The STEM+CS Teacher Production Gap

P-12 STEM+CS teacher development in Georgia

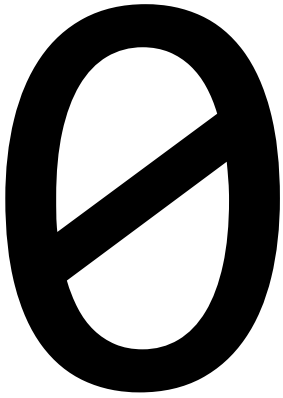
Ed Barker

Graduate Student, School of Public Policy

Georgia Institute of Technology

Executive Summary

Introduction



STEM + CS

Science

Technology

Engineering

Math

Computer Science

The combined total all twenty-six public universities of USG (The University System of Georgia), and all private universities in Georgia are currently producing ZERO teachers for K-12 teaching in the fields of Technology, Engineering, and Computer Science. Furthermore, GaPSC, the Georgia Professional Standards Commission rate of teacher certifications, for teachers from all sources, for these same fields are effectively zero.

*source: University System of Georgia, Academic Data Mart and/or Student Information Reporting System (CIP Codes: 13.1309, 13.1319, 13.1320, 13.1316, 13.1311, 13.1322, 13.1322, 13.1329); Georgia Professional Standards Commission

Introduction

STEM+CS, Science, Technology, Engineering, Math, and Computer Science is crucial to the success of our country. Nationally, billions of dollars and countless hours of effort are invested in STEM+CS education and initiatives.

K-12 students today are exposed to and are pursuing STEM+CS interests and activities at a rate that is unprecedented in history. Corporations, foundations, and school districts are making investments in infrastructure, and activities that support student engagement and STEM+CS learning. Popular culture, social media, and television shows present STEM+CS activities in a visible and meaningful way. STEM+CS mentoring organizations such as corporations, foundation and other advocacy groups work to inspire and motivate young students into STEM+CS pursuits.

High school student interest in pursuing STEM+CS careers is high. Students pursuing engineering and computer science related post-secondary studies is increasing and becoming increasingly competitive. At the high school level, the implementation of College and Career Academies, and STEM+CS oriented high schools have increased the demand for teachers that can teach courses in technology, engineering, advanced manufacturing, cybersecurity, information technology and computer science. Interest in these 21st-century disciplines continues to grow amongst students, parents, and school administrators and districts. At the same time that interest and activities in STEM+CS fields have increased; the development of a robust teacher pipeline has not occurred. This problem is not new.

Two of the most critical issues in American education today are the issues of developing human capital for teaching, and governance in education. Governance is hotly debated, weighing the merit of public versus private versus charter schools. Debates rage about curriculum, standards, and testing. Historically, focus has been on what schools and teachers do, and student performance. Much less attention has been paid in how we create robust ecosystems for teacher development. The issue of governance in education is connected to how we develop human capital for teaching. The governance of our school is mostly delegated to the lowest level possible, in the American tradition of local control of schools and education. This philosophy is reflective of the founding of the United States, and the implementation of the 10th Amendment, powers reserved to the states.

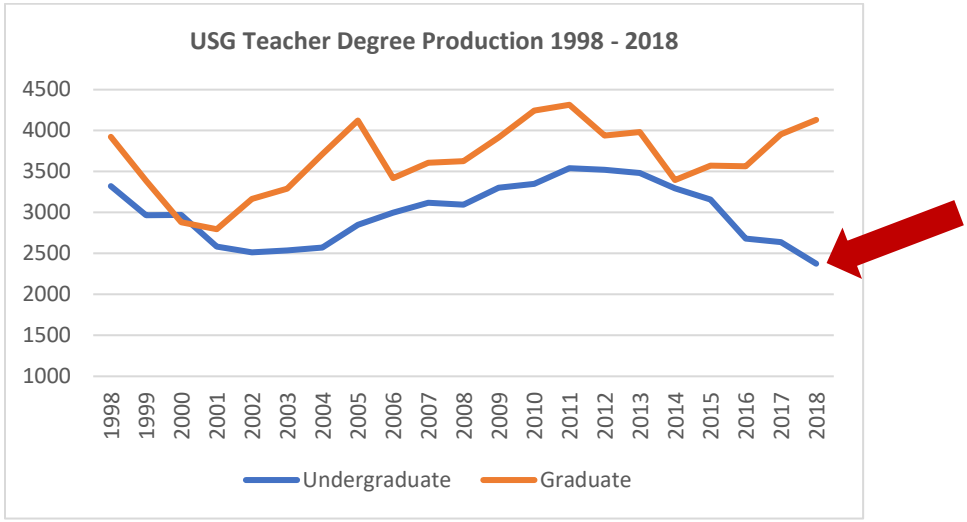
In 1952, President Dwight Eisenhower, in response to a rapidly changing global national security climate, declared it a national priority to improve the scientific, engineering and technological capacity of the United States. He pressed the Federal government into service, pursuing efforts to support the development of a new generation of STEM teacher. This effort included the creation of the National Science Foundation. Every President from Eisenhower through Obama has worked to support STEM teacher development. The Federal effort to advance education, and teacher development and governance, is limited by the Constitution.

