4.2. Regional Universities: The regional university’s role is to provide open-access academic and career and technical education, undergraduate associate and baccalaureate programs and select graduate degree programs to fill regional or state workforce demands. Career and Technical Education programs are designed to meet workforce needs, lead to a certificate or degree, and include general education coursework. Articulation agreements allow students to transfer seamlessly from institutions offering Technical Education to CTE and academic pathways. Regional universities emphasize teaching, scholarly, and creative achievements that complement pedagogy, learning, and community service. The institution is a leading contributor to the quality of life and economic development at the local and state levels. Student success is supported through developmental programs and services associated with a comprehensive community college.
2015 - Initial Strategic Planning Process

Interviewed hundreds of Washington County business people, students, organizations, and community leaders

Q. What do you need from the university?

A. Engineers, computer programmers, technology experts, chemists/biologists, management, healthcare professionals
Regional industry lacks the skilled tech talent they need to fill positions, grow, and solve 21st century problems
Already in place:

- K-12 STEM Pipeline
- STEM programs
- Partnerships in technology innovation
Our Goal
is to build and sustain an educational and engaging course of study for students and community members in Southern Utah.

Our programs prepare participants to fill the demand for qualified tech talent in the local private sector and fuel the robust regional labor market.

Come explore with us!
STEM Outreach Center
453 South 600 East
St. George, Utah
stem@dixie.edu
Active Learning. Active Life.
(Learn-by-Doing)
ACTIVE LEARNING (LEARN-BY-DOING) + STEM INTENSIVE DEGREE PROGRAMMING = POLYTECHNIC ACADEMIC MODEL
DO WE NEED INSTITUTIONS WITH A POLYTECHNIC MODEL IN THE STATE OF UTAH?
4,700+ DEGREE-GRANTING INSTITUTIONS IN THE USA

