



## Engineering and Computer Technology Initiative Report

In 2001, the Legislature approved [SB61, \*Enhancements to the State Systems of Public and Higher Education\*](#), sponsored by Senator Lyle Hillyard. This legislation established the [Engineering and Computer Technology Initiative](#) within the Utah System of Higher Education with the purpose of increasing the number of students graduating from engineering, computer science, and related technology programs<sup>2</sup>.

Since then, key provisions of [SB61](#) have been addressed including:

- Establishing a goal to triple the number of graduates from USHE institutions in engineering, computer science, and related technology.
- Directing the USHE Board of Regents to establish rules providing the criteria for those fields of study that qualify as “related technology.”
- Providing supplemental funds for equipment purchases to improve the quality of instructional programs in engineering, computer science, and related technologies.
- Establishing a student scholarship to encourage enrollment in programs included in the initiative.
- Assisting USHE institutions to hire and retain qualified faculty to teach in initiative programs.
- Increasing program capacity by funding new and renovated capital facilities, and funding for new engineering and computer science programs.
- Creating the Technology Initiative Advisory Board to make recommendations to the Regents in its administration of the initiative. The advisory board includes business and industry experts in the areas of engineering, computer science, and related technologies who are appointed by the Governor.
- Providing the requirement to report funding matches for faculty positions funded through initiative resources.

To date, \$24 million of ongoing funding, plus \$10.45 million of one-time funding, has been appropriated to support the initiative.

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<sup>1</sup> <https://le.utah.gov/~2001/htmdoc/sbillhtm/SB0061S2.htm>

<sup>2</sup> <https://ushe.edu/engineering-and-computer-technology-initiative-has-produced-nearly-40000-degrees/>

[Intent language provided by the 2017 legislature](#) requested that “recommendations for appropriation and follow up reporting on program success are to be reviewed by the Business, Economic Development, and Labor Appropriations Subcommittee and the Higher Education Appropriations Subcommittee. <sup>3</sup>” Additionally, an [annual report](#) to the USHE Board of Regents is required by statute. This document is intended to satisfy these reporting requirements.

## Appropriated Funds

The following table summarizes funding appropriated to the initiative between FY2002 and FY2020.

Engineering and Computer Technology Initiative Funding History 2002-2020			
Year	Funds Appropriated		
	Ongoing	One time	Scholarship*
2001-02	\$1,000,000	\$2,500,000	\$500,000
2002-03	\$2,000,000	\$1,000,000	\$0
2003-04	\$500,000	\$0	\$50,000
2004-05	\$500,000	\$500,000	\$0
2005-06	\$1,500,000	\$500,000	\$0
2006-07	\$500,000	\$700,000	\$0
2007-08	\$3,000,000	\$2,000,000	\$0
2008-09	\$0	\$250,000	\$0
2009-10	\$0	\$2,000,000	\$0
2010-11	\$0	\$0	\$0
2011-12	\$0	\$0	\$0
2012-13	\$2,500,000	\$0	\$0
2013-14	\$0	\$0	\$0
2014-15	\$0	\$0	\$0
2015-16	\$3,500,000	\$1,000,000	\$0
2016-17	\$0	\$0	\$0
2017-18	\$4,000,000	\$0	\$0
2018-19	\$0	\$0	\$0
2019-20	\$5,000,000	0	0
<b>Total</b>	<b>\$24,000,000</b>	<b>\$10,450,000</b>	<b>\$550,000</b>

\*In 2001, SB61 established a loan forgiveness fund to assist students in obtaining degrees in engineering and computer science. In 2009, SB105 changed the loan forgiveness program to a scholarship program for the purpose of recruiting, retaining, and training engineering and computer science and related technology students. At that time scholarship funding was \$39,200 annually. In FY13 an additional \$300,000 of ongoing scholarship funding was allocated to institutions by the Board of Regents from the FY13 \$2,500,000 appropriation. This \$300,000 of scholarship funding did not roll into the previously legislated scholarship funding program but went directly to institutions.

## Degree Completion Results

Although the initiative has been underway since 2001, base year comparisons measured graduation counts since FY2018, the last year data were used to determine the most recent appropriation as provided by the 2019 Legislature.