To date, the United States has yet to solve the problem of creating a robust system that will produce high-quality STEM+CS teachers in sufficient quantity to meet the demands of the 21st Century, 4th Industrial Revolution economy.

Georgia is producing new teachers at the lowest rate in over 20 years!

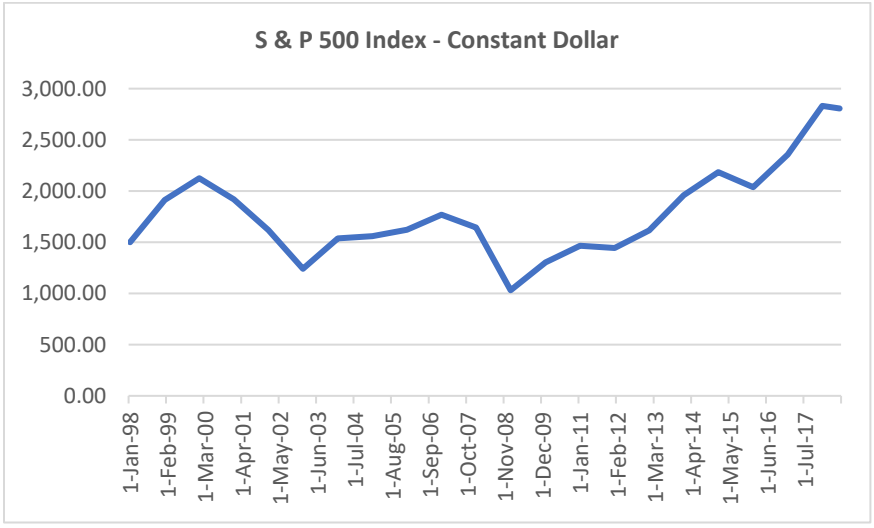
At the same time, the number of graduate degrees granted is at a near peak, presumably as teachers are seeking professional development and increased pay.

The chart below, in blue, is a plot of the production of new, undergraduate teachers by USG. The plot in brown is the production of graduate degrees, masters, educational specialists, and doctorates.



Compare the teacher production rate with the Standard and Poor's 500 Index, as a measure of economic success in the general economy. Note the following: 1) the decline after the 9-11 incident, 2) the credit market freeze in 2009, and 3) the improvement from 2009 to present.

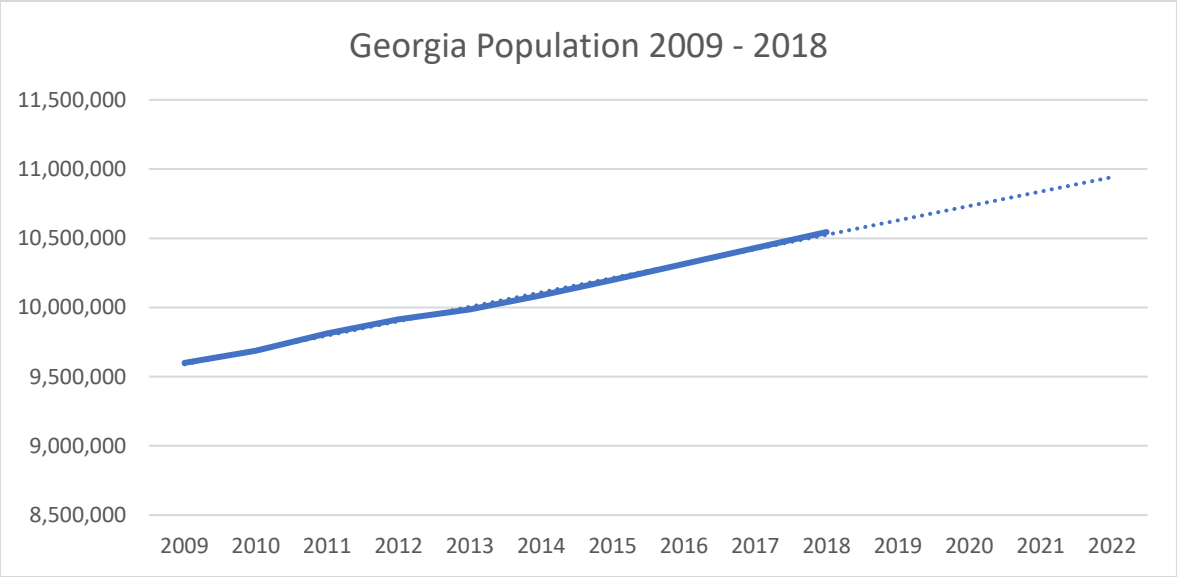
The crash of 2009 and subsequent budget cuts, plus the improvements in the general economy correlate with the exodus from teaching.