32 INSTITUTES OF TECHNOLOGY/POLYTECHNICS
ACADEMIC PROGRAMMING MODEL

COMPREHENSIVE

EDUCATION  ARTS  BUSINESS  HUMANITIES AND SOCIAL SCIENCES

STEM
INCLUDING HEALTH SCIENCES

INTENSIVE
111 NEW PROGRAMS SINCE 2015

(81% STEM focused)
## Table 1: Utah Population by County

<table>
<thead>
<tr>
<th>County</th>
<th>2015</th>
<th>2025</th>
<th>2035</th>
<th>2045</th>
<th>2055</th>
<th>2065</th>
<th>Absolute Change 2015-2065</th>
<th>Percent Change 2015-2065</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaver</td>
<td>6,710</td>
<td>7,408</td>
<td>8,017</td>
<td>8,606</td>
<td>9,669</td>
<td>9,649</td>
<td>2,939</td>
<td>44%</td>
<td>26</td>
</tr>
<tr>
<td>Box Elder</td>
<td>52,971</td>
<td>60,984</td>
<td>67,664</td>
<td>74,440</td>
<td>80,334</td>
<td>86,218</td>
<td>33,247</td>
<td>63%</td>
<td>11</td>
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<tr>
<td>Cache</td>
<td>121,855</td>
<td>146,238</td>
<td>171,969</td>
<td>195,325</td>
<td>212,908</td>
<td>234,744</td>
<td>112,800</td>
<td>93%</td>
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<tr>
<td>Carbon</td>
<td>21,164</td>
<td>24,343</td>
<td>26,870</td>
<td>29,069</td>
<td>31,240</td>
<td>33,144</td>
<td>11,980</td>
<td>57%</td>
<td>16</td>
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<tr>
<td>Daggett</td>
<td>1,113</td>
<td>1,232</td>
<td>1,387</td>
<td>1,502</td>
<td>1,603</td>
<td>1,723</td>
<td>610</td>
<td>55%</td>
<td>17</td>
</tr>
<tr>
<td>Davis</td>
<td>336,091</td>
<td>385,800</td>
<td>428,627</td>
<td>474,028</td>
<td>510,712</td>
<td>544,958</td>
<td>208,867</td>
<td>62%</td>
<td>12</td>
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<tr>
<td>Duchesne</td>
<td>20,821</td>
<td>24,277</td>
<td>26,596</td>
<td>29,178</td>
<td>31,205</td>
<td>33,153</td>
<td>12,332</td>
<td>59%</td>
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<tr>
<td>Emery</td>
<td>10,659</td>
<td>11,550</td>
<td>12,507</td>
<td>13,345</td>
<td>14,226</td>
<td>15,364</td>
<td>4,706</td>
<td>44%</td>
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<tr>
<td>Garfield</td>
<td>5,164</td>
<td>5,845</td>
<td>6,405</td>
<td>6,977</td>
<td>7,083</td>
<td>7,509</td>
<td>2,345</td>
<td>45%</td>
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<tr>
<td>Grand</td>
<td>9,757</td>
<td>11,182</td>
<td>12,203</td>
<td>13,266</td>
<td>14,139</td>
<td>14,794</td>
<td>5,037</td>
<td>52%</td>
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<tr>
<td>Iron</td>
<td>49,406</td>
<td>59,900</td>
<td>67,803</td>
<td>74,812</td>
<td>81,589</td>
<td>89,599</td>
<td>40,193</td>
<td>81%</td>
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</tr>
<tr>
<td>Juab</td>
<td>11,071</td>
<td>15,789</td>
<td>19,925</td>
<td>23,307</td>
<td>26,498</td>
<td>30,069</td>
<td>18,998</td>
<td>172%</td>
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<tr>
<td>Kane</td>
<td>7,271</td>
<td>8,684</td>
<td>9,611</td>
<td>10,179</td>
<td>10,736</td>
<td>11,446</td>
<td>4,175</td>
<td>57%</td>
<td>15</td>
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<tr>
<td>Millard</td>
<td>13,104</td>
<td>14,403</td>
<td>15,619</td>
<td>16,605</td>
<td>17,435</td>
<td>18,617</td>
<td>5,514</td>
<td>42%</td>
<td>28</td>
</tr>
<tr>
<td>Morgan</td>
<td>11,080</td>
<td>15,613</td>
<td>19,349</td>
<td>21,357</td>
<td>22,678</td>
<td>24,605</td>
<td>13,525</td>
<td>122%</td>
<td>5</td>
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<tr>
<td>Platte</td>
<td>1,631</td>
<td>1,699</td>
<td>1,872</td>
<td>1,938</td>
<td>1,995</td>
<td>2,149</td>
<td>518</td>
<td>32%</td>
<td>29</td>
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<tr>
<td>Rich</td>
<td>2,353</td>
<td>2,535</td>
<td>2,773</td>
<td>2,992</td>
<td>3,158</td>
<td>3,380</td>
<td>1,027</td>
<td>44%</td>
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<tr>
<td>Salt Lake</td>
<td>1,094,650</td>
<td>1,249,961</td>
<td>1,361,099</td>
<td>1,470,574</td>
<td>1,594,804</td>
<td>1,693,513</td>
<td>598,863</td>
<td>55%</td>
<td>18</td>
</tr>
<tr>
<td>San Juan</td>
<td>15,902</td>
<td>17,932</td>
<td>19,330</td>
<td>20,562</td>
<td>21,775</td>
<td>23,316</td>
<td>7,413</td>
<td>47%</td>
<td>23</td>
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<tr>
<td>Sanpete</td>
<td>29,088</td>
<td>33,696</td>
<td>38,580</td>
<td>41,682</td>
<td>44,609</td>
<td>49,590</td>
<td>20,502</td>
<td>70%</td>
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<tr>
<td>Sevier</td>
<td>21,238</td>
<td>24,494</td>
<td>26,896</td>
<td>28,879</td>
<td>30,774</td>
<td>32,802</td>
<td>11,563</td>
<td>54%</td>
<td>20</td>
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<tr>
<td>Summit</td>
<td>39,278</td>
<td>46,404</td>
<td>54,706</td>
<td>60,644</td>
<td>65,624</td>
<td>70,750</td>
<td>31,472</td>
<td>80%</td>
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</tr>
<tr>
<td>Tooele</td>
<td>63,262</td>
<td>83,922</td>
<td>102,338</td>
<td>115,463</td>
<td>125,291</td>
<td>134,272</td>
<td>71,010</td>
<td>112%</td>
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</tr>
<tr>
<td>Uintah</td>
<td>37,396</td>
<td>42,077</td>
<td>45,978</td>
<td>50,609</td>
<td>54,253</td>
<td>57,766</td>
<td>20,370</td>
<td>54%</td>
<td>19</td>
</tr>
<tr>
<td>Utah</td>
<td>585,694</td>
<td>768,346</td>
<td>968,498</td>
<td>1,192,304</td>
<td>1,396,997</td>
<td>1,620,246</td>
<td>1,034,552</td>
<td>177%</td>
<td>3</td>
</tr>
<tr>
<td>Wasatch</td>
<td>28,613</td>
<td>42,027</td>
<td>54,218</td>
<td>64,526</td>
<td>73,042</td>
<td>82,018</td>
<td>53,406</td>
<td>187%</td>
<td>2</td>
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<tr>
<td>Washington</td>
<td>154,602</td>
<td>219,019</td>
<td>286,768</td>
<td>355,549</td>
<td>429,295</td>
<td>508,952</td>
<td>354,350</td>
<td>229%</td>
<td>1</td>
</tr>
<tr>
<td>Wayne</td>
<td>2,725</td>
<td>2,985</td>
<td>3,363</td>
<td>3,593</td>
<td>3,792</td>
<td>4,130</td>
<td>1,405</td>
<td>52%</td>
<td>22</td>
</tr>
<tr>
<td>Weber</td>
<td>242,737</td>
<td>286,593</td>
<td>317,344</td>
<td>344,025</td>
<td>368,635</td>
<td>389,334</td>
<td>146,597</td>
<td>60%</td>
<td>13</td>
</tr>
<tr>
<td>State Total</td>
<td>2,997,404</td>
<td>3,615,036</td>
<td>4,178,317</td>
<td>4,745,057</td>
<td>5,285,767</td>
<td>5,827,810</td>
<td>2,830,406</td>
<td>94%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Kem C. Gardner Policy Institute 2015-2065 State and County Projections
CONVERGENCE OF THE PHYSICAL, DIGITAL, AND BIOLOGICAL WORLDS (WORLD ECONOMIC FORUM)