<sup>3</sup> <https://le.utah.gov/~2017/bills/static/SB0003.html>

Comparison of Degree Completions for the Engineering and Computer Technology Initiative								
	FY2018 (Base Year)			FY2019			Change from FY2018 to FY2019	
	CS	Eng.	Total	CS	Eng.	Total	Change	Percent Change
<b>Total</b>	1553	1730	3283	1674	1860	3534	251	7.65

For reporting purposes, programs that qualify for the initiative are grouped into two categories, namely, engineering and computer science. The 1,860 engineering degrees awarded in FY2019 is more than double the 862 engineering degrees awarded in FY2000, and the 1,674 computer science degrees awarded in FY2019 is more than triple the 513 computer science degrees awarded in FY2000. Over time there has been a consistent increase in total number of degrees awarded in the targeted areas. Since the initiative began, a total of 41,427 computer science and engineering degrees have been awarded. This initiative has resulted in a positive cumulative impact for the state. It is believed that this targeted investment has made a significant difference for Utah.

The TIAB will use information provided in this report to determine possible future requests for legislative funding and to recommend allocation of any additional funding received in accordance with legislative intent that specifies funds should be allocated based on graduation increases in targeted areas and in high demand occupations.

## Matching Funds

Utah Code 53B-6-105.9 requires institutions to match ongoing funds appropriated to the initiative that are used for faculty positions. Beginning with funding appropriated for FY2013, institutions have submitted reports that demonstrate compliance with the matching requirement. Based on information from these reports, the ongoing appropriations awarded in FY2013, FY2016, FY2018, and FY2020 were matched by the USHE institutions\*. The following tables provide matching funds information by institution.

Matching Funds Report- Summary				
Institution	FY2013 Ongoing Appropriations Matched by Institutions	FY 2016 Ongoing Appropriations Matched by Institutions	FY 2018 Ongoing Appropriations Matched by Institutions	FY 2020 Ongoing Appropriations Matched by Institutions
<b>University of Utah</b>	\$600,000	\$1,217,809	\$1,540,000	\$2,600,000
<b>Utah State University</b>	\$270,000	\$515,000	\$900,000	\$785,000
<b>Weber State University</b>	\$88,000	\$440,000	\$840,000	\$400,000
<b>Southern Utah University*</b>	Did not receive funding in FY2013	Did not receive funding for faculty positions in FY2016	\$60,000	\$60,000
<b>Snow College</b>	Did not receive funding in FY2013	\$113,000	\$60,000	\$30,000
<b>Dixie State University</b>	Did not receive funding in FY2013	\$175,000	\$60,000	\$375,000
<b>Utah Valley University</b>	\$370,000	\$375,000	\$480,000	\$700,000

Salt Lake Community College	\$72,000	\$57,000	\$60,000	\$50,000
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Matching Funds Detail for FY2020					
Institution	Faculty Type	Department	Appropriated	Match	Total
University of Utah	Assistant Professor	Biomedical Engineering	\$140,000	\$140,000	\$280,000
	Assistant Professor	Biomedical Engineering	\$140,000	\$140,000	\$280,000
	Assistant Professor	Biomedical Engineering	\$140,000	\$140,000	\$280,000
	Assistant Professor	Chemical Engineering	\$140,000	\$140,000	\$280,000
	Assistant Professor	Chemical Engineering	\$140,000	\$140,000	\$280,000
	Assistant Professor	Chemical Engineering	\$145,000	\$145,000	\$290,000
	Assistant Professor	Civil Engineering	\$135,000	\$135,000	\$270,000
	Assistant Professor	Civil Engineering	\$135,000	\$135,000	\$270,000
	Assistant Professor	Civil Engineering	\$135,000	\$135,000	\$270,000
	Assistant Professor	Computer Science	\$135,000	\$135,000	\$270,000
	Assistant Professor	Computer Science	\$135,000	\$135,000	\$270,000
	Assistant Professor	Computer Science	\$135,000	\$135,000	\$270,000
	Assistant Professor	Mechanical & Industrial Engineering	\$135,000	\$135,000	\$270,000
	Assistant Professor	Mechanical & Industrial Engineering	\$135,000	\$135,000	\$270,000
	Assistant Professor	Material Science	\$135,000	\$135,000	\$270,000
	Assistant Professor	Material Science	\$135,000	\$135,000	\$270,000
	Assistant Professor	Material Science	\$135,000	\$135,000	\$270,000
	Assistant Professor	Electrical Engineering	\$135,000	\$135,000	\$270,000
	Assistant Professor	Electrical Engineering	\$135,000	\$135,000	\$270,000
	<b>Total</b>			\$2,600,000	\$2,600,000
Utah State University	Assistant Professor	Engineering Education	\$129,900	\$129,900	\$259,800
	Assistant Professor	Electrical & Computer Engineering	\$129,900	\$129,900	\$259,800
	Assistant Professor	Biological Engineering	\$129,900	\$129,900	\$259,800
	Assistant Professor	Electrical & Computer Engineering	\$68,200	\$68,200	\$136,400

