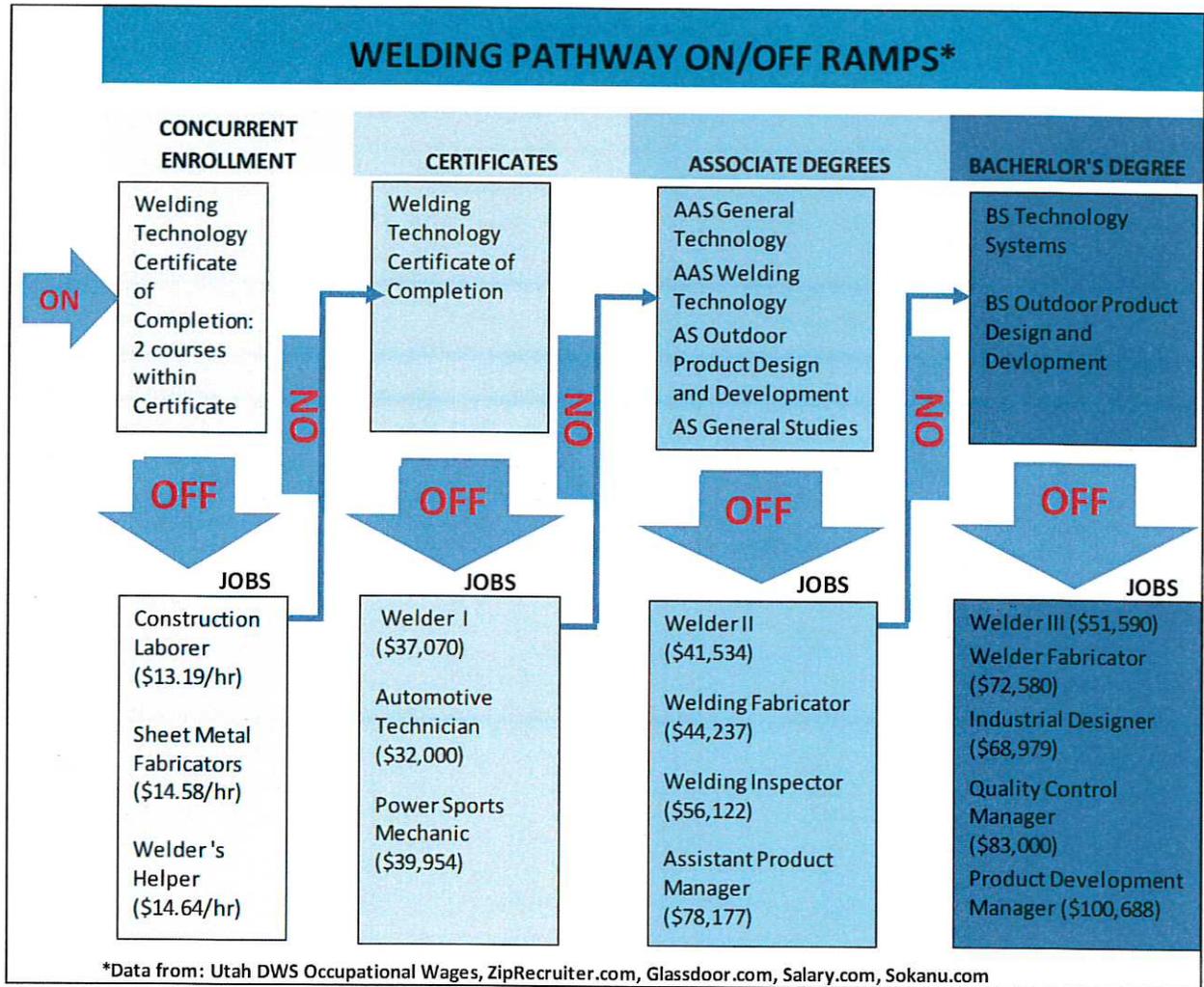
**d) Financial or in-kind contributions for program from Industry Advisory Group;**

The Industry Advisory Group meets on a semi-yearly basis and its members vary depending on the focus of the program being developed. All members contribute in-kind amounts from travel to and attending meetings, reviewing curriculum when asked and providing work based learning positions at their businesses at a minimum.

Additionally, industry partners not available to attend regular meetings are still considered partners. Our current Welding Program business partners and Industry Advisory Group have written letters of commitment – please see Attachment B. It is our commitment to expand the business partners as the Welding Program grows and develops.

