Letter from President Holland

Dear Associates,

Nearly two years ago, we launched a Business Engagement Strategy born out of discussions with local business, community, and educational leaders. This strategy is a key part of UVU’s overall goal “to develop a well-trained workforce and other factors critical to regional prosperity by working closely with the surrounding business community and local-level leaders.” One component of the Business Engagement Strategy (BES) is the creation of Career Pathways that will provide students with an early orientation of job and career opportunities and a map that helps them navigate well-defined pathways from high school through higher education to employment, particularly in the vibrant economic sectors of the Mountainland region. To that end, I established the BES Career Pathways Taskforce and charged them with initiating these activities. Today I am pleased to present their work and findings in this report.

Much has been said of the critical goal of higher education in Utah to move from 39% of adults with some form of college completion to 66%, in order to meet workforce demands and foster a high quality of life and strong economy. This goal is not just about numbers of degrees. It is about aligning education to meet current and future workforce needs, increasing the level of economic innovation in our region and state through active and successful partnerships among business, industry, education and community leaders, and leveraging our collective resources and talents to address serious challenges and achieve the true greatness of our community. For any seeking to accomplish such goals, I encourage serious consideration of the processes, conclusions and recommendations found in the report presented here by our BES Career Pathways Taskforce.

Sincerely,

President Matthew S. Holland
January 2013
December 19, 2012

To Whom It May Concern:

Many groups have produced reports evaluating the status and skill readiness of the American workforce. These have increased our awareness of the issue and raised concerns whether the Utah workforce will have the skills needed to be competitive in the global economy.

A few short years ago, to help address such concerns, Utah Valley University President Matthew Holland assembled leaders from the university and community to form a collaborative plan for strategic business engagement. The Business Engagement Strategy for Career Pathways is a partnership outcome of that effort. The strategy recognizes that a well-trained workforce characterizes a strong economy.

The Utah Department of Workforce Services supports moving that strategy into action. We are committed to join other private and public partners in aligning the needs of the workforce and economic development with education to meet the goals of a well-trained workforce for 2020.

Please join us in supporting these pioneering efforts. Not only can this initiative support positive strategic economic change for our Mountainland Economic Service Area, but it can also service as a model and catalyst for economic growth statewide.

Sincerely,

Jon S. Pierpont
Executive Director
UVU BUSINESS ENGAGEMENT STRATEGY
CAREER PATHWAYS REPORT

EXECUTIVE SUMMARY

The Business Engagement Strategy (BES) Career Pathways Taskforce, under the direction of Susan Thackeray, was charged by President Holland to establish a short-term, high-level stakeholder team to initiate strategic engagement that will result in smoother transitions for students from high school to postsecondary education and into a career. With recommendations from the K-16 Alliance, President Holland invited team members who participated in four two-hour discussions from January 2012 to May 2012. Gary Wixom of the Utah System of Higher Education served as the facilitator. The group followed the Significant Discussions model developed by the College and Career Transitions Initiative (CCTI) to assist diverse stakeholder groups to engage in discussions that build and reinforce partnerships.

The high-level stakeholder team included content experts, administrators, business partners and counselors from secondary and postsecondary education. The stakeholder team was charged to accomplish the following:

- Identify goals and partners’ potential contributions.
- Identify gaps, issues and challenges of developing pathways.
- Make recommendations to close those gaps.
- Assess the level of alignment between industry and education.
- Prioritize future pathways.
- Build on the strength of the K-16 Alliance, by reporting progress to the alliance, addressing the need to reduce the number of students who need remedial math at the college level, and increasing communication with K-12 counselors.

With respect to the Digital Media Pathway, the stakeholder group was charged to:

- Assist with UVU’s charge to serve as the lead institution in convening a statewide strategy for accelerating the expansion of Utah’s Digital Media Cluster.
- Use the development of the Digital Media Pathway as a pilot for developing a process whereby other pathways can be developed in the future.
- Review the Digital Media Pathway and make recommendations.

The ground-level UCAP Digital Media Pathway Partnership included secondary education CTE directors, USOE specialists, DWS coordinators, the State Perkins Pathway Coordinator, students, and UVU Digital Media administrators and faculty. The partnership was charged to:

- Establish a state-wide pathway in Digital Media.
- Utilize the Rigorous Programs of Study framework.
- Document the process by which the pathway is established.

As charged by the Utah Cluster Acceleration Partnership (UCAP), the ground-level partnership established a Digital Media Career Pathway that identifies and implements a Rigorous Program of Study using the national 10 element framework. The pathway will allow students across the state of Utah to transition seamlessly from secondary through postsecondary education ready to enter the workforce in eight fields within the Digital Media Cluster. The pathway links
secondary and postsecondary education course sequences and aligns postsecondary courses and degrees. Although secondary digital media courses are not available equally across the Utah school districts, a digital media core has been developed and is available if high schools are able to provide the courses. A number of the required courses will be available for college credit through concurrent enrollment.

**Conclusions & Recommendations of the BES Career Pathways Stakeholder Team**

1. Discussions among key stakeholders should be conducted regularly to review the progress of strategies for improvement and to consider all reforms necessary to reduce dropout rates.

2. Targeted programs of study that meet labor market demands need to be systematically developed and monitored.

3. The taskforce recommends an increased effort to utilize parent association forums and events to share the message of pathways.

4. The BES taskforce recommends that these and other similar current strategies be continued and strengthened:
   - A strong K-16 Alliance that supports an initiative for math remediation.
   - Department-specific requirements for targeted degree relevance.
   - USHE-sponsored Technology Intensive Concurrent Enrollment (TICE) courses and high school placement assessments that are currently under development.
   - Career fairs such as UVU Days, Empowering Your Tomorrow and Expanding Your Horizons that assist young men and women in selecting careers and provide information regarding industry training requirements.

5. The educational partners should move toward co-registration aligned content and assign high performing teachers to entry-level courses. Strategies for alignment include the increase of pathway-focused concurrent enrollment opportunities.

6. Online publication of placement data and required skill sets will support the efforts of bringing employers and graduates together and efficiently improve the students’ ability to make appropriate career choices.

7. Educational reforms at both the secondary and postsecondary levels are required to ensure completion. It is up to the school authorities to prepare and support students by clearly declaring needed courses and by providing proactive scheduling so that students can succeed in a timely manner.

8. Strategies for early student career exploration should include the best practice of increased advising.

9. UVU should formally develop career pathways following the 10 elements identified in the “Rigorous Programs of Study” section of this report and using the USHE Career Pathway Development Guide. Although a well-defined career pathway is recommended for all programs of study, priority should be given to the following: 1) Computer Science; 2) Software Engineering; 3) Computer Engineering; 4) Healthcare Professions; 5) Education; 6) Hospitality; and 7) Business Management.
# TABLE OF CONTENTS

## INTRODUCTION
- Overview
- National and State Workforce Issues
- The Educational Challenge
- Utah Higher Education Plan 2020
- Utah Cluster Acceleration Partnership
- Business Engagement Strategy at UVU

## PART ONE. CAREER PATHWAYS
- Career Clusters and Career Pathways
- Rigorous Programs of Study
- Pathway Development
- Collaborative Partnerships for Curriculum Alignment

## PART TWO. BUSINESS ENGAGEMENT STRATEGY – CAREER PATHWAYS TASKFORCE APPROACH
- Informative Model for Collaborative Partnerships
- Significant Discussions Guide: Overview of Recommended Process
- UVU’s Adaptation of the Significant Discussions Model

## PART THREE. DEVELOPMENT OF THE DIGITAL MEDIA PATHWAY
- Digital Media: A Pilot Utah Cluster Acceleration
- Process of the Digital Media Partnership

## PART FOUR. BUSINESS ENGAGEMENT STRATEGY – CAREER PATHWAYS TASKFORCE IMPLEMENTATION
- High-Level Stakeholders Partnership: A Process Summary
- Session 1. Taskforce Outcome Goals
- Session 2. Gap Analysis
- Session 3. Assessment Strategies
- Session 4. Closing the Gaps
PART FIVE. CONCLUSIONS AND RECOMMENDATIONS

Conclusions 38
Recommendations 39

APPENDICES

Appendix A. Questions Addressed by the Stakeholder Team 42
Appendix B. Worksheet Questions 43
Appendix C. Digital Media Pathway 44
Appendix D. Participants in the BES Career Pathways Stakeholder Team 51
INTRODUCTION

The connection between education and economic development has been well established. A well-focused educational foundation serves national and state interests and is the key for individual economic security. Over the last few years, numerous national studies make it very clear that a college degree is the key to economic opportunity, providing higher earnings for those with postsecondary credentials. It follows that the higher the earning potential for the citizens of the state, the more stable the infrastructure of the state becomes, with lower unemployment rates and increases to the tax base.

OVERVIEW

Government and education leaders in the state of Utah have determined that the alignment of educational resources for economic development is critical to the future sustainability of a viable workforce.

- **Governor’s Call** – The global economy is competitive and requires a well-educated workforce. The state of Utah depends on the state educational systems to efficiently prepare a viable workforce. In 2009, Governor Gary R. Herbert called upon the institutions of higher education to meet the needs of students and talent demands of employers in the 21st century. ¹

- **Commissioner’s Call** – To meet Utah’s projected education and workforce needs, the Commissioner of Higher Education and the State Board of Regents have set a “big goal” for Utah: to have 66% of Utahns—men and women age 25 to 64—with a postsecondary degree or certificate by the year 2020. Commissioner William Sederburg and his staff identified three strategic priorities for accomplishing this goal in the *Utah HigherEd2020* report: ²
  1) Increase the rate of student participation in higher education.
  2) Increase the rate of student completion.
  3) Increase the level of economic innovation to strengthen the knowledge-based economy and align education to meet future talent-force needs.

The report’s Action Plan includes five focus areas, one of which is to “Better leverage higher education in growing Utah’s economy as a way to extend prosperity and grow the tax base of the state.”

¹ The Future of Higher Education in Utah Strategic Issues for 2015 and Beyond, Strategic Goal #1, March 2009.
• **UVU President’s Call** – In January 2010, under the direction of Utah Valley University President Matthew S. Holland, a reputable group of selected stakeholders finalized seven strategic Business Engagement Strategy recommendations for UVU to best align regional resources for economic and business development. One of the recommendations was to develop a Career Pathways initiative. This was identified as an opportunity to engage partnerships for more purposeful learner transitions across systems of education (K-16) and on to meaningful employment.

The effort to develop viable Career Pathways will require a strong collaborative process that engages the various stakeholders of the region, in this case, the Mountainland region of Utah. Stakeholders must identify and close the gaps for transition to postsecondary education and into careers. They must determine assessment outcomes that will allow for benchmarks to encourage analysis for ongoing, iterative review. This process is not easy. It has not been done well or consistently in this region before or in most economic regions across the country. The development of a replicable collaborative process whereby UVU can leverage the strength of the Mountainland K-16 Alliance initiatives to maximize the potential for economic sustainability and longevity is the focus of this report.

