

March 18, 2015

MEMORANDUM

TO: State Board of Regents

FROM: David L. Buhler

SUBJECT: Utah Cluster Acceleration Partnership Report

Issue

This document provides a summary of the Utah Cluster Acceleration Partnership for projects funded during the 2014-15 fiscal year.

Background

In 2009, the Department of Workforce Services (DWS), the Utah System of Higher Education and the Governor's Office of Economic Development, partnered to create the Utah Cluster Acceleration Partnership (UCAP). This partnership was designed to strengthen the connection between industry and higher education by developing and strengthening programs and infrastructure that align with current and emerging workforce needs. Initial funding came primarily from American Recovery and Reinvestment Act (ARRA) funds and from Job Growth funds contributed by DWS. These initial funds were invested to build capacity in aerospace, energy, digital media, health care, life sciences, international business, and manufacturing. Projects were generally funded with the objective to have state-wide reach.

In July, 2013 after the initial ARRA funds were committed, the UCAP program was redesigned to provide grants on a regional basis (within the state) to public post-secondary educational institutions and economic development agencies. Under this redesigned structure, institutions apply for grants that target specific workforce needs within a region. Job Growth funds from DWS and matching funds from grant recipients provide the monetary resources to implement the projects. The attached report provides a summary of results from the projects that were funded in fiscal year 2013-14.

For FY 14, a total of 15 applications (12 different training institutions and three economic development partners) were approved, totaling \$2,017,270. These funds, coupled with \$3,346,618 in leveraged resources from grant recipients, were used to develop 25 new certificate or degree programs, and to expand capacity for six existing programs and three economic development projects. These projects have supported the Governor's 66% by 2020 initiative by expanding capacity such that 875 new training slots are available annually to prepare people for high-demand and technically-oriented employment opportunities.

The UCAP initiative continues to be a viable component for growing innovative programs that have direct alignment with current and emerging industry needs. During FY15, an additional \$2M was funded to 15 additional projects. These projects are currently being implemented. Plans are underway to make a similar funding commitment for FY16.

Policy Issues

There are no policy issues associated with this report.

Commissioner's Recommendation

This is an information item only. No action is needed.

David L. Buhler
Commissioner of Higher Education

DLB/BKC
Attachment

2013 – 2014 UCAP Projects Highlights & Outcomes



Fiscal Year 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 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 six existing programs and support three 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 two to one, with four Motoman robots- this allows BATC to train eith students at a time
- BATC is also a Fanuc Certified training facility with four 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 were 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 of 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 \$250,000 (\$351,610 leveraged)

Project Title: Injection Molding Program Development

- Enrollment for this program began December 15, 2014, and classes began 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, five days per 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 \$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 +
- Thirteen adult students enrolled with 6 adults that have completed national certifications
- Fourteen high school 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

- One hundred 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 \$200,000 (\$493,209 leveraged)

Project Title: Advanced Machining Program

- Four students completed the machine tool program in May and began the CNC machining program in August
- Both the Machine Tool Technology and CNC Machining 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 \$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
- Seven projects (three faculty members and four students) 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 University of Utah (U of U), Ph.D. candidate Leila Ghadbeigi was selected for her proposal 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 U of U 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 \$200,000 (\$212,715 leveraged)

Project Title: Nondestructive 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 \$102,500 (\$15,000 leveraged)

Project Title: Virtual Industrial Park

- Over 500 Utah companies are now registered to use the project's newly developed searchable data-base of Utah manufacturers, known as the 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

- Program is anticipated to begin 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 \$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 \$18,000 (\$9,555 leveraged)

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

- With support from Utah Cluster Acceleration Program, Weber State University, 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 – 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 (ET) 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