**e) Job opportunities available at exit points in sequence of credentials**

Travis Gwinn, co-owner of Moab 4x4 Outpost and current service manager of Crump Reese Ford Dealership states, "Any base welding certification that USU Moab can offer is going to help anyone get a job in a variety of industries. Fewer and fewer people these days are learning how to weld and it's a great skill to have. Good certified welders are in high demand everywhere right now, it doesn't only fall into the fabrication world and off road world but construction, pipe line, art work; the possibilities are endless!"



**f) Evidence of official action in support of proposal;**

- Board of Regents

Per directions from the Utah System of Higher Education (USHE) Commissioner's office, a summary of this proposal will be reviewed by the Commissioner's office and a letter of support will be provided as part of the submission of the proposal. Also, the Commissioner's office will receive a full copy of this proposal as part of the submission process and will provide final support once the full proposal has been reviewed.

**g) Funding request and justification;**

Our greatest budgetary need is to develop instructional capacity that can support our growing stackable programs across the Southeast and Southwest regions, and to facilitate student development along career pathways that may begin with a certificate and eventually end with the completion of a bachelor's degree. For the development and implementation of the Welding Certificate pathway to support industry needs, funding for one full-time faculty member and welding equipment is essential.

**Table 3: Budget Request**

<b>BUDGET CATEGORIES</b>	<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>	<b>Matching Funds/Year</b>
<b>Salary</b>	\$61,000	\$62,830	\$64,715	\$20,000
<b>Fringe Benefits</b>	\$28,365	\$29,530	\$30,740	\$9,300
<b>Equipment</b>	\$98,450	\$95,455	\$92,360	\$12,500
<b>Total Program Expense</b>	<b>\$187,815</b>	<b>\$187,815</b>	<b>\$187,815</b>	<b>\$41,800</b>

Budget categories, roles/uses, and requested amounts for years 1 – 3 are described below.

**Salaries**

Requested salary support reflects 3% yearly increases.

- USU Moab welding faculty position  
Salary is requested for a full time USU Moab welding faculty position as follows.
  - Year 1: \$61,000
  - Year 2: \$62,830
  - Year 3: \$64,715

**Benefits**

Benefit rates applicable to each period are provided below.

- USU Moab welding faculty position
  - Year 1: \$28,365 at a rate of 46.5%
  - Year 2: \$29,530 at a rate of 47%
  - Year 3: \$30,740 at a rate of 47.5%

**In-kind**

In-kind amounts for each period are provided below.

- USU Moab support staff to Welding Certificate Program
  - \$10,000/year salary from CTE Coordinator
    - \$4,650 Benefits at 46.5% rate
  - \$5,000/year salary from Director of Students

- \$2,325 Benefits at 46.5% rate
  - \$5,000/year salary from Executive Director
    - \$2,325 Benefits at 46.5% rate
- Grand County School District
  - Facilities – The welding lab will be housed in the Grand County High School
    - \$12,500/year for facilities (\$83/sq. ft. x 150 sq. ft.)

**Equipment**

Launching a welding program from the ground up requires a large inventory of equipment. The table below outlines the program equipment needs for the first three years.

**Table 4: Equipment Budget**

Welding Equipment	Cost/Item	Quantity	YEAR 1	Quantity	YEAR 2	Quantity	YEAR 3
Miller 280 Welder	\$4,500	4	\$18,000	4	\$18,000	4	\$18,000
Fume Extractor	\$4,000	4	\$16,000	4	\$16,000	4	\$16,000
Bench Grinder	\$1,200	4	\$4,800	4	\$4,800	4	\$4,800
Material/Booths	\$1,000	4	\$4,000	4	\$4,000	4	\$4,000
Conveyer Table	\$1,000	1	\$1,000	1	\$1,000	1	\$1,000
Hypertherm Powermax45 XP Single Phase Power Supply	\$1,500	1	\$1,500	1	\$1,500	1	\$1,500
Power Wave C300 Multi Process Welder	\$7,600	1	\$7,600	1	\$7,600	2	\$15,200
Tomahawk 375Air Plasma Cutter with Air Compressor	\$1,800	1	\$1,800	1	\$1,800	1	\$1,800
Portable Fume Extractor: 1 Inlets, 1100 cfm Max Air Flow, 120V,	\$2,500	2	\$5,000	2	\$5,000	1	\$2,500
Baileigh SH-70250-HD heavy duty hydraulic shear	\$37,000	1	\$37,000				
Welding Gear (helmets, gloves, safety apparel, etc.)			\$1,000		\$3,455		\$810
Shop tools and Consumables			\$750		\$7,000		\$7,000
Proportional two-gas mixer, Argon/Co2	\$2,000			2	\$4,000	2	\$4,000
Mobile Weld Fume Control Untis Mobiflex® 200-M LFA 3.1 10 ft Arm One-Pak Pkg.	\$5,250			4	\$21,000	2	\$10,500
Hand Grinders	\$150			2	\$300	6	\$900
Vertical Gas Cylinder Locker - Assembled, 10 Cylinder Capacity	\$600					2	\$1,200
Welding Electrode Holding Oven	\$1,050					3	\$3,150
<b>TOTALS</b>			<b>\$98,450</b>		<b>\$95,455</b>		<b>\$92,360</b>