**NATIONAL AND STATE WORKFORCE ISSUES**

The job landscape is changing. In 1947, when only about half of Americans graduated from high school, it was possible to build a career without a high school diploma. Today, that is rarely possible. In 1973, 73% of all jobs were available for high school graduates or less. Today, in a global market place, that is no longer the case. The Georgetown Center for Workforce Education released a study in 2010 detailing the impact of the Great Recession on education and the workforce, indicating that the recession shifted the qualifications for entering the workforce to jobs requiring some form of postsecondary education. The report projects that by 2018, 66% of
all jobs in Utah will require a postsecondary degree or certification. Only about 34% of jobs will be available for high school graduates or less, and 1/3 of these jobs will not provide a livable wage. Higher education is and will be a factor in employment stability. Overall, there tends to be more turnover in jobs requiring less education. In tough economic times, men and women with higher levels of education are less likely to be laid off and unemployed. Utah’s unemployment statistics over the past few years bear this out. In December 2009, when Utah’s unemployment rate had reached 7.8%, the unemployment rate was only 4.7% among those with a bachelor’s degree or higher, but 10.0% for those with only a high school diploma (see Figure 1). In the first quarter of 2012, with the unemployment rate at around 6%, rates are similar for the different education levels. Moreover, experts predict that in the coming decade, many U.S. citizens will face unemployment because they lack the skills to enter the workforce.

Education level is clearly correlated with income level. In Utah, where wages are typically lower than many parts of the nation, the median wage for those with a high school diploma is $26,365 while the median wage for those with a bachelor’s degree is around $41,273 (see Figure 2). However, according to the Lumina Foundation for Higher Education, the gaps in income between those who have some postsecondary education and who do not will grow steadily wider. The Georgetown Center report also emphasizes this point: “As the economy gets back on track over the next five years, 60 million Americans are at risk of being locked out of the middle class, toiling in predominantly low-wage jobs that require high school diplomas or less.” Furthermore, not every type of credential beyond high school produces a sufficient income to sustain a family. For instance, the typical hourly wage in Utah for

---


4. Utah Department of Workforce Services (Chart by USHE, Office of Institutional Research and Analysis).


personal care services (for example, fitness trainers or hair dressers) is about $9.92 per hour, and the typical wage for office and administrative support (including customer service representatives and medical secretaries) is about $12.04. Yet the livable wage for a family with two adults and two children is about $25.66 per hour. For a family with one adult and one child, the livable wage is about $15.26. 8 This information points to the need to align degree and certificate programs with jobs that can produce a sustainable wage, including those in the Utah Clusters initiative.

According to the Georgetown Center report and other nationally credible sources, workers in the future will tend to be more attached to the occupations they will be filling than to the specialized industries in which they work. “People do not go work in industries any more. They get educated or trained, go to work in occupations, and progress in an occupational hierarchy.” While some occupations are tied tightly to particular industries, more and more occupations are dispersed broadly across industries. Education and training, then, need to offer opportunities for breadth of skills and knowledge, and to be designed for horizontal movement as well as vertical advancement within an occupational cluster – that is, education with multiple pathways that are both stackable and lateral – allowing both individuals and the workforce to be flexible and adaptive to industry and marketplace changes.

**THE EDUCATIONAL CHALLENGE**

All indications are that the U.S. education system is not preparing enough individuals to be ready and able to enter a workforce that requires global marketplace skills. The Georgetown Center report presents clear data indicating that our current postsecondary system will not be able to meet the demand for workers as we approach 2018. Reports

---

8 USHE, Office of Institutional Research and Analysis, with data from the Utah Department of Workforce Services (see HigherEdUtah2020, 2010 Report, pp. 48-49).

by the Lumina Foundation for Education, the Bill and Melinda Gates Foundation, the White House and others concur.9 The U.S. is falling behind other nations in its ability to educate its people and produce a viable workforce for the 21st century global economy. The 2010 report from the College Board indicates the U.S., which once led the world in college degrees for people ages 25-34, now ranks 12th among 36 developed nations.10 In response to the report, President Obama indicated that the lag in the number of college graduates imperils U.S. economic competitiveness, and Education Secretary Arne Duncan said, “We’re flat-lined while other countries have passed us by. The country that out-educates us today will out-compete us tomorrow.” 11

A specific challenge faced by public education is that high schools need to get more young people prepared for college and career. The HigherEdUtah2020 report of 2010 points to a number of indications that we must do better at preparing students for college, including the high number of students requiring remediation in college (about 50% at some institutions), the low number of students who meet ACT benchmark scores in all four subject areas (26% statewide), and the low number of 19-year-olds (36%) who enroll directly in college out of high school. Instead of tracking select students for postsecondary education, all students should be preparing for education beyond high school, whether it is with colleges and universities or with vocational and applied technology colleges.12 Everyone needs some form of postsecondary degree. This will require better academic preparation, more career advising and increased parental understanding and involvement.

Another specific challenge is that of establishing clearer connections between secondary education, postsecondary education and employment. It is evident to many that the misalignment of curriculum among secondary schools, community colleges, universities and employers creates barriers to student success. In a recent survey by the National Association of Manufacturers, 84% of the respondents believe that students are not being prepared with basic academic and employability skills, which leaves us a shortage of skilled workers and a generation with low earning potential. 13

“We set out to provide a detailed forecast of jobs and their education requirements for two reasons: “First: The ability of individuals to connect education, training, and careers has become key to employability and to attaining and maintaining middle class status. “Second: In spite of its growing importance, our ability to match education alternatives with career options is woefully underdeveloped.” Georgetown University Center on Education and the Workforce, Help Wanted: Projections of Jobs and Education Requirements through 2018, p. 1.
A recent Harvard report, *Pathways to Prosperity*, emphasizes that students need to prepare for the careers of the future, that students need multiple pathways early in their education experience, and that every high school student needs a clear pathway to postsecondary training. These career pathways lead students through sub-groupings of occupations/career specialties and can effectively be used as an organizing tool for curriculum design and instruction.14

**UTAH HIGHER EDUCATION PLAN 2020**

In 2010, the Utah System of Higher Education established the “big goal” of having 66% of Utahns, men and women ages 25-64, with a certificate or an associate degree by the year 2020. This goal has been adopted and endorsed by the Governor and various government commissions and taskforces. In examining current data, the current level of educational attainment here in Utah is not sufficient to meet this goal. According to the 2010 Census, only 43% of Utah’s adult population has this level of postsecondary credential.15 Figure 3 shows the current level of educational attainment by degree compared to Utah’s goals for higher educational attainment by the year 2020.


14 “Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century.”

The Utah Commissioner of Higher Education emphasizes that achieving the goal will require effort at all levels of postsecondary education including the private sector. For its part, Utah Valley University is strategically focusing efforts on increasing student completion of degrees and certificates for a broader base of students, and on aligning education to meet future talent-force needs. UVU’s Business Engagement Strategy is a key initiative in accomplishing these objectives. The development of defined Career Pathways that utilize Rigorous Programs of Study, an educational framework now being implemented in Utah with federal grant funds, is a major part of that overall strategy and the focus of this report.

**UTAH CLUSTER ACCELERATION PARTNERSHIP**

The Board of Regents, in 2009, set priorities to guide their efforts in improving education in the state of Utah. One of those top priorities was economic development. Working with colleges and universities, the Commissioner’s office established the Utah Cluster Acceleration Partnership (UCAP) “to accelerate key industry clusters as engines of job creation and economic growth.” UCAP’s central aim is to assist institutions in enhancing the economic development in their service delivery areas and across the state. In partnership with the Department of Workforce Services (DWS) and the Governor’s Office of Economic Development (GOED), plans were finalized to guide the UCAP Table 1 describes UCAP’s objectives.

---

16 Ibid.
Table 1: UCAP (Utah Cluster Acceleration Partnership) Objectives

- Effectively position higher education institutions as regional stewards directly contributing to the long-term economic growth of their respective regions.
- Effectively leverage the leadership and resources of higher education to address state and regional needs that will accelerate the growth of the region’s economy.
- Establish partnerships between academic leaders and the leaders from industry, government, and the community at large.
- Define cross-organizational strategies directed at accelerating change and ensuring the long-term economic vitality of the region.
- Capitalize on higher education institutions as hubs for economic development, the source for trained workforce and idea centers of advanced and applied research.
- Provide students with an expanded learning experience that includes working directly with business partners.
- Confirm each institution’s unique capacity to lead and convene acceleration initiatives in specific economic clusters.
- Ultimately alter the culture of higher education, orienting it more to its role as an economic stimulator for growth and business acceleration.

In 2009, UCAP initiated three pilot cluster acceleration projects – Aerospace & Defense, convened by Weber State University; Energy, convened by Salt Lake Community College; and Digital Media, convened by Utah Valley University. (These clusters align with Utah’s Economic Cluster Initiative as defined by GOED.)

In November 2011, the leadership of UVU’s Digital Media Cluster Acceleration Project directed the formation of a Digital Media Pathways Partnership to create a career pathway in Digital Media for the Mountainland region. The work of this partnership began in January 2012 and is summarized in Part four of this report.

BUSINESS ENGAGEMENT STRATEGY AT UVU

In January 2010, Utah Valley University finalized a new Business Engagement Strategy, which was designed to serve as a guide for the University’s interface and engagement with the business community in its service delivery area. Seven strategies were identified with the goal of focusing the resources of the University in supporting the expansion of the regional business base and assisting with the development of the local and regional economy:

• Technology Commercialization – UVU to work directly with BYU to formulate a joint strategy and process for commercialization of technology.
• Educational Rigor – Seek to influence increasing the rigor of public education (K-12) in the areas of math, science, and English. Continue the commitment to steadily raise educational standards and student achievements.
• Community Business Leaders Group – Establish an ongoing advisory and leadership group of engaged business leaders. The group will provide UVU with critical input.
• Key legislative issues, university initiatives and program offerings. The group will also interface with state leaders and seek to influence broader community and regional issues.
• Cluster Acceleration – UVU to serve as a lead institution in convening a statewide strategy for accelerating the expansion of the regional business base and assisting with the development of the local and regional economy.

Utah Valley University, Business Engagement Strategy, Spring 2010.

WHAT ARE ECONOMIC CLUSTERS?
Economic clusters are groups of related businesses and organizations within industry sectors whose collective excellence and collaboration provide a sustainable competitive advantage.
– Utah governor’s office of economic development
of Utah’s Digital Media Cluster. Conduct an analysis of the region’s assets and map potential economic clusters that can be targeted for specific acceleration initiatives.