Discussion and Relevance of this Issue

The State of Georgia has a vibrant economy. The state economy is strong in Aerospace, Advanced Manufacturing, Information and Cybersecurity, FinTech, Defense, Entertainment, and Life Sciences, to name a few sectors. The state consistently is recognized as being a top choice in supporting business, and economic development.

Georgia is widely recognized as a leader in many areas and is a destination for people wanting to improve their life. According to the American Enterprise Institute's Norman Ornsteinby 2040, 1/2 of the population will live in 8 states, including Georgia. According to the Georgia Governor's Office of Planning and Budget, Performance Management Office Report entitled "Georgia 2030, Population Projections" the state population will increase from 10.4 Million in 2017 to 14.7 million in 2030. This is a 41% increase over a 13 year period.



How is Georgia going to support the current robust economic development initiatives and projected population growth without an ample teacher supply? Note that from 2010 to 2018, USG teacher production of new undergraduate teachers fell by nearly 1/3. In 2010 USG delivered 3,347 new BS and BA degreed teachers and in 2018 only 2,293 new teachers, a 31.5 % decrease.

As we have entered the 21st century the world has changed dramatically. The 4th industrial revolution is upon us and driving change at an unprecedented rate, accelerated by the development and implantation of embedded computers, and other digital technologies across a vast spectrum of activities.

Since President Eisenhower called for improving what we now call STEM, CS, and CTE education in 1952 the world has dramatically changed. Air travel has been perfected, with over 100,000 commercial flights daily, with over 2/3 million people in the air at any moment of the day. Global communications are perfected, with video, audio, text, and phone messages moving across the planet in milliseconds. Advanced manufacturing has transformed the workplace. Artificial intelligence applications are invading

all domains. Advances in healthcare, driven by engineeri=-ng and scientific advance, are providing healthcare solutions that were once the domain of dreams and science fiction. We can put advanced robots on Mars, nearly 34 million miles away. The Mars rovers Spirit and Opportunity were sent to Mars with a 90 day expected useful lifetime. 14 years later, they are still in use conducting scientific discovery. Here on earth, the capability and lifetime of today's automobiles and electronics are modern miracles compared to the technology of 50 years ago. For all the advances made in our society, the ability to create and sustain a robust teacher pipeline has not advanced to any significant degree.

Despite the failure of the ability to create a robust teacher pipeline, there is some good news.

Student interest in STEM, CTE, and CS activities and careers are at an all-time high. The world's largest STEM competition for students is FIRST, a non-profit educational organization, with four programs serving K-12 students in after-school programs that inspire students to pursue STEM, CTE, CS-related activities. In Georgia, there are now over 1,000 K-12 student teams in FIRST. Worldwide there are over 61,000 teams, in 86 countries, serving over 515,000+ students.

There are many other organizations to engage and support student interest in STEM and computing activities and interests. Support comes from non-profits, corporate partners of every description, and organizations such as the Department of Defense. Code.org is an example of a non-profit that supports computer science education. There is an all hands-on-deck approach to advancing and supporting student STEM education initiatives. All hands except for colleges of education, not only in Georgia but nationally. In defense of the universities, they are constrained by resources. One resource is time, space and money. More importantly, the resource is a dearth of knowledgeable people that can precisely address the issues and implement a robust teacher development pipeline.

Because of efforts of many people, including organizations such as FIRST, code.org, Science Olympiad, and other activities, corporate and foundation partners, and an existing pool of energetic teachers, progress is being made. In Georgia, USG produced in 2010 only 1,693 engineers with BS degrees. In AY 2018, USG produced 3,110 new BS degreed engineers, a stunning 84% increase. More impressively is the increase in CS and IT related BS degrees conferred by USG institutions. In AY 2010 USG conferred 851 degrees and in AY2018, 2,576 degrees were conferred in CS and IT areas, a whopping 203% increase.