USU Moab and industry and school district partners are ready to be the front-runners in developing and implementing a Welding Career Pathway Program for workforce development in Grand County.

## **ATTACHMENT A: DEGREE COMPLETION PLANS**

- Certificate of Completion Welding Technology
- Associate of Applied Science Welding Technology
- Associate of Applied Science General Technology
- Bachelor of Science Outdoor Product Design & Development
- Bachelor of Science Technology Systems

Certificate of Completion Welding Technology					
Courses		Credit	Notes	Semester Completed	Grade
<b>Welding Courses - Choose 23 credits</b>		<b>23</b>			
WELD 1100	Beginning SMAW	7			
WELD 1110	Advanced SMAW	3			
WELD 1120	Beginning GMAW & FCAW	7			
WELD 1130	Advanced GMAW & FCAW	3			
WELD 1140	Related Welding Processes	7	Course only offered Spring Semester in an Even Year		
WELD 1150	Beginning GTAW	7			
WELD 1160	Advanced GTAW	3			
WELD 2400	Print Reading for Welders	3	Pre-requisite: MATH 1020 Course only offered Fall Semester in an Even Year		
WELD 2410	Practical Fabrication & Layout	3	Pre-requisite: MATH 1020		
WELD 2500	Weld Inspection	3	Pre-requisite: MATH 1020		
WELD 2600	Metallurgy	3	Course only offered Fall Semester in an Even Year		
<b>Electives- Choose ONE</b>		<b>2-3</b>			
EDDT 1040	CAD Level I: Intro to CAD	3	Pre-requisite: EDDT 1010 or related drafting experience		
MACH 1010	Machine Tool Technology	3			
PHYS 1010	Elementary Physics (BPS)	3			
PHYS 1040	Elementary Astronomy	3			
PHYS 1050	Technical Physics	3			
CHEM 1010	Introduction to Chemistry (BPS)	3			
EDDT 2650	Mechanical Blueprint Reading	2			
ENGN 1000	Introduction to Engineering	2			
<b>Math -Choose ONE</b>		<b>3</b>			
MATH 1020	Trade Math	3	Pre-requisite: MATH 0950 or Placement exam		
MATH 1030	Quantitative Reasoning	3	Pre-requisite: MATH 0995 or Placement exam		
MATH 1050	College Algebra (QL)	4	Pre-requisite: MATH 0995 or Placement exam		
<b>Human Relations -Choose ONE</b>		<b>3</b>			
BUSN 2320	Small Business Management CTE	3			
BUSN 2390	Organizational Behavior	3			
CMST 2110	Interpersonal Communication	3			
CMST 2120	Group Communication	3			
<b>Written Communication - Choose ONE</b>		<b>3</b>			
ENGL 1010	Introduction to Writing (CL1)	3			
BUSN 2988	Technical Writing	3			
<b>Degree Total</b>		<b>34-35</b>			