- **Career Pathways** – Provide students with an early orientation of the career and job opportunities that will directly result from their chosen study and curriculum. Help students “up front” match their studies with specific career opportunities. Emphasize identifying regional career and job opportunities.

- **Focus on China** – Establish at UVU, with the support of state and national leaders, a premier China Studies Expertise emphasizing Chinese language, culture and business trade.

- **Entrepreneurial Initiatives** – Leverage UVU’s contribution in entrepreneurial studies, business students and professor interest to support technology commercialization and regional business creation.

The UVU Business Engagement Strategy has identified UCAP as an area of strategic focus. UVU was appointed by UCAP in 2010 to be the convening institution to develop a statewide strategy for accelerating the expansion of Utah’s Digital Media Cluster through the Utah Cluster Acceleration Partnership (UCAP). A key component of both the BES and UCAP initiatives is the development of a process for establishing career pathways for students.

Career Pathways is an area identified by the BES as an opportunity to engage partnerships for more purposeful learner transitions across systems of education and on to meaningful employment. Recommendations under this strategy specific to this report include defining curriculum career paths (appropriate curriculum and educational tracks that match career opportunities) and preparing students with relevant job skills (including preparing students to be flexible and adaptable to the new and changing economy).

To move both the UCAP—Digital Media and the Business Engagement Strategy—Career Pathways initiatives forward, high-level solutions and proposed implementation plans are needed. These are the subject of this report.

---

19 Business Engagement Strategy: Career Pathways, A collaborative process to align educational resources for economic development, Spring, 2010.

---

The Carnegie Foundation for the Advancement of Teaching has designated UVU as a Community Engagement Institution for both Curricular Engagement and Outreach and Partnerships.

This classification indicates the institution is committed to collaboration with its “larger community for the mutually beneficial exchange of knowledge.” and resources in the context of partnership and reciprocity.”
CAREER CLUSTERS AND CAREER PATHWAYS

The development of career pathways has become a national emphasis in various educational reform initiatives. These educational reform initiatives seem to agree that all youth need to graduate from high school ready for further education or entry into the demanding 21st century workforce. Providing students with clear sequences of study within identifiable clusters of occupational areas assists them in reaching this goal.

The career cluster framework provides a sequential path for students to take a career interest and develop it into job potential. There are 16 broad career clusters broken down into multiple pathways. Within these pathways are programs of study defined by a local educational partnership. An Individualized Learning Plan (ILP) can then be developed for each student that formulates a personalized academic plan reflecting a student’s unique set of interests, needs, learning goals and graduation requirements. Figure 4 shows how all these pieces fit together.

CAREER CLUSTERS

The National Association of State Directors of Career and Technical Education has led the way in defining Career Clusters and Pathways. The National Career Clusters Framework is organized around 16 Career Clusters that help students better understand their career options. Within each of these 16 occupational clusters, career pathways can be developed giving students choices in sequencing their educational experiences. The framework encompasses both secondary and postsecondary elements.

The 16 Career Clusters can be used as an effective curriculum organizing tool. Each Career Cluster corresponds to a grouping of occupations and industries that have similar requirements in the knowledge and skills necessary for success.  

EXAMPLE

Career Cluster – Manufacturing
Career Pathway – Maintenance, Installation, and Repair
Program of Study – Mechatronics
Individual Learning Plan – A plan for coursework related artifacts, and experience from 8th grade through 14 and beyond

Figure 4: Career Clusters Framework

The design of Figure 4 is from ‘A Guide for Implementing Programs of Study in Wisconsin, based upon the National Career Cluster & Pathway Framework,” Wisconsin Technical College System, July 2011, page 4.

Table 2: The 16 Career Clusters

- Agriculture, Food and Natural Resources
- Architecture and Construction
- Arts, Audio/Video Technology and Communications
- Business Management and Administration
- Education and Training
- Finance
- Government and Public Administration
- Health Science
- Hospitality and Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections and Security
- Manufacturing
- Marketing
- Science Technology, Engineering and Mathematics
- Transportation, Distribution and Logistics

CAREER PATHWAYS

Across the country there are a number of definitions for the term career pathways, but there seems to be a consistent theme indicating that the term refers to a sequence of connected education and training opportunities that assist the student to obtain industry recognized credentials, employment within an occupational area with the ability to advance with further education or employment. In this report, we define a career pathway as a well-designed program of study within a career cluster (see Figure 5).

A well-designed career pathway will provide students with a program of study that links secondary and postsecondary sequences together. The program of study will have both academic and career and technical courses in a structured sequence, providing the student with the knowledge and skills identified as essential in that cluster and pathway. The program of study will provide opportunities for students to earn college credit through concurrent enrollment or articulation agreements. A well-planned pathway will have multiple entry points for those with varying degrees of education and training; it will also have multiple exit points for job placement at varying levels within a career cluster.  

Although it is still too early to have definitive longitudinal studies completed on the benefits of career pathways, the early indications are very positive. Early results indicate that students who participate in formal programs of study within well-defined pathways take more Career and Technical Education (CTE) courses in the pathway and have significantly higher CTE GPAs. Pathway students tend to do better in their higher-level math courses than students who have not been in the pathway. Pathway students are more likely than non-pathway students to have researched potential jobs and careers. As longitudinal data becomes available, it is expected that these positive trends will continue as students are tracked through their postsecondary experiences.

---

22 Rigorous Tests of Student Outcomes in CTE Programs of Study: Year 3 Report. National Research Center for Career and Technical Education, University of Louisville, Louisville, KY.
RIGOROUS PROGRAMS OF STUDY

A program of study is a sequence of instruction based on recommended standards and knowledge and skills, consisting of coursework, co-curricular activities, worksite learning, service learning and other learning experiences. A national effort is underway to develop programs of study that deliver rigorous and relevant curriculum to prepare students for success in the 21st century.

In 2011, six states, including Utah, were awarded grants from the U.S. Department of Education’s Office of Vocational and Adult Education (OVAE) to pilot test the development of a Rigorous Program of Study. Utah’s project is designed to enhance career and technical education offerings in health care and develop a data set that can be shared nationally to inform the characteristics of quality CTE programs.

In designing programs of study, OVAE has developed 10 framework elements that support the development of an effective educational sequence.23 (see Table 3).

---

23 Association for Career and Technical Education. Techniques; Connecting Education and Careers, January 2012.
Table 3: Rigorous Program of Study – 10 Framework Elements

- **Legislation and Policies** - Federal, state and local legislation or administrative policies promote POS development and implementation.
- **Partnerships** - Ongoing relationships among education, business and other community stakeholders are central to POS design, implementation and maintenance.
- **Professional Development** - Sustained, intensive and focused opportunities for administrators, teachers and faculty foster POS design, implementation and maintenance.
- **Accountability and Evaluation Systems** - Systems and strategies to gather quantitative and qualitative data on both POS components and student outcomes are crucial for ongoing efforts to develop and implement POS.
- **College and career readiness standards** - Content standards that define what students are expected to know and be able to do to enter and advance in college and/or their careers comprise the foundation of a POS.
- **Course Sequences** - Non-duplicative sequences of secondary and postsecondary courses within a POS ensure that students transition to postsecondary education without duplicating classes or requiring remedial coursework.
- **Credit Transfer Agreements** - Credit transfer agreements provide opportunities for secondary students to be awarded transcripted postsecondary credit, supported with formal agreements among secondary and postsecondary education systems.
- **Guidance Counseling and Academic Advisement** - Guidance counseling and academic advisement help students to make informed decisions about which POS to pursue.
- **Teaching and Learning Strategies** - Innovative and creative instructional approaches enable teachers to integrate academic and technical instruction and allow students to apply academic and technical learning in their POS coursework.
- **Technical Skills Assessments** - National, state and/or local assessments provide ongoing information on the extent to which students are attaining the necessary knowledge and skills for entry into and advancement in postsecondary education and careers in their chosen POS.

**PATHWAY DEVELOPMENT**

Developing a well-defined career pathway for an education program and sequence between secondary and postsecondary educational programs is a groundbreaking yet evolving process being carried out across the country. Several approaches are being carefully studied, but all seem to have some common elements. The Utah System of Higher Education has developed the following model, based on the National Clusters.
Framework for the development of a relevant career pathway. (Each step is described in more detail in the USHE Career Pathway Development Guide.)

1. Analyze the cluster and pathway components in the context of identified national competencies and foundation skill requirements for the pathway and cluster, based on local and regional business and industry needs.
2. Identify key personnel that will facilitate a collaborative process between secondary and postsecondary educators and business and industry contacts. The development team should ensure that all partners are fully engaged in the development of the pathway.
3. Analyze the curriculum, including the course competencies and course sequences at the secondary and postsecondary level, and the available certificates and degrees compared with the local labor market and level of demand.
4. Identify curriculum gaps utilizing the appropriate business and industry advisory committees.
5. Apply the 10 Framework Elements necessary for the development of a Rigorous Program of Study (see Table 3).
6. Connect the pathway to occupations and job openings, working with the Department of Workforce Services regional staff.
7. Implement the pathway by engaging students in the programs of study and by tracking and assessing their progress.
8. Convene student focus groups to determine if student needs are being met.
9. Evaluate the pathway using both ongoing formative and annual summative evaluation components. Continue the evaluation process though job placement.
10. Refine the pathway and make changes as appropriate. Stay current with business and industry needs and changes in the labor market.

**COLLABORATIVE PARTNERSHIPS FOR CURRICULUM ALIGNMENT**

A major national project, the College and Career Transitions Initiative (CCTI), demonstrated how significant discussions among strong collaborative partnerships can help to smooth student transitions and help more learners achieve their education and career goals. Participating colleges found that discussions among schools, colleges and business partners can help improve these conditions and align standards for high school graduation, college admission and enrollment in credit-bearing courses.

CCTI demonstrated how collaborative partnerships positively influenced curriculum alignment, a necessary component of successful career pathways, and helped to smooth student transitions. Fifteen community college partnerships in five occupational clusters worked to develop career pathways that would help to achieve the following five outcomes:

- Decrease the need for remediation at the postsecondary level.
- Increase enrollment and persistence in postsecondary education.
- Increase academic and skill achievement at secondary and postsecondary levels.
- Increase attainment of postsecondary degrees, certificates or other recognized credentials.
- Increase entry into employment or further education.

PART TWO: BUSINESS ENGAGEMENT STRATEGY—CAREER PATHWAYS
TASKFORCE APPROACH

INFORMATIVE MODEL FOR COLLABORATIVE PARTNERSHIPS

The UVU Business Engagement Strategy (BES)—Career Pathways Taskforce utilized, with some modification, the Significant Discussions: A Guide for Secondary and Postsecondary Curriculum Alignment, developed to assist diverse stakeholder groups to engage in important discussions that build and reinforce partnerships. The Significant Discussions guide was the result of a multi-year project (2002-2008) known as the College and Career Transitions Initiative (CCTI). The project was funded by the United States Department of Education Office of Vocational and Adult Education and administered by the League for Innovation in the Community College.