While this is encouraging news, we have a long way to go, as we have not yet implemented a robust teacher system, nor implemented widespread implementation of the 43 Technology, Engineering, & Computer Science classes.

Georgia's HDCI, High Demand Career Initiative is a frontline report on the types of problems we need to address in workforce development. State investment is improving the ability to deliver a modern workforce, through TCSG, USG, and other agencies. The GaDOE has addressed this issue by expanding and further development of 43 middle and high school courses that address technology, engineering, and engineering technology, and computer science needs.

An example of the breakdown is as follows. The state is now home to the National Security Agency/Central Security Service in Augusta. U.S. Army's Cyber Command (ARCYBER) Headquarters is moving to Georgia, creating close to 4,000 new jobs by 2019. On July 11, 2018, Georgia's $ 100M Georgia Cyber Center opened. Georgia's information security business cluster generates nearly $5 billion in annual revenue and is home to more than 115 companies including major players like IBM, Dell,

Verisign, and VMware AirWatch. USG institutions are establishing cybersecurity programs in the academic programs.

However, activity is uneven. Governor Deal led an effort to establish computer science, information technology, and cyber security courses and pathways in Georgia's high schools. Graduation requirements were changed, allowing a student to earn foreign language credit for computer science courses. An analysis of GaDOE courses offered in AY2016 statewide revealed that only 1.1% of students statewide had access to cybersecurity courses. While the state has made a significant and vital investment in cybersecurity initiatives, there is much left to do in K-12 education, implementing computer science and cyber security courses, and developing a robust teacher pipeline to support this activity. The most casual examination of the current environment will demonstrate that the United States is experiencing a significant attack by adversaries in the area of cybersecurity.

STEM, and CS classes in K-12 are popular. Private and non-profit sector investments and support are robust. Post-secondary pursuits in STEM and CS is growing. Schools are finding ways to muddle through and teach some STEM and CS, in spite of the lack of a robust teacher development system by colleges of education. Alternative certifications, internet resources, non-traditional pathways are providing some relief to schools. A recent analysis by Georgia Professional Standards Commission (GaPSC) reveals there are now 41 institutions in Georgia that can grant teaching credentials to persons. 21 institutions are NOT universities, and 20 are universities. This means that over ½ of teacher credentialing institutions are not universities. This prompts the question of the relevancy of colleges of education to the modern economy in producing teachers, especially STEM and CS teachers.

It is an interesting question to ask, how the economy could be affected if universities asserted themselves, engaged in these issues and developed a robust and modern teacher development pipeline?

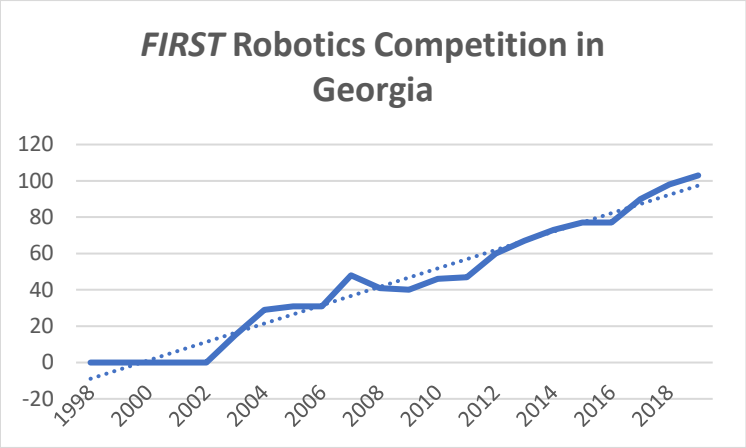
The issue of developing a robust teacher pipeline is not solely the job universities. It takes a village to make and support a teacher. From an early age, students are encouraged to enter STEM fields. Anecdotal evidence indicates there is no encouragement of encouraging students to enter STEM teaching. Instead, students are discouraged from teaching. We must change the culture and attitude toward teaching in general. It is well known that pay and work culture are critical issues to be addressed.

We are producing effectively zero teachers for technology, engineering and engineering technology, and computer science. Nor is it known that student is interested in potentially pursuing a teaching career. Based on my interviews of students, they have never considered the possibility because no one has ever asked, and if they are interested, there is no obvious entry point into a university program.