The Fourth Industrial Revolution
30 TECHNOLOGIES OF THE NEXT DECADE

#1 Artificial Intelligence
AI / Machine Learning / Deep Learning

#2 Internet of Things
IoT, IIOT, Sensors & Wearables

#3 Mobile/Social Internet
Advancements - Search/Social/Messaging/Livestreams

#4 Blockchain
Distributed Ledger Systems, Apps, Infrastructure, Technologies + Predictive Analytics

#5 Big Data

#6 Automation
Information, Task, Process, Machine, Decision & Action

#7 Robots
Cons./Comm./Indus. Robots, Drones & Autonomous Vehicles

#8 Immersive Media
- #VR/ #AR/ #MR/ 360°/ Video/Gaming

#9 Mobile Technologies
Infrastructure, networks, standards, services & devices

#10 Cloud Computing,
SaaS, IaaS, PaaS & MESH Apps

#11 3D Printing
Additive Manufacturing & Rapid Prototyping

#12 CX
Customer Journey, Experience Commerce & Personalization

#13 Energy Tech
Efficiency, Energy Storage & Decentralized Grid

#14 Cybersecurity
Security, Intelligence Detection, Remediation & Adaptation

#15 Voice Assistants
Interfaces, Chatbots & Natural Language Processing

#16 Nanotechnology
Computing, Medicine, Machines + Smart Dust

#17 Collaborative Tech.
Crowd, Sharing, Workplace & Open Source Platforms & Tools

#18 Health Tech
Advanced Genomics, Bionics & Health Care Tech.