The Significant Discussions guide describes collaborative partnerships of strategic engagement that will result in smoother transitions for students from high school to postsecondary education and into a career. The guide encourages the “4Cs” of collaboration, communication, counseling and curriculum alignment to support successful student transitions (see Table 4).

Table 4: The 4 Cs of Partnerships that Positively Influence Curriculum Alignment

- **Collaboration** - collaboration among partners and across the education, business and government sectors needs to be supported by strong leadership.
- **Communication** - Communication among all the partners, faculty, counselors and supporting staff is critical to ensure that collaboration is effective and long term.
- **Counseling** - Counseling functions provide information to ensure that students know what academic skills are needed to transition effectively and how to acquire those skills.
- **Curriculum Alignment** - Curriculum alignment creates seamless pathways necessary for student success across educational levels to students’ future careers.

The BES Career Pathways Taskforce, serving the Mountainland region of Utah, plans to develop Career Pathways using the Significant Discussions model to deliver immediate and long-term outcomes for a noteworthy regional impact. According to this model, high-level partnership discussions must take place to identify the gaps between current conditions and future desired outcomes for a replicable process.

**Significant Discussions Guide: Overview of Recommended Process**

The Significant Discussions guide details a five-phase plan in the process leading to systemic solutions that can improve student transitions to college and career success. The plan is outlined below.

**A. Getting Started**
1. Get the right people around the table.*
2. Understand the issues and challenges.
3. Develop trusting relationships.
4. Identify goals.

**B. Gap Analysis**
1. Select a skilled facilitator.
2. Identify the essential knowledge, skills and common core standards for review.
3. Determine where and when the knowledge, skills or core standards are delivered.
4. Determine the degree or depth of learning.
5. Identify the gaps.

**C. Curriculum Alignment**
1. Identify the points in the curriculum to introduce or reinforce knowledge, skills or core standards.
2. Identify the resources necessary to integrate the knowledge, skills or core standards into the sequence of instruction.
3. Determine effective strategies to assess student acquisition of knowledge, skills or core standards.
4. Review regularly for continuous improvement.

**D. Assessment (of Curriculum Alignment)**
1. Determine the most effective strategies to validate curriculum alignment.
2. Design an assessment process that will deliver results.
3. Analyze the results of the assessment.

**E. Next Steps**
1. What the system can do.
2. What institutions can do.
3. What individual stakeholders can do.

* The Significant Discussions guide recommended that the stakeholder team will include: four content experts (two secondary / two postsecondary education); two administrators (one secondary / one postsecondary education); two counselors (one secondary / one postsecondary education); and two to three business partners for approximately 10-12 members. Some discussions may include representatives from additional stakeholder groups.
UVU’s Adaptation of the Significant Discussions Model

In fall 2011, President Matthew S. Holland appointed Susan Thackeray, director of Career and Technical Education at UVU, as the project lead for UVU’s Business Engagement Strategy—Career Pathways Taskforce. She recommended to the president the following high-level approach (adapted from the Significant Discussions model) to initiate a pathways partnership in the Mountainland region.

1. Assemble a high-level panel stakeholder partnership to address the larger concerns of Career and Technical Education and career pathways in the Mountainland region (Steps A, B & E in the process). The work of the high-level team is the focus of this report, particularly in Part four and the appendices.

2. Utilize the ground-level Digital Media Pathway partnership to address the creation of a specific pathway (Steps B, C, D & E in the process). The processes of the ground-level team are summarized in Part three, but the reader is referred to the Utah Cluster Acceleration Partnership – Digital Media Educational Pathway Report for the complete discussion.

Figure 6: Implementation of the BES Career Pathways Taskforce
PART THREE: DEVELOPMENT OF THE DIGITAL MEDIA PATHWAY

DIGITAL MEDIA—A PILOT UTAH CLUSTER ACCELERATION

The Utah Cluster Acceleration Partnership (UCAP) established three pilot projects in 2009. Each project was convened with a college or university as the lead institution. Utah Valley University was designated to lead the Digital Media Cluster. As a part of the project team’s overall strategy, five supporting strategies were identified:

1. Talent Development
2. Business Expansion
3. Business Attraction
4. Business Creation
5. Cluster Leadership

As a part of the Talent Development Supporting Strategy, a UVU goal was established to provide an “industry-driven education curriculum,” including a well-defined career pathway for students planning to pursue educational training in the digital media industry. The following narrative describes the process that was followed in the development of the Digital Media Career Pathway.

Objective: To identify and implement a Rigorous Program of Study in the Digital Media Pathway, using the national 10 framework elements, that will allow students across the state of Utah to seamlessly transition from secondary to postsecondary education and be ready to enter the workforce in fields within the Digital Media Cluster.

Task: Create a well-defined career pathway that has the following characteristics:
1. Articulates secondary and postsecondary education course sequences.
2. Combines academic and career and technical education in a structured sequence of courses.

---

26 Note: The Governor’s Office of Economic Development has designated Digital Media as an economic cluster (see page 16); in CTE terminology, however, Digital Media is a career pathway that overlaps the Arts, Audio/Video Technology & Communications and the Information Technology clusters (see pages 17-18).

27 Accelerating Utah’s Digital Media, Utah Cluster Acceleration Partnership Executive Summary, Fall 2011.

28 Ibid.
3. Offers students the opportunity to earn postsecondary credits for courses taken in high school (concurrent enrollment).
4. Leads to a postsecondary credential, certificate or degree.

MEMBERS OF THE DIGITAL MEDIA PARTNERSHIP

Pathway development that spans secondary and postsecondary programs of study and prepares individuals to accept employment positions within industry clusters of a specific region requires input and collaboration from many stakeholders. The process of developing the Digital Media Pathway in the Mountainland region of Utah involved the following key individuals.

• UVU CTE Director, Susan Thackeray
• Associate Dean of UVU College of Engineering and Technology, Abraham Teng
• Digital Media Department Chair, Jan Bentley
• UVU Digital Media faculty
• Business and Industry Advisory Committee (to the Digital Media Department at UVU)
• Secondary specialists for Digital Media Pathway and Clusters at the Utah State Office of Education
• Secondary CTE directors from the local school districts in the UVU service delivery area
• Department of Workforce Services regional economic development coordinators
• Perkins Pathway Coordinator assigned to the region

• High school and college students
• Facilitator, Gary Wixom, Assistant Commissioner, Utah System of Higher Education.
• Associate Director of Economic Development, Ryan Angus

UCAP DIGITAL MEDIA PATHWAY IMPLEMENTATION

The UCAP Digital Media Partnership identified eight areas of focus for aligning with the digital media industry (see Figure 7). These eight areas of focus were the basis for the development of programs of study. Secondary education courses essential to the digital media core have been identified as well as foundational knowledge and skills. At the postsecondary level, certificates, degrees and degree emphases available through USHE institutions have been aligned with the eight areas of focus. The UVU certificates, degrees and degree emphases have been aligned and content has been validated by the business and industry advisory committee. The Digital Media Pathway, target degrees and careers are shown in Appendix C.
Figure 7: UCAP Digital Media Pathway

**Career Clusters:** Arts, Audio/Video, Technology & Communications; Information Technology

**Career Pathway:** Digital Media

Description: Careers in the Digital Media Cluster involve creating, designing and the production of interactive multimedia products and services. The cluster includes digitally generated and computer-enhanced media that is used in a variety of industries. Students seeking careers within the Digital Media Cluster must develop competence in specific skill areas outlined within the various levels of a digital media pathway. These required skills include foundational academic skills, general knowledge and skills required in all clusters, specific knowledge and skills related to the general cluster, and specific knowledge and skills related to the pathway.

**Programs of Study:**

- Games
- Simulations
- Support Services
- Film
- Images/3D Content
- Tools
- Effects/Animation
- Mobile Apps
The Digital Media Partnership followed the USHE Career Pathway Development Guide that adheres to the recommendations of the National Clusters Framework to develop the UCAP Digital Media Pathway. (See page 22 in this report for the recommended steps and the USHE Career Pathway Development Guide for the detailed recommendations.)

SECONDARY COURSES IN THE PATHWAY

A digital media core has been developed and is available if high schools are able to provide the courses. High school students in the pathway must complete all state academic standards and should complete two or more of the identified CTE courses. The secondary digital media CTE courses are as follows:

- Digital Media I and II
- Web Design: Desktop Publishing
- Programming I and II
- Web Development
- Business Web Design
- Business Communication
- Digital Business Applications
- Design and Visual Communication
- Classic Animation (recommended for academic art credit)
- Business Communication (recommended for 12th grade English credit)

Secondary digital media courses are not available equally across Utah school districts; however, a number of these courses will be available for college credit through the concurrent enrollment program.

POSTSECONDARY DEGREES AND CERTIFICATES IN THE PATHWAY

Utah Valley University offers two- and four-year degrees in digital media. The Associate in Applied Science (AAS) degree in Digital Media Communications is designed to give students basic skills preparing them for entry-level employment. An Associate in Science (AS) degree in Administrative Information Management is also available that will prepare students toward a bachelor’s degree. The Bachelor of Science (BS) degree in Digital Media gives students more advanced training and skill development and offers them opportunities to emphasize their studies in gaming and animation, audio production, cinema production, internet (web) technologies and project and information management.

Certificates, degrees and degree emphases available through USHE institutions have been aligned with the eight pathways. (See the pathway layout in Appendix C.)

GAP ANALYSIS—VALIDATION BY BUSINESS AND INDUSTRY

The UVU degrees and emphases have been thoroughly examined by the business and industry advisory committee to see if any curriculum gaps were evident. Through the advisory committee’s validation process several suggestions were given to better align the curriculum with the needs of industry. The UVU Digital Media Department is in the process of closing those identified gaps.
CONNECTION TO OCCUPATIONS AND JOBS

An education pathway that does not connect with occupations and jobs falls short of qualifying as a well-defined pathway. Working with the Department of Workforce Services (DWS) at both the state and local level has provided us with a unique connection between the eight areas of focus in digital media and occupational and job data. This unique connection provides a crosswalk between CIP codes (instructional codes) to SOC codes (occupational codes) to NAICS codes that lead to specific occupation and current available jobs.

ACCESS TO PATHWAY INFORMATION – WEBSITE DEVELOPMENT

A website is planned that will be developed by the UVU BRC Rapid Software Development Center, and will offer detailed information about the pathway to students, parents, counselors, stakeholders and other educators. Users will be able to access information specific to a particular high school or postsecondary institution. The site will include information about required and available courses, degree and certificate options, and target careers. It will also provide access to real-time occupation and job data, including job openings at the local, state and national level.

