

2013 – 2014 UCAP Projects Highlights & Outcomes



Utah Cluster
Acceleration
Partnership
UCAP



Fellow State Leaders,

The Utah Cluster Acceleration Partnership is one of the most innovative workforce development programs in the nation. By bringing together education leaders, business innovators, and workforce development experts to better align educational outcomes with industry needs, we are positioning Utah for unprecedented economic success.

We recognize the unlimited potential of Utah's greatest resource: its people. We strive to optimize the impact of Utah's world-class workforce by empowering Utahns with the skills to apply their innovative talent in high-demand career fields. Our UCAP grants are building better pipelines between what students learn in the classroom and what employers need in the work place—and we are seeing these successes all over the state. Whether it's robotics-based manufacturing in Northern Utah, or cutting-edge computer coding in St. George, Utah's future workforce is truly pushing the envelope of what's possible.

We are pleased to provide you this report highlighting the successes and outcomes of the 2013-2014 UCAP grant period. And we are ever committed to improving Utah's education, business, and workforce partnership as we prepare today's students for tomorrow's careers.

Sincerely,

A handwritten signature in black ink that reads "Dave Buhler".

Dave Buhler

A handwritten signature in black ink that reads "Jon Pierpont".

Jon Pierpont

A handwritten signature in blue ink that reads "Val Hale".

Val Hale



2013 – 2014 Utah Cluster Acceleration Partnership – Project Summary

Background: In 2009, The Department of Workforce Services (DWS), the Utah System of Higher Education (USHE) and the Governor’s Office of Economic Development (GOED), partnered together to create the Utah Cluster Acceleration Partnership (UCAP). This partnership was designed to help strengthen the alignment between industry needs and educational programs by convening industry groups.

In July 2013 the UCAP program was redesigned to provide grants to public post-secondary educational institutions to develop, implement or enhance educational programs that meet industry needs. UCAP also provides assistance for cluster industry initiatives. A total of **15** applications (12 different training institutions and 3 economic development partners) were approved, totaling **\$2,017,270**. These funds coupled with **\$3,346,618** in leveraged resources were used to develop **25** new certificate or degree programs, expand capacity for **6** existing programs and support **3** economic development projects. This created the capacity for **875** new training slots annually to support the Governor’s 66% by 2020 initiative.

UCAP Award/Outcome Summaries:

Bridgerland Applied Technology College (BATC) \$174,560 (\$200,000 leveraged)

Project Title: Automated Manufacturing – Robotics and Composites Certificate Expansion

- Enrollment began October 2013
 - 43 people have been trained and received industry-recognized certifications
 - 21 with Motoman Robotics Merit Certification
 - 22 with Fanuc Robotics Certification
 - 10 students have completed the Introductory Robotics class
 - 39 students have completed the Automated Manufacturing PLC classes
 - 5 people have completed the basic and advanced composites classes
- BATC is a Motoman Certified Merit Training Center
 - There are currently only three certified centers in the country – the next-closest being in Ohio
 - As a certified MERIT training center the ratio of students to robots is 2 to 1, with 4 Motoman robots; this allows BATC to train 8 students at a time
- BATC is also a Fanuc Certified training facility with 4 Fanuc Robots with similar requirements for training
- Starting July 1, 2014, BATC has four certificates approved. Current students and those new enrolling students will qualify to earn these new Automated Manufacturing and Robotics certificates:
 - 330 hour certificate – Industrial Robotics Basic
 - 600 hour certificate – Autonomous Mobile Platforms
 - 900 hour certificate – Industrial Robotics Advanced
 - 1500 hour certificate – Automated Manufacturing Advanced
- Career pathways established for students who have completed 900 hour certificate programs to move on to the next level at Utah State University (USU) and receive 30 credits towards an AAS in General Technology
- Articulation Agreements are being developed to allow students to move into BS programs at USU in Engineering or Technology; into Engineering Robotics Technology (ERT) or Manufacturing Management at Utah Valley University (UVU), the latter which is an online degree

- High School Competitions: During the last year BATC hosted one of the VEX robotics competitions with over 300 in attendance and 18 teams competing
 - One BATC student went on to compete at the world VEX competition in Anaheim, CA, placing 27th

Davis Applied Technology College (DATC) \$250,000 (\$351,610 leveraged)

Project Title: Injection Molding Program Development

- Enrollment for this program began December 15, 2014, and classes will begin January 19, 2015

Dixie State University (DSU) \$188,400 (\$193,000 leveraged)

Project Title:

- Hosted first-ever Code School with 58 applicants and 32 individuals accepted into the program
 - Code School was ten weeks, 5 days a week, from 9:00am-4:00pm
 - Along with DSU, instructors were also provided from the private sector: Rocketmade, BusyBusy, CustomBit and Velocity Webworks
 - Courses included: HTML & CSS, JavaScript, Web API's, Client Side MVC, Server Side MVC, Project Development and Web App Development
- Summer Camp Enrollments were as follows:
 - 96 – Computer Camp for 6th Graders
 - 68 – Computer Camp, ages 8-18
 - 52 – Girls Go Digital!, ages 8-18

Dixie Applied Technology College (DXATC) \$45,000 (\$130,000 leveraged)

Project Title: IT Certifications

- Added 18 work stations in a MAC lab
- Became a certified testing center for A+, Network + and Security +
- 13 adult students enrolled with 6 adults that have completed national certifications
- 14 HS students enrolled in the AM-STEM IT program with all of them earning national certifications

Impact HUB \$150,000 (\$600,000 leveraged)

Project Title: Entrepreneurship and Business Acceleration

- 100 active members
- Hosted more than 50 events in 2014 facilitating collaboration among the start-up community and/or educating members on issues and resources available
- Launched a 12-week Software Development Program
- Moving into newly renovated facility in February 2015

Mountainland Applied Technology College (MATC) \$200,000 (\$493,209 leveraged)

Project Title: Advanced Machining Program

- 4 students completed the Machine Tool program in May and began the CNC Machining Program in August
- Both the Machine Tool Technology and CNC Machining programs have received accreditation approval from the Council on Occupational Education
 - Both programs have also been approved for financial aid
 - This will increase the ability of students to afford the program

Office of Energy Development / University of Utah (U of U) \$200,000 (\$332,000 leveraged)

Project Title: Energy Research Projects and Talent Development Initiative

- Total requested funding was \$1,230,793 for an available \$445,000, indicating a strong need within the research community for additional funding for Utah-focused research and workforce development
- 7 projects (3 faculty and 4 student) were funded
- During the Energy Development Summit on June 3rd and 4th, 2014, students were recognized at the summit breakfast and participated in poster sessions throughout the day
- Faculty winners participated in an afternoon panel discussion moderated by Al Walker
- **TIER 2 – GOVERNOR’S ENERGY LEADERSHIP SCHOLARS**
 - From USU, Ph.D. candidate Nan Jiang was selected for her proposal on Developing Hydrogen Evolution Catalysts Using First-Row Transition Metal Chalcogenides, or production of hydrogen fuel cells from solar power
 - From Brigham Young University (BYU), B.S. candidate Stephen Erickson was selected for his proposal on Materials Study for Future Layered Photovoltaics Using Protein Enclosed Nanocrystals, or photovoltaic production process improvements
 - From the U of U, Ph.D. candidate Leila Ghadbeigi was selected for her proposal on Evaluation of Cold Temperature Performance of PCM-Based TMS in Hybrid Electric Vehicles, or the study of hybrid electric vehicle battery performance at cold temperatures
 - The fourth project was designated for a Utah student resident from a North American Indian tribe, but despite diligent outreach by ERT staff, no tribal members applied for the grant
 - Therefore, the fourth and final student project was designated to be a “jump ball” for the best remaining project from any university
 - Matthew Judge, a B.S. Candidate at the University of Utah was selected for his research on High Performance Mg₂Si Nanostructured Thermoelectric Materials, or molten salt research
- **TIER 1 – PRINCIPLE ENERGY ISSUES**
 - From USU, a project being led by Dr. Marc Mansfield with co-investigators of Dr. Seth Lyman (USU), Dr. John Horel (U of U) and Dr. Jaron Hansen (BYU) will study Computer Modeling of Winter Ozone Formation in the Uintah Basin
 - From BYU, a project being led by Dr. Daniel Ess, with co-investigators Dr. Caroline Saouma (U of U) and Dr. Yujie Sun (USU), will examine Catalytic Conversion of Carbon Dioxide to Carbon Monoxide and Methanol
 - From the U of U, a project being led by Dr. Rich Roehner with co-investigators Dr. Michael Hoepfner (U of U), Dr. Scott Hill (USU) and Dr. John Hedengren (BYU) examines Characterization of Waxy Crude Deposition in Pipelines

Ogden Weber Applied Technology College (OWATC) \$200,000 (\$212,715 leveraged)

Project Title: Non Destructive Inspection (NDI) Certificate

- The NDI Program launched March 17, 2014, with 15 students enrolled and expected to receive certificates of completion within 6 months
- The NDI certificate is industry-validated with capacity to train 75-100 students annually
- **Stackable credentials established:**
 - NDI training integrated into Composites certificate program; Composites modules included in NDI curriculum