**Associate of Applied Science  
Welding Technology**

Courses	Credit	Notes	Semester Completed	Grade
<b>Welding Courses : Choose 46 Credits</b>	<b>46</b>			
WELD 1100 Beginning SMAW	7			
WELD 1110 Advanced SMAW	3			
WELD 1120 Beginning GMAW & FCAW	7			
WELD 1130 Advanced GMAW & FCAW	3			
WELD 1140 Related Welding Processes	7	Course only offered Spring Semester in an Even Year		
WELD 1150 Beginning GTAW	7			
WELD 1160 Advanced GTAW	3			
WELD 2400 Print Reading for Welders	3	Pre-requisite: MATH 1020 Course only offered Fall Semester in an Even Year		
WELD 2410 Practical Fabrication & Layout	3	Pre-requisite: MATH 1020		
WELD 2500 Weld Inspection	3	Pre-requisite: MATH 1020		
WELD 2600 Metallurgy	3	Course only offered Fall Semester in an Even Year		
<b>Support Courses</b>	<b>6</b>			
EDDT 1040 CAD Level I: Intro to CAD	3	Pre-requisite: EDDT 1010 or related drafting experience		
MACH 1010 Machine Tool Technology	3			
<b>Electives - Choose ONE</b>	<b>2-3</b>			
PHYS 1010 Elementary Physics (BPS)	3			
PHYS 1040 Elementary Astronomy	3			
PHYS 1050 Technical Physics	3			
CHEM 1010 Introduction to Chemistry (BPS)	3			
EDDT 2650 Mechanical Blueprint Reading	2			
ENGN 1000 Introduction to Engineering	2			
Any other general education course	3	As approved by instructor or advisor		
<b>Math -Choose ONE</b>	<b>3-4</b>			
MATH 1020 Trade Math	3	Pre-requisite: MATH 0950 or Placement exam		
MATH 1050 College Algebra (QL)	4	Pre-requisite: MATH 0995 or Placement exam		
<b>Human Relations -Choose ONE</b>	<b>3</b>			
BUSN 2320 Small Business Management CTE	3			
BUSN 2390 Organizational Behavior	3			
CMST 2110 Interpersonal Communication	3			
CMST 2120 Group Communication	3			
<b>Written Communication - Choose ONE</b>	<b>3</b>			
ENGL 1010 Introduction to Writing (CL1)	3			
BUSN 2988 Technical Writing	3	-	-	-
<b>Degree Total</b>	<b>63-65</b>			

