

January 14, 2015

MEMORANDUM

TO: State Board of Regents

FROM: David L. Buhler

SUBJECT: Report of the Technology Initiative Advisory Board to the Utah State Board of Regents

Issue

The 2001 Legislature approved SB61: *Enhancements to the State Systems of Public and Higher Education*. This legislation established an Engineering and Computer Science Initiative within the Utah System of Higher Education (USHE), with the goal to increase the number of students graduating from engineering, computer science, and related technology programs. The legislation created the Technology Initiative Advisory Board (TIAB), appointed by the Governor that makes an annual report to the Board of Regents. The attached document provides this year's report from the TIAB.

Background

Key highlights noted in the report include:

1. During the last 13 years, the Engineering and Computer Science Initiative has been successful in increasing the number of graduates in targeted areas.
2. During FY14, 1,321 engineering degrees were awarded compared to 862 in 2000 (53% increase), and in computer science 958 degrees were awarded compared to 513 in 2000 (87% increase).
3. Since the initiative began, a total of 26,547 computer science and engineering degrees have been awarded.
4. The TIAB requested that Information Systems be added to the initiative and that the base year for comparison to be used for legislative funding requests be changed from FY00 to FY11.
5. Total engineering and computer science degrees awarded in FY14 was 2,279 compared to 2,133 in FY11, representing an increase of nearly 7 percent from the new base year.

Policy Issues

There are no policy issues associate with this report.

Commissioner's Recommendation

This report is for information to the Board of Regents. No action is required.

David L. Buhler
Commissioner of Higher Education

DLB/BKC
Attachment



Engineering and Computer Science Initiative Annual Report November 2014

The 2001 Legislature approved SB61 *Enhancements to the State Systems of Public and Higher Education*, sponsored by Senator Lyle Hillyard. This legislation established an Engineering and Computer Science Initiative within the Utah System of Higher Education (USHE) with the intent to increase the number of students graduating from engineering, computer science, and related technology programs.

Specifically, the following key provisions of SB61 have been accomplished:

1. Established a goal to triple the number of graduates from USHE institutions in engineering, computer science, and related technology.
2. Directed the Regents to establish rules providing the criteria for those fields of study that qualify as "related technology."
3. Provided supplemental funds for equipment purchases to improve the quality of instructional programs in engineering, computer science, and related technologies.
4. Established a student scholarship to encourage enrollment in programs included in the initiative.
5. Assisted USHE institutions to hire and retain qualified faculty to teach in initiative programs.
6. Increased program capacity by funding new and renovated capital facilities, and funding for new engineering and computer science programs.
7. Created a Technology Initiative Advisory Board to make recommendations to the Regents in its administration of the initiative. The advisory board includes individuals appointed by the Governor from business and industry who have expertise in the areas of engineering, computer science, and related technologies.

To date, \$11.5 million of on-going funding plus \$10M of one-time funding have been appropriated to support the initiative. The following table gives a summary of the funding between FY02 and FY15.

Appropriated Funds

Engineering and Computer Science Initiative Funding History 2002-2014			
Year	Funds Appropriated		
	Ongoing	One time	Scholarship ¹
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
Total	11,500,000	9,450,000	550,000

One measure of the initiative's success is the transfer of students from one institution to another as students complete degree requirements. Based on a study conducted of FY13 computer science and engineering degrees awarded, approximately 36% were awarded to students who transferred credit from other USHE institutions. Each USHE institution contributed to this transfer impact. This data suggests that each USHE institution contributes to degree completion by enabling students to earn credits that are part of their overall educational pathway. This is evidence that transfer policies within the USHE impact students positively and serve to meet key state objectives in enabling students to complete their educational goals.

During FY14 a question arose concerning inclusion of information systems degrees at the University of Utah and Utah State University (USU) as part of this initiative. Previously these degrees had not been counted as part of this initiative at either of these institutions. While USU reported them in a computer science category, it did not include them in the numbers toward the initiative. However, due to a reporting change that occurred at the University of Utah, its information systems programs were reflected in the computer science category effective with FY14 data. With both of these institutions now reporting information systems within computer science, the TIAB considered whether or not these programs should be included in the initiative. Ultimately, the TIAB requested that these programs be reflected in the initiative's total degree completion count. Accordingly, FY14 data reflects this change.

¹ 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 on-going 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.

Fiscal Year 2011 was the last year used to assess data to support a \$2.5 million funding increase that was provided by the legislature for FY13. The TIAB suggested additional funding should be appropriated after the number of graduates increased by 150. Accordingly, the TIAB suggested that FY11 be used as a base year to support additional requests to the legislature for funding. The chart below compares FY11 and FY14 data. To provide a valid comparison, FY11 data has been adjusted to include information systems degree completions at USU and the U of U. The TIAB will use this data to consider if it will pursue a legislative funding request for the upcoming legislative session.

Comparison of FY11 and FY14 Degree Completions for the Engineering and Computer Science Initiative

	FY11 (Base Year)			FY14			Change from FY11	
	Computer Science	Engineering	Total	Computer Science	Engineering	Total	Change	Percent Change
Total	755	1,378	2,133	958	1,321	2,279	146	6.84

Over the life of the initiative, there has been a significant impact on degrees awarded in engineering and computer science. The 1,321 engineering degrees awarded in FY14 compares to 862 awarded in 2000 (53% increase), and the 958 computer science degrees awarded in FY14 compare to 513 awarded in 2000 (87% increase). 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 26,547 computer science and engineering degrees have been awarded. The initiative has resulted in a positive cumulative impact for the state. It is believed that a modest investment of state dollars has made a significant difference for Utah.

Based on assessment by the TIAB, the Engineering and Computer Science Initiative has been one of the most successful legislative efforts of the past decade. With participation including industry, higher education, and the state, the initiative has proven to be a model program with strong accountability and demonstrable results.

Technology Initiative Advisory Committee Members

- John Sutherland (Chair) Brigham Young University
- Susan Johnson (Co-Chair) Futura Industries
- Richard Anderson Hewlett Packard, Retired
- Reed Brown Local Digital Insider
- Roland Christensen Applied Composite Technology
- Ed Ekstrom Yorke Capital
- Chuck Taylor Metalcraft Technologies
- J. Howard VanBoerum VanBoerum & Frank