PATHWAY EVALUATION

UVU’s Business Engagement Strategy Career Pathways Taskforce (described in Part four) served as the evaluator to the Digital Media Pathway. Suggestions made by the taskforce were implemented. The taskforce endorses the work of the Digital Media Partnership and the UCAP Digital Media Pathway.

"THE PROCESS OF PREPARING STUDENTS FOR THE TRANSITION FROM HIGH SCHOOL TO COLLEGE AND INTO THE CAREER WORLD IS DEFINITELY COMPLEX. IT WAS HELPFUL TO BRING TOGETHER THE MINDS THAT CAN IDENTIFY AND IMPLEMENT SOME OF THE CHANGES THAT NEED TO BE MADE TO IMPROVE THIS TRANSITION. THERE IS A LOT OF WORK AHEAD, AND MORE CONVERSATIONS THAT CAN BE HELD TO STRENGTHEN THE PROCESS OF ASSISTING STUDENTS IN THEIR PURSUIT OF HIGHER EDUCATION."

– ADAM BLACK, DIRECTOR, UVU ACADEMIC COUNSELING CENTER
PART FOUR: BUSINESS ENGAGEMENT STRATEGY—CAREER PATHWAYS TASKFORCE IMPLEMENTATION

HIGH-LEVEL STAKEHOLDERS PARTNERSHIP: A PROCESS SUMMARY

PARTNERSHIP CREATION

The Mountainland K-16 Alliance superintendents supported President Holland in creating a stakeholder team to participate in four working sessions to develop a dynamic, practical plan for curriculum alignment between secondary, postsecondary and business and industry for seamless transition. Participants were recommended by the Mountainland K-16 Alliance and invited by letter from President Holland to participate. This method facilitated bringing diverse and well-positioned stakeholders to the table.

The representatives selected are respected educators and business representatives who are recognized as leaders and experts in the Mountainland region. (See Appendix D for a list of participants.) The stakeholder team was given the charge to map out a plan for improved collaboration between public education, higher education and various industries that UVU can strategically follow to better prepare a regional workforce. The team members’ thoughtful participation, contributions and recommendations were facilitated through Gary Wixom, Ph.D., assistant commissioner for the Utah System of Higher Education (USHE) and lead by Susan Thackeray, M.Ed., director of Career and Technical Education at Utah Valley University.

WORKING SESSIONS

The working sessions were divided into four strategic two-hour discussions held between January 2012 to May 2012. The focus of each session was as follows:

Session 1: Taskforce Outcome Goals.
Session 2: Gap Analysis for the Mountainland Service Area.
Session 3: Determine Effective Assessment Strategies to Validate Alignment and Review Assessed Outcomes.
Session 4: Recommendations to Close Gaps; Develop a Replicable Process.

Team members were expected to devote substantial individual research and preparation between each session to maximize the session efficiency. (The questions in Appendix A helped guide these discussions.)
SESSION 1: TASKFORCE OUTCOME GOALS

The taskforce was introduced to the concepts of Career and College Readiness Pathways, Clusters, Rigorous Programs of Study, and the Utah Cluster Acceleration Partnership. They were provided a modified version of the *Significant Discussions* guide to review and discuss in the second session. The group was allowed time to share their areas of expertise and disclose what contribution their experience will lend to the outcomes.

The taskforce was provided a written statement of the following expectations for delivered outcomes. By the development of career pathways and rigorous programs of study, the career pathway taskforce is assisting Utah Valley University in making initial recommendations for further work in the following areas, particularly as they relate to career pathway development:

1. Decreasing the need for remediation at the postsecondary level.
2. Increasing enrollment and persistence in postsecondary education.
3. Increasing academic and skill achievement at secondary and postsecondary levels.
4. Increasing attainment of postsecondary degrees, certificates or recognized credentials.
5. Increasing entry into employment or further education.
6. Prioritizing the UVU certificates and degrees for Rigorous Programs of Study development.

SESSION 2: GAP ANALYSIS

The following issues were discussed during session two.

BES CAREER PATHWAY TASKFORCE AND UCAP DIGITAL MEDIA PATHWAY

During the second session the taskforce reviewed the relationship between the UVU BES Career Pathway initiative and the UCAP Digital Media Pathway project. The goals of UCAP include the development of an educational pathway that students can follow from secondary education to postsecondary education and then connect to actual job openings through collaboration with the Department of Workforce Services. The BES Career Pathway Taskforce was also charged with reviewing the Digital Media Pathway and then to prioritize the UVU certificates and degrees for future pathway development. Having a clearly defined pathway identified for students is becoming more important as the global economy continues to develop; however, the creation of effective pathways is challenging. The group’s groundbreaking role in the Mountainland region was recognized.

IMPACT OF GEORGETOWN REPORT

The group discussed reports issued by the Center on Education and the Workforce at Georgetown University. The report continues to have significant impact on states across the country. Most states have now adopted goals to increase the number of postsecondary graduates based on Georgetown’s data. Utah’s goal of reaching 66% of its population having a postsecondary credential is based on Georgetown’s data.
In January of 2012, the unemployment rate was at 8.9% for those with a bachelor’s degree. However, according to the Georgetown Center study, the unemployment rate for job seekers with only a high school diploma was 22.9%, and was as high as 31.5% for high school dropouts. A major conclusion of that report is that what you choose as a major significantly impacts your chance for employment. The group concurred that providing students with accurate career pathway information is essential to guide students through a successful educational experience.

**SIGNIFICANT DISCUSSIONS MODEL—GROUP DISCUSSIONS**

Using the *Significant Discussions* document as a guide, the taskforce discussed in depth the issues and challenges that face education today at all levels. (The questions discussed are presented in Appendix B.)

**Understanding the Issues and Challenges.** As the educational reform movement has swept across the country it has had an impact on both secondary and postsecondary education, causing the educators at both levels to look for ways to improve access, persistence and completion. Dan Hull, in *Career Pathways: Education with a Purpose*, states what many reformers across the country are saying: “Public secondary education in the United States has lost sight of its purpose.” 29 Secondary and postsecondary education is struggling to remain relevant for the majority of American young people and economical development. Where you have poor education, you have poor economic development, and economic development is critical to the future of the state and the nation.

From current state and national research, it is clear that too many students are dropping out, too many are not transitioning to postsecondary training, and too many are not prepared for the workforce. Too many students are not being prepared with the basic academic and employability skills that lead to jobs that are in high demand and offer livable wages.

The UVU BES Career Pathway Taskforce examined data supporting the

---

29 *Career Pathways: Education with a Purpose*, compiled and Coauthored by Dan M. Hull, CORD.
educational challenges that students face in Utah. Although Utah has a better than average high school graduation rate, its high-school-to-college matriculation rate is average (around 28th in the nation). The most recent Measuring Up report (2008) indicates that student enrollment in college by age 19 has dropped by 14% in Utah since the early 1990s, in contrast to a nationwide increase of 8%. In short, the taskforce examined data indicating that, relative to reaching the “big goal” by 2020, 1. Too many students drop out of high school. 2. Too many students have low academic expectations. 3. Too many students are not reaching college and career readiness. 4. Too many students are not transitioning to a postsecondary credential, certificate or degree program. 5. Too many students are not completing their postsecondary goal. 6. Too many students are not obtaining the advanced skills necessary for employment. 

Educational Challenges to Educational Reform. Many challenges face educational reformers today at all levels. Most of the challenges facing education do not have simple answers. Class sizes are too large in the secondary schools – especially with cutbacks in state education budgets and an increasing number of students come to school challenged with inadequate preparation, while some students come from family or cultural backgrounds that do not value education. At the postsecondary level, the pressure to provide access to more students with decreasing resources has put a strain on institutions. Legislatures are demanding more, including increased accountability, without providing adequate additional resources to assist with these efforts. Increasing access means more students with low academic skills will learn those skills that are necessary to transition through defined certificates and degrees. The need for educational reform spans all levels of the education sequence and requires cooperation and collaboration at each of these levels.

DWS Data Disconnect. The group noted that a well-defined career pathway leads students through career planning, through secondary and postsecondary educational opportunities, and includes occupational and job availability data. However, over the years, matching accurate occupational and job availability data to educational programs has been a challenge. Working with the local DWS office in the Mountainland region, the group is currently implementing a strategy that will provide an accurate crosswalk between educational programs (CIP codes), to DWS occupations (SOC codes), and to specific open jobs in the pathway. Providing this information will increase the value of a well-defined pathway for students at all levels.

SESSION 3: ASSESSMENT STRATEGIES

DETERMINE EFFECTIVE ASSESSMENT STRATEGIES TO VALIDATE ALIGNMENT

The group identified several strategies to assess gaps in the alignment between industry and education. 
• Effective evidence-based decision making strategies to validate alignment
should be strengthened. Key stakeholders can monitor defined indicators of success over time. The model will develop a local shared knowledge base to encourage a collaborative local strategy for pathway improvement.

• UCAP Digital Media Career Pathway model development encourages comprehensive discussions across multiple cross-functional teams to ensure the appropriate identification of needed courses, skill sets and degrees required for employment. Currently digital media is the only pathway developed. The process is resource intensive to develop more than one or two pathways per year.

• DWS Data – Although every state recognizes the need to make data-informed decisions, not enough robust data is available to understand the need or the efficacy of education to meet the needs. The identified need for data improvement was noted and discussed in a symposium that included high-level state stakeholders. The Jobs for Utah’s Future initiative through the Governor’s Education Excellence Commission is leading tangible strategies for action.

UVU’S CURRENT EFFORTS TO ADDRESS THE ISSUES

UVU is currently engaged in addressing three important issues or challenges that were identified during the Significant Discussion process. The challenge of remediation is nationwide and growing. The challenge of retaining students through to completion is the subject of major initiatives at most institutions of higher education. Matching the needs of business and industry for skilled workers to the availability of new and cutting-edge educational programs will require careful consideration and development by institutions.

Michelle Kearns, director of Student Success and Retention at UVU, presented a summary of UVU retention statistics and strategies. The following are some points of this discussion.

• Access – UVU is an open-admission university. No student is denied admission. However, the University has enrollment standards that require every student to submit ACT/SAT scores, an official high school transcript and a minimal application fee. After admission, all new students are guided through a personalized enrollment process with an advisor.

• First-time, full-time bachelor degree-seeking students have increased by 18% between fall 2004 and fall 2009. At-risk populations are demonstrating a similar increase at UVU.

• Completion – Although graduation rates are on the rise, current data demonstrates that UVU falls short by about 7% when compared to graduation rates of similar institutions.