# Utah State University

## Associate of Applied Science (AAS)

### General Technology

Cr

Prerequisites / Notes

General Education Requirements				16 minimum credits required	
<b>Communication Literacy</b>				<b>3</b>	
<input type="checkbox"/>	ENGL 1010	Introduction to Writing (CL1)	3	or ENGL 2010	
<b>Math Requirement</b>				<b>4</b>	
<input type="checkbox"/>	QL	Quantitative Literacy	4	MATH1030 (QL); MATH1050 (QL); STAT1040 (QL); STAT1045(QL); BUSN1050 or MATH1020 will be accepted; take a QL class if planning to pursue a BS degree	
<b>Breadth Requirements</b>				<b>9</b>	
<input type="checkbox"/>	BAI	Breadth American Institutions	3	APEC 1600 or ECN 1500 preferred	
<input type="checkbox"/>	BHU or BSS	Breadth Humanities or Social Science	3		
<input type="checkbox"/>	BLS or BPS	Breadth Life or Physical Science	3		
Technical Requirements for Degree				17 minimum credits required	
<b>Core Courses (Human Relations and Communications)</b>				<b>6</b>	
<input type="checkbox"/>	BUSN 2320	Small Business Management for CTE	3		
<input type="checkbox"/>	BUSN 2200	Business Communications	3	Prereq – ENGL 1010	
<b>Designated Electives from an Emphasis Area</b>				<b>11</b>	
Emphasis Options					
General Business Emphasis				Technology Systems Emphasis	
<input type="checkbox"/>	BUSN 2010	Financial Accounting	4	<input type="checkbox"/>	ASTE 2250 Occupational Experience 1-6
<input type="checkbox"/>	BUSN 2020	Managerial Accounting	4	<input type="checkbox"/>	BUSN 2390 Organizational Behavior 3
<input type="checkbox"/>	BUSN 2050	Business Law	4	<input type="checkbox"/>	BUSN 2590 Business Ethics & Social Responsibility 2
<input type="checkbox"/>	BUSN 2390	Organizational Behavior	3	<input type="checkbox"/>	CMST 1020 Public Speaking (BHU)*** 3
<input type="checkbox"/>	BUSN 2590	Business Ethics & Social Responsibility	2	<input type="checkbox"/>	TEE 1010 Communications Technology 3
<input type="checkbox"/>	BUSN 2800	Computerized Accounting	2	<input type="checkbox"/>	TEE 1020 EPT Systems Control Technology 3
<input type="checkbox"/>	BUSN 2988	Special Problems (Entrepreneurial Thought)	1-3	<input type="checkbox"/>	TEE 1030 Material Processing System 3
<input type="checkbox"/>	CMST 1020	Public Speaking (BHU)***	3	<input type="checkbox"/>	TEE 1040 Construction and Estimating 3
<input type="checkbox"/>				<input type="checkbox"/>	TEE 1200 Computer-Aided Drafting & Design* 3
				<input type="checkbox"/>	TEE 2020 Computer-Intg. Mfg. Systems 3
				<input type="checkbox"/>	TEE 2030 Wood-based Mfg. Systems 3
				<input type="checkbox"/>	TEE 2220 Civil Engineering & Architecture** 3
				<input type="checkbox"/>	TEE 2230 Advanced Material Processing System 3
				<input type="checkbox"/>	TEE 2300 Electronic Fundamentals (QI) 4
Design and Creative Arts Emphasis****				Allied Health Systems Emphasis	
<input type="checkbox"/>	ART 1010	Exploring Art (BCA)	3	<input type="checkbox"/>	BIOL 1500 Anatomy and Physiology (BLS) 3
<input type="checkbox"/>	ID 1750	Design in Everyday Living (BCA)	3	<input type="checkbox"/>	BIOL 2320 Human Anatomy 4
<input type="checkbox"/>	LAEP 1030	Intro to Landscape Architecture (BCA)	3	<input type="checkbox"/>	BIOL 2420 Human Physiology 4
<input type="checkbox"/>	OPDD 1700	Outdoor Prod Design & Dev Prof Sem	1	<input type="checkbox"/>	FCHD 1500 Human Dev. Across the Lifespan (BSS) 3
<input type="checkbox"/>	TEE 1010	Communications Technology	3	<input type="checkbox"/>	HEAL 2020 Emergency First Response 3
<input type="checkbox"/>	TEE 1030	Material Processing System	3	<input type="checkbox"/>	HEP 2500 Health and Wellness 2
<input type="checkbox"/>	TEE 1200	Computer-Aided Drafting & Design*	3	<input type="checkbox"/>	NDFS 1020 Science & App of Human Nutrit (BLS) 3
<input type="checkbox"/>	TEE 2030	Wood-based Mfg. Systems	3	<input type="checkbox"/>	NURS 1008 Medical Terminology 2
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					
900 hour Tech College Certificate or Cert of Proficiency/Completion				30 credits (credits transferred at time of graduation application)	
<b>Degree Total</b>				<b>63 minimum credits required</b>	

\*EDDT1040 or EDDT1070 can be substituted; \*\*EDDT1100 can be substituted; \*\*\*CMST1330, CMST2110 or CMST2120 can be substituted; \*\*\*\* ART2400, ID1790, LAEP1350, OPDD1750, FCSE1140, FCSE2040 or a lower level art or interior design course can be substituted upon advisor permission. Course substitutions are reviewed on a case-by-case basis. Please work with Academic Advisor for course selections.

Updated –  
09/12/2017





## **ATTACHMENT B: LETTERS OF COMMITMENT**

- Industry Advisory Group
- Eddyline Welding
- Moab Motorsports
- Slick Rock Auto
- High Desert Repair



November 15, 2018

Dear Committee Members,

We the undersigned, as engaged and active members of the Industry Advisory Group, strongly commit to USU Moab and Grand County School District's (BEACON Afterschool Program and Grand County High School) Consortium.

We applaud the efforts of both organizations to continue to create and enhance career pathways that lead to local workforce training and education. It is clear that Grand County has unique needs when it comes to growing a diverse economy; one that is not totally dependent on tourism and hospitality. Business creation and expansion in our region is limited by the lack of training and education opportunities. This joint initiative will strengthen and diversify the regional workforce, enhance critical job skills, and promote the development of STEM-based skills within the local workforce. With access to these programs, local employees and students will be able to identify career paths and move up well defined career ladders.

We are excited and committed to helping grow these important programs. Each of us commits to continue to be an active member of the Industry Advisory Group and will work to enhance and expand the stackable credential programs within our region. We will provide curriculum and skills review, field trips to our businesses, conduct 'job shadowing' events and continue to engage students in K-12 grades at all schools within Grand County School District.

Please consider fully funding the Strategic Workforce Initiative application.