- New collaboration efforts with Weber State University (WSU) to integrate NDI training into manufacturing engineering degree programs for university students
- Continued collaboration with Salt Lake City Community College's (SLCC) NDI program to provide an expanded educational pathway

Uintah Basin Applied Technology College (UBATC) \$100,000 (\$169,900 leveraged)

Project Title: Healthcare Programs Expansion

- Equipment was purchased and installed
- Training has been provided for Alicia Tegan, Director of Nursing for UBATC; Diane Remington, Nursing Administrative Assistant and Lab Technician; Monty Hardinger, Nurse Educator; and Kristy Keel, Pediatric Nurse from Uintah Basin Medical Center

Utah Manufacturer's Association (UMA) \$102,500 (\$15,000 leveraged)

Project Title: Virtual Industrial Park

- Over 500 Utah companies are now registered to use the Utah Capabilities Assessment Network (UCAN) System.

Utah State University Eastern – Price Campus \$55,000 (\$110,000 leveraged)

Project Title: Welding Program Expansion

- A new instructor has been hired
- Shop expanded to facilitate the installation of the additional equipment
 - Expansion will allow for an additional 5 students per class
 - Expansion capacity made available beginning Fall of 2014

Utah State University Eastern – Price Campus \$86,850 (\$94,293 leveraged)

Project Title: Medical Assistant Program

- The nursing department is working to begin the program in Fall Semester 2015
- The delay in hiring an instructor complicated the task of purchasing the needed equipment and specifically the supplies
- This program was ultimately moved from the Center for Workforce Development to the College of Nursing

Utah State University – Blanding \$89,960 (\$126,336 leveraged)

Project Title: Heavy Equipment Operator Certificate Expansion

- The purchase and installation of the simulators was completed and training provided for the instructors
- In Spring of 2014, simulator training was integrated into the existing curriculum including the development of contextualized learning and competency based metrics
- Capacity has increased from 24 to 36 annually
- The use of the simulators in the classroom as opposed to all training being done on the actual equipment has resulted in an annual fuel cost savings of \$61,843.50
- Simulators are mobile and were able to be used at a STEAM Expo for recruiting and education

Utah Valley University (UVU) \$157,000 (\$324,000 leveraged)

Project Title: Business Engagement and Information Technology (IT) Certificate Expansion

- With funding from a Utah Cluster Acceleration Project (UCAP) grant, work was begun Fall 2013 to create two pathways in the Information Technology Cluster:
 - Certificates of Proficiency (COP) in the IT Cluster – Certificate programs are provided to secondary education students through UVU concurrent enrollment:

- COP in Computer Science
 - COP in Information Technology
 - COP in Digital Media
- Non-credit Certificates of Proficiency in Software Testing – Certificates focus on adult training and are delivered through UVU Community & Continuing Education:
 - Level 1: Beginning Software Testing Non-credit COP
 - Level 2: Advanced Software Testing Non-credit COP
- The publication “Utah Valley University Business Engagement Strategy Career Pathways – Phase II: Computer Science and Software Engineering, 2013-2014” has been updated and reproduced

Weber State University (WSU) \$18,000 (\$9,555 leveraged)

Project Title: Solar Energy Institute North American Board of Certified Energy Practitioners NABCEP Accelerated Training Proposal

- With generous support from Utah Cluster Acceleration Program, WSU Department of Engineering Technology expanded a new partnership with a regional alternative-energy small business (Gardner Alternative Engineering), and strengthened a training collaboration with Solar Energy International (SEI), a DoE-accredited NABCEP training provider.
- Four Engineering Technology students successfully completed an accelerated-training sequence in solar photo-voltaic system design and installation during May-June 2014
 - A total of four courses, two online, and two laboratory weeks, comprised a training sequence equivalent of 150 hours
 - The students recently completed the computer-based format NABCEP Entry-Level-Certification Exam
 - Four offers of employment (part-time and full-time at Gardner Engineering, South Ogden, UT) are immediate and relevant outcomes of the new program
 - In addition, Gardner Engineering has agreed to fully reimburse the NABCEP Certification Entry-Level Exam fee for any future employee
- The direct-training collaboration for senior-level students is the first phase of a department alternative-energy curriculum development plan. Future progress for the Engineering Technology department directly related to the contributions of 2014 UCAP include the following:
 - WSU – ET is offering an alternative-energy course for the fall semester
 - WSU – ET is acquiring photovoltaic laboratory hardware
 - WSU – ET will submit USDA SBIR grant proposals with additional sustainable-technology small businesses in the Ogden community