• Retention – Several improvement initiatives are in place to increase year-to-year retention rates including:

  • First-Year Experience programs (FYE) with a focus on at-risk populations
  • A Student Tracking System to provide data and facilitate intervention
  • Strategic training programs for employees on philosophies, strategies and practices in FYE, retention and student success.

Research demonstrates that students who attend full-time are retained almost 26% more than those students who attend only part-time. UVU has a large population of students who are required to maintain part-time student status while working more than 30 hours per week.
SESSION 4: CLOSING THE GAPS

In the fourth session, the taskforce developed conclusions and recommendations (see Part five). Due to the intentional structure of the group, the team consisted of subject matter experts as well as non-subject matter experts. The final discussion was facilitated to encourage divergent idea generation within a non-critical environment. A methodology of simple brainstorming provided the members of the group an opportunity to use the known information provided in previous working sessions to generate a collection of specific ideas for further exploration. The verbal interaction within the group allowed hybrid concepts to emerge for documentation. Critical steps and rules were followed to ensure all members were engaged equally for a non-hostile environment.

Steps:
- Review the previous session information for the team to understand the problem(s).
- Explain the rules for discussion.
- Conduct a brainstorming discussion.
- Record each idea.
- Combine similar ideas.
- Prioritize ideas through consensus.

Rules:
- All ideas are recorded.
- No criticism—all ideas are valued.
- Do not be concerned about how an idea will or will not be executed—be imaginative.
- Synergize and build on each other’s ideas.
- The facilitator moves the brainstorming session forward to fit the time constraint.

The consensus of the stakeholders was that discussions were valuable in helping them understand the issues, increasing their commitment to closing the gaps and providing a cohesive foundation upon which to move forward.

“This process of bringing together all of the service providers that work with or prepare students for higher education is an example of a new avenue we should be pursuing in the state to bring all of our limited resources together to focus on finding solutions rather than just identifying problems.”

– Barry Graff, Administrator, K-12 Educational Services

Alpine School District
CONCLUSIONS

The Utah Valley University Business Engagement Strategy is focused on connecting the University to the community so that significant engagement can take place. The Business Engagement Strategy Taskforce was charged with the task of examining both state and national education issues in order to better understand the challenges facing the University and secondary school districts as they attempt to serve the business community in an effective manner. The team focused its discussions on issues associated with increasing access, retention and completion. During the working sessions, the taskforce examined educational reform issues, state and national data, reviewed the University’s approach to solving educational challenges and participated in thoughtful discussion and exchange of ideas. As a result of the working sessions, the taskforce has made the following conclusions:

1. Education is a critical element in ensuring the nation's employment stability and economic growth. In order to meet the societal and workforce demands during the next ten years, Utah will need to increase the number of citizens with some level of postsecondary training. Utah Valley University could continue its efforts to respond to the state’s goal of 66% of Utahns between the ages of 25 and 64 having a postsecondary degree or certificate by the year 2020.

2. Educational entities at both secondary and postsecondary levels will need to increase the number of students graduating from high school prepared to be successful in postsecondary education and training.

3. The alignment between secondary and postsecondary educational training programs is essential in helping students be successful in completing educational goals. A strong K-16 strategy is necessary to ensure that connections are in place for students to transition between educational levels.

4. Postsecondary institutions will need to increase the number of students who persist and successfully complete education and training programs.

5. Educational programs need to better align with the needs of business and industry.

6. Students need to prepare for the careers of the future by having clearly defined pathways to follow through educational training programs that are connected to job opportunities.

"I found the concept of greater counseling efficiency and increased numbers to be a critical component to a student's success in the development of a positive career pathway. This must take place in middle school as well as high school."

– Steve Densley, President, Utah Valley Chamber of Commerce

"Great work came from this project. It was a privilege to be part of the team."

– Bart Peery, Principal, Salem Hills High School
RECOMMENDATIONS

The group recognizes that closing the gaps between education and the public sector is critical to the social and economic development of the region. Commitments between companies and institutions require a focus of complementary functions for sustainability. Strategic economic growth is based on collaborative partnerships where knowledge and awareness of functions are maintained through continued discussions. Considering that high-quality products and services are necessary for economic growth, gaps between the needs of industry and the training of a potential workforce must be carefully monitored for efficiency through an iterative review process. The BES Career Pathways Taskforce made the following recommendations to close gaps noted previously.

1. Higher education dropout rates range from insufficient preparation of students to inadequate university transition strategies, long degree programs and inflexible curricula that meet the workforce demands of business and industry. Reliable data about employment placement and needs varies and is often lacking in availability. The BES taskforce recommends that key stakeholders regularly review the progress of strategies for improvement and consider all reforms necessary to reduce dropout rates. Although university and non-university sectors may have complementary goals, the strategies for success are often segmented. Key regional government and educational stakeholders should consider an ongoing coordinating body to define regional priorities and recommend strategies for continued improvement.

2. Utah Valley University has developed the educational approach of engagement and consistently employs local private sector employees as instructors to improve market relevance. However, initiatives to improve market-driven education is typically discipline-based rather than University driven. The University is taking steps to expand university commercialization through entrepreneurship job creations mainly supported through incubators. Targeted programs of study that meet labor market demands need to be systematically developed and monitored. Programs need clear labor outcomes and graduation strategies in place to support students into employment. Strategic use of data is necessary for the University to respond to the labor market. The taskforce identified and prioritized training in computer-focused technologies as the top four priorities for the Mountainland region. The taskforce recommends the UCAP model for enhancing an expanded career pathway in the areas of computer science and software engineering.

3. Using systematic analysis, the taskforce has noted an absence of transparent pathways for students through education into a career. One main issue blocking the transparency is the fragmented knowledge by parents and students of architecture of a coordinated structure. The region can strengthen the pathway model by enlisting the assistance of established parent associations. Seamless transition from public education into higher education and placement into employment can be supported through the efforts of associations and businesses collaborating to inform parents of the path. An increased effort to utilize parent association forums and events to share the message of pathways is recommended by
the BES team. The following potential actions should also be considered to assist students in making the transition from secondary to postsecondary education and training:

- Increase counseling and advising at the secondary level with a career/college focus.
- Hold parent nights that include career pathway discussions.
- Encourage and develop support from regional/district Parent-Teacher Associations.
- Develop parent forums and organizations at the postsecondary level and connect them to parent organizations at the secondary level.

4. UVU is positioned to build and strengthen several established strategies currently in place. The BES taskforce recommends that these and other similar current strategies be continued and strengthened.

a) The University has a strong K-16 Alliance relationship that supports an initiative for math remediation. Through the K-16 Alliance, the following potential actions should also be considered to reduce the need for remediation:

- Clarify the specific math requirement level for college entrance.
- Require additional math preparation in high school.
- Put the very best teachers in entry-level college courses when possible.
- Provide summer workshops to help students prepare for college, including information and preparation for the Accuplacer exam.

b) Utah Valley University is reviewing department-specific requirements for targeted degree relevance. In addition to current efforts, the following should be considered:

- Each student should have an educational/career plan.
- Students should be connected with the services provided by the Department of Workforce Services early in their educational sequence.
- Additional training in career planning should be provided to academic advisors.
- UVU should increase stackable certificates and degrees to enhance student opportunities.
- Business, industry and trade organizations should be engaged to assist in funding additional counseling and advising services.
- UVU should review and publish access, retention and placement data for each program of study.

c) USHE sponsored Technology Intensive Concurrent Enrollment (TICE) courses and high school placement assessments are currently under development.

d) Career fairs such as UVU Days, Empowering Your Tomorrow and Expanding Your Horizons are targeted to assist young men and women in selecting careers. The fairs allow an opportunity to connect students early with information regarding the training requirements of an industry.
The following long-term measures would help educational and public sector partners reach the goal of focused labor outcomes and graduation strategies.

5. The educational partners should move toward co-registration aligned content and assign high-performing teachers to entry-level courses. Strategies for alignment include the increase of pathway-focused concurrent enrollment opportunities. Increased selections of stackable certificates of proficiency are necessary to allow students to demonstrate competencies through short-term education while building toward associate, bachelor or graduate degree levels.

6. Online publication of placement data and required skill sets will help bring employers and graduates together and efficiently improve the students’ ability to make appropriate career choices.

7. Educational reforms at both the secondary and postsecondary levels are required to ensure completion. It is up to school authorities to prepare and support students by clearly declaring needed courses and providing proactive scheduling so that students can succeed in a timely manner.

8. Strategies for early student career exploration should include the best practice of increased advising. Considering the impact of tight budgets to fund additional advising support, it is recommended that innovative solutions for increased efficiencies of the current resources be reviewed. The Utah Department of Workforce Services can assist to expand counseling to be career and college specific with a partnered focus. Advising can be parent assisted by providing additional information to parents on the expectations of college and career preparation. Career information can be built into curricula of student success courses. Trade organizations can be enlisted to support additional advising time in a more focused effort. All innovative recommendations are designed to free up the schedule of the advisor to deliver a more expanded critical conversation of strategic career planning.

9. Utah Valley University should formally develop career pathways following the 10 elements identified in the Rigorous Programs of Study and the USHE Career Pathway Development Guide, recently used to develop the Digital Media Pathway. Although a well-defined career pathway is recommended for all programs of study, priority should be given to the following:
   a. Computer Science
   b. Software Engineering
   c. Computer Engineering
   d. Healthcare Professions
   e. Education
   f. Hospitality
   g. Business Management

Where appropriate, each educational pathway should be advised by a business and industry advisory committee actively engaged in validating each level of the curriculum. The curriculum should be reviewed and validated on an annual basis.
APPENDIX A: QUESTIONS ADDRESSED
BY THE STAKEHOLDER TEAM

As a result of our Significant Discussions work, coupled with the information presented in the Business Engagement Strategy meetings, the following questions were addressed by the taskforce.

1. What steps should UVU take, or continue, to increase the number of students making the transition from secondary to postsecondary education?
2. What steps should UVU take, or continue, to reduce the need for remediation?
3. What steps should UVU take, or continue, to assist students in persisting to completion?
4. What steps should UVU take, or continue, to increase the attainment of postsecondary degrees, certificates or recognized credentials?
5. What steps should UVU take, or continue, to assist students who complete postsecondary certificates or degrees to enter employment or move on to further education?
6. UVU has set a goal to develop career pathways, following the Rigorous Program of Study model, for their programs of study. List in priority order the 10 programs that you think should be developed first.
APPENDIX B: WORKSHEET QUESTIONS

To facilitate the discussion and evaluation of each work session, the facilitators utilized the following questions, provided to participants in worksheet format. 31

Worksheet A—Why Significant Discussions?
   a. What did you learn that surprised you most?
   b. What did you learn that you did not know?
   c. What do you need to clarify?
   d. What additional information do you need?