Sincerely,

Bill Hulse  
Grand County Building Inspector

Gordon Beh  
Larson CPAs: Partner

Matthew Hardin  
Symas Corporation:  
Chief Operating Officer

Delite Primus  
Youth Garden Project: Director

Sasha Reed  
USGS: Research Ecologist

Katherine Sullivan  
HR Director  
Moab Regional Hospital

Rhiana Medina  
Director  
Moab Valley Multicultural Center

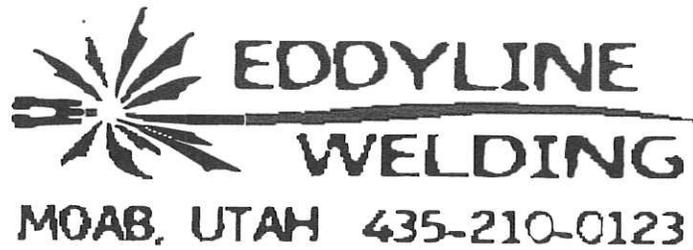
Kevin Davis  
Master Electrician

Beth McCue  
Director  
Small Business Development Center

Kim McFarland  
Director  
Canyonlands Care Center

Edith Sage  
Director  
BEACON Afterschool Program

Jim Stocks  
CTE Director  
Grand County High School



November 5, 2018

Re: USU Moab's Strategic Workforce Initiative Proposal

Dear Committee Members,

I would like to express my commitment and support of Utah State University Moab's proposal. As a small business owner within the Outdoor Products Industry, I see this proposal as a big step forward in educating, training and aligning our local workforce with high demand, high wage jobs and careers in this emerging industry within Grand County and the Southeast Region.

The proposed Welding Career Pathway, beginning with elementary students and progressing through middle school, high school and post-secondary education, will provide opportunities for students to become excited about the different careers within the outdoor products industry, including welding. Our region has lacked these important resources and I look forward to working with USU Moab and the school district in their endeavors to develop and implement the proposed pathway.

As a committed partner in USU Moab's Welding Pathway Project, Eddyline Welding will commit to the following:

- Hosting field trips for K-12 students to my business to help expose students to STEM skills and outdoor product development and design
- Donating aluminum and steel remnants to the Welding Program
- Offering job shadowing opportunities to students
- Offering to work with the high school to become a work-based learning site
- Working with USU Moab for an internship spot that would be appropriate and available

Please consider fully funding this application.

Sincerely,

Mike DeHoff, Owner  
Eddyline Welding  
420 Kane Creek Blvd  
Moab Utah, 84532  
eddylinewelding.com

RIVER AND RECREATION RELATED WELDING

RAFT FRAMES

DRY BOXES

SAND STAKES

December 3, 2018



Re: USU Moab's Strategic Workforce Initiative

SWI Proposal Committee,

As own/operator of Moab Motorsports, I fully support and commit to USU Moab's proposal to implement a welding program for Grand County residents. Welding skills are a foundational need in my line of work of fabrication and repairs of motor sports. My employees, which are hard to find, all have specialized welding skills. Having a foundational welding certificate available in Grand County would help to diversify our economy and strengthen our workforce development. This County needs more trades-type trainings and USU Moab is the only educational institution doing it. I applaud their Welding Certificate proposal. Moab Motorsports will commit to working with the Welding Program by providing and participating in:

- Guest speaker in program
- Job shadowing opportunities
- Internship positions
- Providing materials for labs

This funding is crucial to train welders in the outdoor products arena currently and for the future growth of this industry in Grand County and the Southeast Region.

Please consider fully funding this important Strategic Workforce Initiative.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rory Irish', is written over a horizontal line. The signature is fluid and cursive, extending to the right.

Rory Irish  
Owner/operator  
Moab Motorports



December 4, 2018

Re: USU Moab's Strategic Workforce Initiative Proposal

SWI Committee,

This letter is written in full support of USU Moab's Welding Certificate Pathway Proposal. As an owner of a successful auto repair shop, welding skills are needed in the ever-increasing use of power sports, especially during the tourism time of year. When the season is in full swing, our business expands into repair and fabrication of a variety of outdoor sports vehicles. It is paramount that our employees have the welding skills necessary to repair these vehicles. Having a foundational welding certificate program would help tremendously to provide local workforce in a time when it is much needed by industry here in Moab.

Our business supports a work-based learning position in our shop and I am committed to continuing supporting it; as well as being available to offer consultation and advice for the welding program. We need to 'grow our own' workforce and it's important to have training programs available in Grand County. Please consider funding this much needed welding certificate program.