	Assistant Professor	Computer Science	\$136,000	\$136,000	\$272,000
	Assistant Professor (0.5 FTE)	Computer Science	\$68,000	\$68,000	\$136,000
	Assistant Professor	Computer Science	\$123,100	\$123,100	\$246,200
<b>Total</b>			<b>\$785,000</b>	<b>\$785,000</b>	<b>\$1,570,000</b>
<b>Weber State University</b>	Assistant Professor	School of Computing	\$80,000	\$80,000	\$160,000
	Assistant Professor	School of Computing	\$80,000	\$80,000	\$160,000
	Assistant Professor	School of Computing	\$80,000	\$80,000	\$160,000
	Assistant Professor	School of Computing	\$80,000	\$80,000	\$160,000
	Assistant Professor	Electrical and Computer Engineering	\$80,000	\$80,000	\$160,000
<b>Total</b>			<b>\$400,000</b>	<b>\$400,000</b>	<b>\$800,000</b>
<b>Southern Utah University</b>	Associate Professor	Computer Science & Info Systems	\$60,000	\$60,000	\$120,000
<b>Total</b>			<b>\$60,000</b>	<b>\$60,000</b>	<b>\$120,000</b>
<b>Snow College</b>	Assistant Professor	Engineering	\$30,000	\$30,000	\$60,000
<b>Total</b>			<b>\$30,000</b>	<b>\$30,000</b>	<b>\$60,000</b>
<b>Dixie State University</b>	Assistant Professor	Mechanical Engineering	\$ 54,000	\$54,000	\$108,000
	Assistant Professor	Mechanical Engineering	\$ 54,000	\$54,000	\$108,000
	Assistant Professor	Computer Engineering	\$ 54,000	\$54,000	\$108,000
	Assistant Professor	Computer Engineering	\$ 54,000	\$54,000	\$108,000
	Assistant Professor	Computing and Design	\$53,000	\$53,000	\$106,000
	Assistant Professor	Computing and Design	\$53,000	\$53,000	\$106,000
	Assistant Professor	Computing and Design	\$53,000	\$53,000	\$106,000
<b>Total</b>			<b>\$375,000</b>	<b>\$375,000</b>	<b>\$750,000</b>
<b>Utah Valley University</b>	Assistant Professor	Mechanical Engineering	\$132,802		\$132,802
	Assistant Professor	Mechanical Engineering	\$132,802		\$132,802
	Assistant Professor	Civil Engineering	\$129,886		\$129,886
	Assistant Professor	Civil Engineering	\$129,886		\$129,886
	Lecturer	Civil Engineering/Pre-Engineering	\$84,039		\$84,039
	Lecturer	Mechanical Engineering/Pre-Engineering	\$90,585		\$90,585
	Assistant Professor	Mechanical Engineering		\$125,817	\$125,817
	Assistant Professor	Civil Engineering		\$125,817	\$125,817

	Assistant Professor (.67 FTE)	Computer Science		\$80,456	\$80,456
	Lecturer	Mechatronics		\$95,098	\$95,098
	Assistant Professor	Computer Science		\$136,406	\$136,406
	Assistant Professor	Computer Science		\$136,406	\$136,406
<b>Total</b>			\$700,000	\$700,000	\$1,400,000
<b>Salt Lake Community College</b>	Assistant Professor	Science, Math, & Engineering	\$50,000	\$50,000	\$100,000
<b>Total</b>			\$50,000	\$50,000	\$100,000
<b>USHE Total</b>			<b>\$5,000,000</b>	<b>\$5,000,000</b>	<b>\$10,000,000</b>

\* At the time this report was prepared institutions had identified matching funds for the FY2020 appropriation. These funds are thus included in the 2019 report.

## TIAB Membership

- John Sutherland (Chair)
  - Susan Johnson (Co-Chair)
  - Reed Brown
  - Vance Checketts
  - Roland Christensen
  - Ed Ekstrom
  - Ed Esper
  - Mark Ripke
  - Chuck Taylor
  - J. Howard VanBoerum
- Brigham Young University
  - Futura Industries (Retired)
  - Mathnasium
  - Dsco.io
  - Applied Composite Technology
  - Chateau Grande
  - Utah Capital Investment Corporation
  - Boeing
  - SyberJet Aircraft
  - VanBoerum & Frank