Worksheets B & C—Understanding the Issues and Challenges
   e. What accountability measures at your organizations present the greatest challenges?
   f. What are the most difficult challenges students face?
   g. What role can business and industry partners play in changing these conditions?
   h. What is the best measure of student attainment?
   i. What was your own experience in preparing for college?
   j. Is it the responsibility of the high school to prepare a student for college?
   k. Can we get more high school students to transition to college?

Worksheet D—Goals
   l. What can we do to change the problematic conditions outlined in Significant Discussions?

Careers in the Digital Media Cluster involve creating, designing and producing interactive multimedia products and services. The cluster includes digitally generated and computer-enhanced media that is used in a variety of industries. Students seeking careers within the Digital Media Cluster must develop competence in specific skill areas outlined within the various levels of a digital media pathway. These required skills include foundational academic skills, general knowledge and skills required in all clusters, specific knowledge and skills related to the general cluster and specific knowledge and skills related to the pathway.
# 8 Career Occupational Opportunities

<table>
<thead>
<tr>
<th>Games</th>
<th>Simulations</th>
<th>Support Services</th>
<th>Film</th>
</tr>
</thead>
<tbody>
<tr>
<td>The development of a title that is an interactive form of recreation or sport played according to rules and decided by skill or luck. The concept of interactive gaming encompasses an array of applications from the simple and casual to the massive and complex developed for a wide range of electronic platforms.</td>
<td>Professions dedicated to selecting and arranging visual elements that mimic real-life situations.</td>
<td>Professions that implement supplementary activities or functions required for successful completion of a process, program or project.</td>
<td>Professions dedicated to the tasks of post-production aspects of filmmaking, including film postproduction, film theory, digital media production, and video-editing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Prep</th>
<th>Secondary Prep</th>
<th>Secondary Prep</th>
<th>Secondary Prep</th>
</tr>
</thead>
</table>
| High school students must complete all state academic standards and two or more of the following CTE courses:  
   • Digital Media I and II  
   • Computer Programming  
   • 3D Modeling and Animation  
   • Design and Visual Communication  
   • Commercial and Advertising Art  
   • Classic Animation (recommended for academic art credit)  
   • Business Communication (recommended for 12th grade English credit) | High school students must complete all state academic standards and two or more of the following CTE courses:  
   • Digital Media I and II  
   • Computer Programming  
   • 3D Modeling and Animation  
   • Design and Visual Communication  
   • Commercial and Advertising Art  
   • Classic Animation (recommended for academic art credit)  
   • Business Communication (recommended for 12th grade English credit) | High school students must complete all state academic standards and two or more of the following CTE courses:  
   • Digital Media I and II  
   • Web Design  
   • Desktop Publishing  
   • Digital File Prep  
   • Web Development  
   • Business Web Design  
   • Introduction to Graphic Communication (Intermediate and Advanced)  
   • Classic Animation (recommended for academic art credit)  
   • Business Communication (recommended for 12th grade English credit) | High school students must complete all state academic standards and two or more of the following CTE courses:  
   • Digital Media I and II  
   • TV Broadcasting; Video Production  
   • Basic Digital Photography  
   • Classic Animation (recommended for academic art credit)  
   • Business Communication (recommended for 12th grade English credit) |
<table>
<thead>
<tr>
<th>Games</th>
<th>Simulations</th>
<th>Support Services</th>
<th>Film</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundational Cluster Knowledge and Skills</td>
<td>Foundational Cluster Knowledge and Skills</td>
<td>Foundational Cluster Knowledge and Skills</td>
<td>Foundational Cluster Knowledge and Skills</td>
</tr>
<tr>
<td>Certificate &amp; Associate Degrees</td>
<td>Certificate &amp; Associate Degrees</td>
<td>Certificate &amp; Associate Degrees</td>
<td>Certificate &amp; Associate Degrees</td>
</tr>
<tr>
<td>AAS in Digital Media; AS Emphasis in Animation</td>
<td>AAS in Digital Media; AAS in Design Graphics; AS Emphasis in Animation; Emphasis in Design</td>
<td>AAS in Digital Communication; AAS in Design Graphics; AS Emphasis in Design</td>
<td>Certificate in Visual Technologies; AS Emphasis in Multimedia; AAS in Digital Film Production</td>
</tr>
<tr>
<td>UVU Degrees</td>
<td>UVU Degrees</td>
<td>UVU Degrees</td>
<td>UVU Degrees</td>
</tr>
<tr>
<td>AAS Digital Communication Technology; BS Digital Media Gaming and Animation Emphasis; BS Digital Media Internet Technologies Emphasis; BS Digital Media Audio Production Emphasis</td>
<td>AAS Digital Communication Technology; AAS Administrative Information Management Emphasis; BS Digital Media Gaming and Animation Emphasis; BS Digital Media Project and Informational Management Emphasis; BS Business/Marketing Education</td>
<td>AAS Digital Communication Technology; AAS Administrative Information Management; AS Administrative Information Management; BS Digital Media Internet Technologies Emphasis; Project and Info. Mgmt Emphasis; BS Business/Marketing Education</td>
<td>BS Digital Media Audio Production Emphasis; BS Digital Media Cinema Production Emphasis</td>
</tr>
<tr>
<td>Undergraduate Degree BA/BS</td>
<td>Undergraduate Degree BA/BS</td>
<td>Undergraduate Degree BA/BS</td>
<td>Undergraduate Degree BA/BS</td>
</tr>
<tr>
<td>BS in Computer Science; BS in Design Graphics; BFA in Animation; BS in Digital Media Emphasis in Gaming and Animation</td>
<td>BS in Computer Science; BS in Design Graphics; BFA in Animation; BS in Digital Media Emphasis in Gaming and Animation</td>
<td>BS in Computer Science; BFA in Graphic Design; BA in Visual Arts; BFA in Studio Arts</td>
<td>BS in Digital Media Emphasis in Cinema Post-Production; BS in Communication Emphasis in New Media or Emphasis Digital Film; MFA in Technical Theater</td>
</tr>
<tr>
<td>Games Simulations Support Services</td>
<td>Film</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------</td>
<td>------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Graduate Studies</strong> MS in Computing; MS in Computer Science; Master of Fine Arts Emphasis in Game Arts and Game Production PhD in Computing Emphasis in Game Engineering</td>
<td>MS in Computing; MS in Computer Science PhD in Computing</td>
<td>MS in Computing; MS in Computer Science PhD in Computing</td>
<td>MS in Computer Science</td>
</tr>
<tr>
<td><strong>Occupations</strong> Artist Designer Flash Designer Graphic Designer Project Manager Programmer Usability Tester 11.0801; 11.0803 11.0201; 11.0203 11.0299; 11.0301 11.0401; 110501</td>
<td>Artist Interaction Designer Instructional Designer Producer/Project Manager Programmer Technical Writer Usability Tester 50.0499; 50.0705 50.0706; 11.0103 11.0201; 11.0203 11.0299; 11.0301 11.0401; 110501</td>
<td>Desktop Publisher Designer Marketing Manager Programmer Visual Designer Web Developer Web Manager 09.0702; 09.0901 09.0902; 09.0903 09.9999; 10.0303 10.0303; 50.0401 50.0402; 50.0502 50.0602; 50.0706</td>
<td>Designer Film Production Technician Producer/Project Manager Video Editor Copywriter 09.0701; 09.0799 10.0105; 10.0201; 10.0202; 10.0203; 10.0299; 50.0502 50.0602; 50.0602 50.0699; 500605</td>
</tr>
<tr>
<td>Images / 3D Content</td>
<td>Tools</td>
<td>Effects / Animation</td>
<td>Mobile Apps</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------</td>
<td>---------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>The creation or modification of digitally constructed elements within a virtual three-dimensional space.</td>
<td>Titles developed for an assortment of electronic devices. Most commonly referred to as software, and/or applications.</td>
<td>The combination of physical and computer-generated images to create motion-based reality.</td>
<td>The combination of web development, computer programming, and interaction design to create highly-functional applications for meaningful user experiences.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Prep</th>
<th>Secondary Prep</th>
<th>Secondary Prep</th>
<th>Secondary Prep</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school students must complete all state academic standards and two or more of the following CTE courses: • Digital Media I and II • 3D Modeling and Animation • Commercial Art • Design and Visual Communication • Commercial and Advertising Art • Industrial Design • Classic Animation (recommended for academic art credit) • Business Communication (recommended for 12th grade English credit)</td>
<td>High school students must complete all state academic standards and two or more of the following CTE courses: • Digital Media I and II • Web Design; Desktop Publishing • Programming I and II • Web Development • Business Web Design • Business Communication • Digital Business Applications • Design and Visual Communication • Classic Animation (recommended for academic art credit) • Business Communication (recommended for 12th grade English credit)</td>
<td>High school students must complete all state academic standards and two or more of the following CTE courses: • Digital Media I and II • Computer Programming • 3D Modeling and Animation • Design and Visual Communication • Video Production • Classic Animation (recommended for academic art credit) • Business Communication (recommended for 12th grade English credit)</td>
<td>High school students must complete all state academic standards and two or more of the following CTE courses: • Digital Media I and II • Digital Applications • Web Development • Business Web Design • Computer Programming I and II • Design and Visual Communication • Classic Animation (recommended for academic art credit) • Business Communication (recommended for 12th grade English credit)</td>
</tr>
<tr>
<td>Images / 3D content</td>
<td>Tools</td>
<td>Effects / Animation</td>
<td>Mobile Apps</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------------------------------------</td>
<td>---------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Foundational Cluster</td>
<td>Foundational Cluster Knowledge and Skills</td>
<td>Foundational Cluster Knowledge and Skills</td>
<td>Foundational Cluster Knowledge and Skills</td>
</tr>
<tr>
<td>Certificate &amp;</td>
<td>Certificate &amp; Associate Degrees</td>
<td>Certificate &amp;</td>
<td>Certificate &amp; Associate Degrees</td>
</tr>
<tr>
<td>Associate Degrees</td>
<td></td>
<td>Associate Degrees</td>
<td></td>
</tr>
<tr>
<td>AS Emphasis in Animation; AAS in Digital Media; AAS in Design Graphics; AS Emphasis in Design</td>
<td>AS Emphasis in Animation; AS Emphasis Design; AAS in Digital Media; AAS in Design Graphics</td>
<td>AS Emphasis in Animation; AS Emphasis in Multimedia; AAS in Digital Media; AAS in Design Graphics</td>
<td>AS Emphasis in Design; AAS in Design Graphics; AAS in Design Graphics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UVU Degrees</th>
<th>UVU Degrees</th>
<th>UVU Degrees</th>
<th>UVU Degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS Digital Media Gaming and Animation Emphasis</td>
<td>AAS Digital Communication Technology; AAS Administrative Information Management; AS Administrative Information Management; BS Digital Media Gaming and Animation Emphasis; BS Digital Media Internet Technologies Emphasis; BS Digital Media Project and Informational Management Emphasis; BS Business/Marketing Education</td>
<td>BS Digital Media—Gaming and Animation Emphasis; BS Digital Media Audio Production Emphasis; BS Digital Media Cinema Production Emphasis</td>
<td>BS Digital Media Internet Technologies Emphasis; BS Business/Marketing Education; BS Digital Media Audio Production Emphasis</td>
</tr>
<tr>
<td>Images / 3D content</td>
<td>Tools</td>
<td>Effects / Animation</td>
<td>Mobile Apps</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------</td>
<td>---------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Undergraduate Degree BA/BS</td>
<td>Undergraduate Degree BA/BS</td>
<td>Undergraduate Degree BA/BS</td>
<td>Undergraduate Degree BA/BS</td>
</tr>
<tr>
<td>BS in Computer Science; BS in Design Graphics; BFA in Animation; BFA in Illustration; BFA in Photography</td>
<td>BS in Computer Science; BS in Graphic Arts; BS in Design Graphics</td>
<td>BS in Computer Science Emphasis in Software Development; BS in Design Graphics; BFA in Animation; BS in Digital Media Emphasis in Gaming and Animation; BS in Digital</td>
<td>BS in Computer Science Emphasis in Information Technology; BS in Design Graphics</td>
</tr>
<tr>
<td>Graduate Studies</td>
<td>Graduate Studies</td>
<td>Graduate Studies</td>
<td>Graduate Studies</td>
</tr>
<tr>
<td>MS in Computer Science</td>
<td>MS in Computing; PhD in Computing</td>
<td>MS in Computing; PhD in Computing</td>
<td>MS in Computing; PhD in Computing</td>
</tr>
<tr>
<td>Occupations</td>
<td>Occupations</td>
<td>Occupations</td>
<td>Occupations</td>
</tr>
</tbody>
</table>
APPENDIX D: PARTICIPANTS IN THE BES CAREER PATHWAYS STAKEHOLDER TEAM