Sincerely,

Bob Frayser  
Owner/operator  
Slick Rock Auto Spa

**SLICK ROCK AUTO SPA**

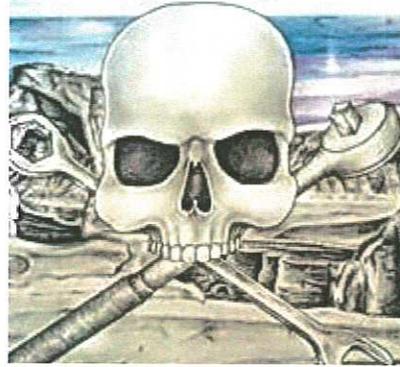
**LOCATED AT:**

**1076 S. MAIN ST., MOAB, UT 84532**

**PHONE / FAX (435) 259-7092**

December 4, 2018

Re: USU Moab's Strategic Workforce Initiative Proposal



**HIGH DESERT REPAIR**  
*1080 Millcreek Drive*  
*Moab, Utah 84532*

Strategic Workforce Initiative Committee,

High Desert Repair offers welding and fabrication services as well as auto repairs for foreign and domestic vehicles and diesel and heavy duty trucks. I am offering this letter in support and commitment for the welding certificate program. As an owner of an outdoor product and recreation business, I see the need to establish training pipelines for building skills in our local workforce within this industry. As the outdoor products and recreation industry grows in Grand County and the Southeast Region, our community needs a skilled workforce in order to prepare for upcoming high demand, high wage jobs. This proposal addresses that need for our industry. The welding certificate program is the entry-level training needed for the first step in this career pathway. A good welder is hard to find and this program will be able to provide training to those who want to become great welders!

As a commitment to the welding certificate program, High Desert Repair will: 1) donate welding remnants to the welding program, 2) be available to be a guest speaker in the program, and 3) provide consultation and advice to the program. Please give the proposal your full consideration.

Sincerely,

Larry Broderick  
Owner/operator  
High Desert Repair

**ATTACHMENT C: EDUCATIONAL PARTNER COMMITMENT**

- Grand County School District

# GRAND COUNTY HIGH SCHOOL



Home of the Red Devils • 608 South 400 East, Moab, Utah 84532

Phone: (435) 259-8931 • Fax: (435) 259-4191 • [www.grandschools.org/highschool](http://www.grandschools.org/highschool)

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December 3, 2018

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

Re: Strategic Workforce Investment: Welding Career Pathway Proposal

The Grand County School District is in complete support of USU Moab's proposal for Strategic Workforce Investment funds to support a Welding Career Pathway that targets the Outdoor Products industries. There is no place like Moab to manufacture, fabricate, design and develop outdoor products, especially in the power sports, water sports and climbing equipment arenas.

By offering USU program courses that are part of the welding certificate as concurrent enrollment, students can get an early start into the welding career pathway. The pathway and the articulation leading to stackable credentials at USU will help to diversify and bolster our local economy and strengthen educational opportunities in the area.

As a partner in the Consortium with USU Moab, we are ready to assist with the welding program. Our school district is committed to:

- Provide managerial oversight for the program as it relates to our students
- Providing in-kind facility space at the high school for placement of the welding lab valued at \$12,500/year. Please see SWI Proposal for in-kind budget details.
- Engaging our teachers and industry leaders in professional development
- Being an active member of the Industry Advisory Group
- Designing and implementing curriculum processes per USOE and USHE standards
- Reporting on short term wins and long term advancements

The Grand County School District has a strong working relationship with Utah State University. The school district and university are committed to designing an educational program that meets workforce needs, advances educational pathways and provides competent workers for the growing outdoor products industry in Utah. We are confident that Utah State University will work with education and industry partners and leverage Strategic Workforce Initiative funds to improve economic vitality in the outdoor product rich region of Southeast Utah.

Sincerely,

James Stock, Ed.S.

Director, Career and Technical Education

Stephen Hren, EdD.

Principal

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Dr. Stephen Hren  
Principal

Ms. Cari Caylor  
Associate Principal

Mr. Ron Dolphin, CAA  
Activities Director

Mr. James Stocks, Ed.S.  
CTE Director

To educate all students in a safe, supportive, challenging environment where they can learn to be responsible citizens and lifelong learners