#19 Human-Computer Interaction
Facial/Gesture Recognition, Biometrics, Gaze Tracking

#20 Geo-spatial Tech

#21 Advanced Materials
Composites, Alloys, Polymers, Biomimicry, Nanomanufacturing

#22 New Touch Interfaces
Touch Screens, Haptics, 3D Touch, Paper, Feedback & Exoskeletons

#23 Wireless Power

#24 Clean Tech.
Bio-/Enviro-Materials + Solutions, Sustainability, Treatment & Efficiency

#25 Quantum Computing
+ Exascale Computing

#26 Smart Cities
+ Infrastructure & Transport

#27 Edge/Computing
+ Fog Computing

#28 Faster, Better Internet
Broadband incl. Fiber, 5G, Li-Fi, LPN and LoRa

#29 Proximity Tech
Beacons, RFID, Wi-Fi, Near-Field Communications & Geofencing

#30 New Screens
TVs, Digital Signage, OOH, MicroLEDs & Projections
THE PROBLEM

12,000 - 25,000

- Number of open tech jobs within 300 miles of St. George/DSU with an average salary of $80,000
Dixie State University is an open, inclusive, comprehensive, polytechnic university featuring active and applied learning to advance students’ knowledge and skills while fostering competent, resilient, lifelong learners to succeed in their careers and personal lives as creators, innovators, and responsible citizens.
ELEMENTS OF THE MISSION

OPEN INCLUSIVE COMPREHENSIVE POLYTECHNIC
PRINCIPLES OF OPEN EDUCATION

- Commitment to sharing, collaborating, transparency, and community
- Open access
- Open educational resources
- Open educational practices
- Recognition of formal and non-formal learning
- Collaboration with networks and community
- Open science, scholarship, innovation, & entrepreneurship
PRINCIPLES OF INCLUSION

- Equitable access and opportunity for diverse individuals to work, learn, and succeed
- Recruitment and retention of diverse faculty, staff, & students
- Inclusive pedagogy/andragogy
- Enabling of institutional support services
- Engagement with community services and human networks
ELEMENTS OF THE MISSION

PRINCIPLES OF COMPREHENSIVE

- Unique teaching and laboratory facilities
- Breadth of undergraduate programs
- Graduate programs and professional schools
- Diverse programs, initiatives, and people
- Community engagement
ELEMENTS OF THE MISSION

PRINCIPLES OF POLYTECHNIC

- Active and applied learning
- Career focus
- Authentic learning through industry partnerships
- Integrated liberal arts and science with STEM intensive programming
DOES DSU’S MISSION MEET THE DEFINITION OF A REGIONAL UNIVERSITY?
4.2. Regional Universities: The regional university’s role is to provide open-access academic and career and technical education, undergraduate associate and baccalaureate programs and select graduate degree programs to fill regional or state workforce demands. Career and Technical Education programs are designed to meet workforce needs, lead to a certificate or degree, and include general education coursework. Articulation agreements allow students to transfer seamlessly from institutions offering Technical Education to CTE and academic pathways. Regional universities emphasize teaching, scholarly, and creative achievements that complement pedagogy, learning, and community service. The institution is a leading contributor to the quality of life and economic development at the local and state levels. Student success is supported through developmental programs and services associated with a comprehensive community college.
COULD OTHER SCHOOLS IN UTAH BECOME POLYTECHNICS?
POLYTECHNIC MODEL STRATEGIC INITIATIVES

- Modify all curricular and co-curricular programs to align with the four tenets of the mission (10 strategies)
- Develop or modify programs to be career-focused and integrate with career services (10 strategies)
- Implement flexible credentialing that supports the recognition and certification of formal and non-formal learning through academic credits, stacked credentials, customized micro-credentials, digital badges, and competency-based credits (10 strategies)
CALIFORNIA SYSTEM ENCOURAGES HUMBOLDT STATE UNIVERSITY TO BECOME STATE’S THIRD POLYTECHNIC UNIVERSITY

“ I AM A BIG SUPPORTER OF CAL POLYS. WE HAVE TWO; WE WANT TO CREATE A THIRD.”