Gary Wixom | gwixom@utahsbr.edu
801-321-7123
Assistant Commissioner USHE
60 South 400 West
Regents Building – Gateway
Salt Lake City, UT 84101

Barry Graff | bgraff@alpinedistrict.org
801-610-8459
Administrator, K-12 Educational Services
Alpine School District
575 North 100 East
American Fork, UT 84003

Bart Peery | bart.peery@nebo.edu
801-423-3200
Principal, Salem Hills High School
150 N. Skyhawk Blvd.
Salem, UT 84653

Steve Roy | steven.roy@uvu.edu
801-863-7933
Associate VP for Economic Development
Utah Valley University
MS 240

Brent Newren | bnewren@utah.gov
801-342-2645
Service Area Director
Department of Workforce Services
1550 North 200 West
Provo, UT 84604

Adam Black | blackad@uvu.edu
801-863-6378
Director, Academic Counseling Center
Utah Valley University
MS 101

Steve Densley | sdensley@thechamber.org
801-851-2562
Chamber President
Utah Valley Chamber of Commerce
51 S. University Ave, Suite 215
Provo, UT 84601

Mari Braithwaite | mbraithwaite@alpinedistrict.org
801-610-8509
Curriculum Director
Alpine School District
575 North 100 East
American Fork, UT 84003

Eva Bernfeld | ebernfeld@uvu.edu
801-863-7028
Director of Academic Scheduling & Curriculum
Utah Valley University
MS 112

Lisa Birch | ibirch@mlatc.edu
801-753-4164
Career Pathway Coordinator
Mountainland Region
2301 West Ashton Blvd.
Lehi, UT 84043

Ian Wilson | ian.wilson@uvu.edu
801-863-8048
VP of Academic Affairs
Utah Valley University
MS 194

Susan Thackeray | susan.thackeray@uvu.edu
801-863-8906
Director, Career and Technical Education
Utah Valley University
MS 247
Eva Bernfeld
Director of Academic Scheduling and Curriculum
Utah Valley University
Eva Bernfeld serves as the director of Academic Scheduling and Curriculum at UVU, where she directs all academic class scheduling and curriculum activity relative to credit courses for the institution. She formerly served as academic services manager at Higher Colleges of Technology, curriculum manager at Utah Valley State College, and assistant director of The Avery Microcomputer Lab at Washington State University.

Lisa Birch
Coordinator
Mountainland Region Career Pathways
Lisa Birch has a bachelor’s degree in business management and was involved with business and industry in various positions of marketing, sales, information technology and management for 11 years before she became the Mountainland Regional Career Pathways coordinator in 2006. She also serves as the coordinator for the CTE Academic Assistance Program that is unique to the Mountainland region and is also the Chair of the Mountainland Region Healthcare Partnership and serves on other various advisory groups. Lisa has two children (Landen, 16 and Stockton, 13) one dog (Scout) and a husband (Scott). When she isn’t working, she is spending time with her family.

Adam Black
Director, Academic Counseling Center
Utah Valley University
Adam Black has been at UVU for nearly 10 years, working with students in the process of developing their career goals and plans and helping them transition into professional opportunities. He worked for approximately nine years in the mental health industry before transitioning to higher education. He has enjoyed being involved in the growth and progress of UVU over the past years.

Mari Braithwaite
Curriculum, Director
Alpine School District
Mari Brathwaite has worked for Alpine School district for 19 years. She is currently serving as a curriculum director in Alpine School District where she oversees the K-12 curriculum for content areas and the literacy initiatives for secondary schools. In addition, she has also served as a high school administrator, and as a language arts teacher at the junior high level.

Steve Thomas Densley
President CEO
Utah Valley Chamber of Commerce
Steve Densley is the longest sitting chamber president in the state of Utah and the second longest in state history. He graduated from Brigham Young University in 1970 where he played football. He had a distinguished career in industry, including the Crown Zellerbach Corporation in Chicago, the Electronics Development Corporation in Washington D.C., and Western Placement Consultants in Salt Lake City. He later became president of Kodiak Inc. in Utah and established several satellite offices around the state. He became chamber president of the Orem Chamber in 1982 and merged Provo and Orem chambers into one chamber in 1984. It became the Utah Valley Chamber of Commerce in 2009 and currently serves 1000 statewide companies.

Steve currently sits on the 2020 Prosperity State Education Board, Sundance Film Festival Board, National Audit Board, Utah Valley University Community Relations Board, Woodbury Business Schools National Board of Advisors, the UVU Business
Resource Centers Board, Pacific States Pipe Advisory Board, BSA Executive Board, Thanksgiving Point’s Children’s Museum of Natural Curiosity and numerous others, and is president of the Provo Rotary Club.

Barry J. Graff, Ed.D
Administrator, K-12 Educational Services
Alpine School District
Barry Graff is the administrator of K-12 educational services in Alpine School District. He supervises curriculum and instruction, staff development, technology and special education departments in the district. He has been a district supervisor of K-6 schools and 7-9 schools, an elementary principal and an elementary teacher. He has been with the district for 23 years. He received his bachelor’s degree and master’s degree from Brigham Young University and his doctorate from the University of Utah.

Brent Newren
Service Area Director
Department of Workforce Services (DWS)
Brent Newren is the Mountainland service area director for the Department of Workforce Services. He has been with the department for the past 14 years having served in various management positions. Prior to DWS he served in the private sector. He is a graduate of the University of New York and completed a career with the Armed Forces.

Bart Peery
Principal
Salem Hills High School
Bart Peery was the Principal of Payson High for the past two years and assistant principal for six years. Before that, he taught math, physical education, drivers education, French, and leadership for 17 years. Bart is married to Karolyn, and they reside in Payson. They have three boys and two grandchildren.

Steve Roy
Associate Vice President
Economic Development
Utah Valley University
Steve Roy is currently the associate vice president for economic development at Utah Valley University. This position plays a key role in the University’s efforts to encourage and cultivate economic growth and opportunities across the region. Prior to his position with UVU, Steve was the director of the Utah Science Technology and Research Initiative’s (USTAR) outreach and innovation activities in central Utah. In this capacity, he worked with private and public leaders to help businesses in key economic clusters that add to the economic and employment base in the region. Steve has more than 15 years of experience in organizational development, strategic change management, executive coaching and process re-engineering within the high technology sector, working with clients such as Sun Microsystems Inc., Applied Materials Inc., Intel Corporation and Siebel Systems Inc.

Susan L. Thackeray
Taskforce Lead, BES Career Pathways
Utah Valley University
Susan Thackeray was appointed by UVU President Matthew S. Holland as the project lead for UVU’s Business Engagement Strategy—Career Pathways. She currently serves as the director of Career and Technical education at Utah Valley University. Susan is a magna cum laude alumnus of Utah Valley University and adjunct faculty in the discipline of Digital Media. She holds a Master of Education in Instructional Technology from Utah State University.

In addition, Susan has over fifteen years of demonstrated leadership in industry and education that includes international and domestic higher
education instructional design, strategies for economic development, distance learning development, usability testing, and team organization/training. Her research interests include community college administration, under-represented populations, women and education in the field of technology. The Utah Women Tech Council recognized Susan in 2012 as a statewide technical innovator with the 5th Annual Women Tech award for Educational Excellence.

Ian K. Wilson, Ph.D
Vice President of Academic Affairs
Utah Valley University

Ian Wilson, vice president of Academic Affairs, has served more than two decades at UVU. He served as dean of the Woodbury School of Business from 1989 to 2001 and then again as interim dean from 2008 to 2010. He also worked as associate vice president of Institutional Advancement from 2001 to 2002 before being named vice president of Institutional Advancement and Marketing at UVU, a capacity he served in from 2002 to 2006. Prior to coming to UVU in 1989, Dr. Wilson worked as Chair of the Department of Business Administration at Mount Royal College in Calgary, Alberta. Prior to that, he worked as Program Coordinator of Human Resource Management at the same institution. Dr. Wilson has an extensive pedigree as a business faculty member, having taught human resource management, business statistics, business ethics, organizational behavior, principles of management, and compensation and benefits administration.

Gary S. Wixom, Ph.D
Facilitator-BES Career Pathways
Utah System of Higher Education

Dr. Gary S. Wixom is currently serving as an assistant commissioner at the Utah System of Higher Education. He has been involved in higher education as a teacher and administrator for more than 40 years, with experience in both secondary and postsecondary education. Prior to joining the commissioner’s staff at the Utah Board of Regents, Gary served as dean of the School of Adult and Continuing Education, and CTE director for Utah Valley State College and prior to that dean of Applied Science at the College of Eastern Utah. He holds a Ph.D. in business education/information management/higher education administration.

Janis Raje
Editor
BES Engagement Strategy
Career Pathways Report