Gov. Gavin Newsom

“ THIS IS AN INCREDIBLE, TRANSFORMATIVE OPPORTUNITY.”

HSU President Tom Jackson, Jr.
WILL A POLYTECHNIC MISSION EXCLUDE THE LIBERAL ARTS MAJORS?

- We will be a comprehensive polytechnic University:
  - Cal Poly
  - Florida Polytechnic University
  - Virginia Tech
  - Kansas State University Polytechnic
  - Texas Tech

- Polytechnics have strong liberal art foundations
POLYTECHNIC WORKS FOR ALL MAJORS

- BA/BS Applied Sociology
- BS Digital Film
- Master of Technical Writing and Digital Rhetoric
- Certificate in Piano Pedagogy
DO WE HAVE RESOURCES TO BUILD A POLYTECHNIC UNIVERSITY?

- This is where the jobs of the future are
- We must meet workforce demands
- Instructional method is in place
- Most affordable university (111 programs)
IS THERE OVERLAP WITH THE TECH COLLEGE SYSTEM?

- Increases collaboration and opportunities
- No intention for overlap
- We will eliminate overlap whenever necessary
DIXIE TECHNICAL COLLEGE/ DSU ARTICULATIONS

- General Technology w/Business Emphasis, AAS
- General Technology w/Design Emphasis, AAS
- General Technology w/Information Technology Emphasis, AAS
- Digital Media Design
- Drafting & Design
- Information Technology
- Medical Assisting
- Culinary Arts
- Automotive Technician
- Collision Repair
- Diesel Technician
- Industrial Automation Technician
- CNC Machining
- Operations Management
- Welding
- Pharmacy Technician
- Information Technology
- Digital Media Design
- Drafting & Design
ON-AND OFF-RAMPS IN AN OPEN-POLYTECHNIC UNIVERSITY FOR MORE STUDENTS

DSU ACADEMIC PROGRAMS

CERTIFICATES | ASSOCIATES | BACCALAUREATE | CPL | MICRO-CREDENTIALS | MASTER'S

DIXIE TECH | WORK | ACADEMIC PREP. C | WORK | WORK | WORK

ACADEMIC PREP. B | WORK | ACADEMIC PREP. D | WORK
FOUR-YEAR • FOUR-AWARD MODEL

INDUSTRY CERTIFICATE
Certificate in Information Technology
Certificate in Design

ASSOCIATE DEGREE
60 CREDITS
AS in Information Technology
AAS in General Technology

ADVANCED INDUSTRY CERTIFICATE
Certificate in Advanced Information Technology
Certificate in Advanced Design

BACHELOR DEGREE
120 CREDITS
BS in Information Technology
BS in Design
COMPARING DIXIE TECH CERTIFICATES WITH DSU CERTIFICATES

- DSU Certificate Example:
  
  Web Design & Development (15 cr/hrs)
  - CS1410 Object Oriented Programming (3cr)
  - SE 3200 Web Application Development I (3 cr)
  - SE 3400 Human-Computer Interaction (3cr)
  - SE 4200 Web Application Development II (3 cr)
  - SE 4990 Special topics in Software Engineering (3cr)

- Offered only to matriculated DSU students
WILL THERE BE CONFUSION WITHIN THE STATE WITH A TECHNOLOGICAL UNIVERSITY AND THE TECH COLLEGE SYSTEM?

- Not having a mission focused technologic university creates the confusion
“THIS IS A ONCE IN A GENERATION OPPORTUNITY.”

Dave Elkington
Dixie State University is an open, inclusive, comprehensive, polytechnic university featuring active and applied learning to advance students’ knowledge and skills while fostering competent, resilient, lifelong learners to succeed in their careers and personal lives as creators, innovators, and responsible citizens.
THANK YOU
GO TRAILBLAZERS!