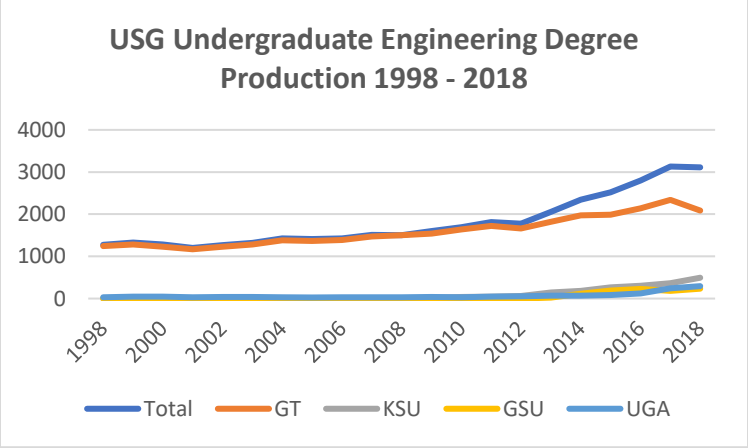
Developing a robust teacher pipeline will require an integrated effort. School districts, state-level education agencies such as GaDOE and USG institution, working with non-profit STEM initiatives and their corporate partners need to deliver the systems, and the message that will inspire, recruit and deliver the next generation of teachers.

Correlation of after-school robotics and USG engineering and CS degree production

In 2003, the non-profit, after school robotics program called ***FIRST*** Robotics Competition came to Georgia. The chart below is shows the growth of this high-school program that connects students with engineering and computer science and inspires students to pursue STEM careers.

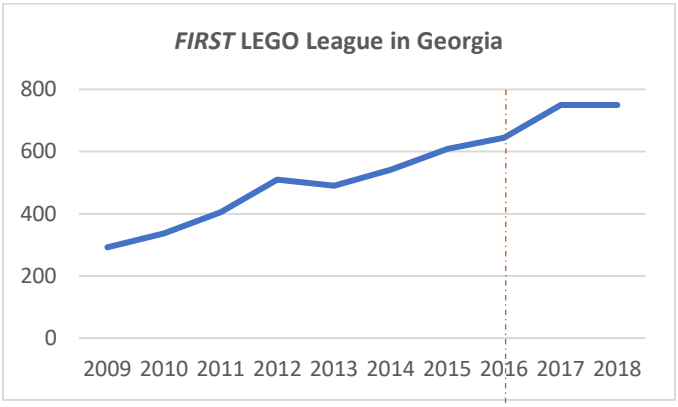


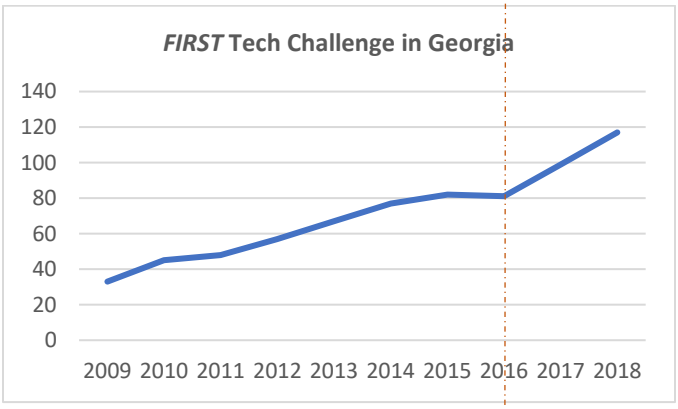
If you 'time shift' the plot of ***FIRST*** growth in Georgia, to the right, you will see a correlation of the plot above, and below, the growth of BS degrees conferred in engineering. The time shift is done because high school students need to finish high school and then college.

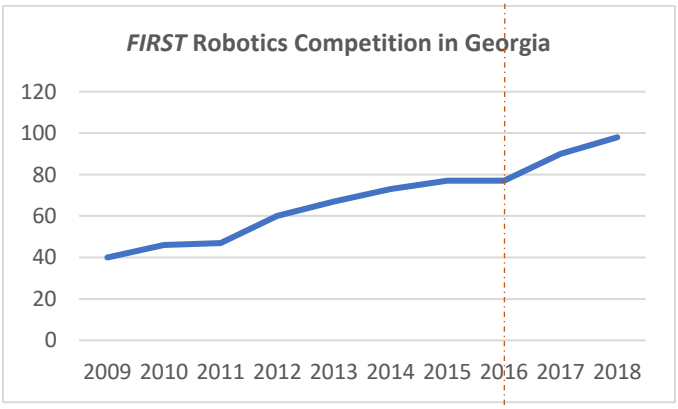


While not absolute proof, it is not a great leap to infer that increasing high school student interest in STEM would ripple into USG rates of degrees conferred.

10-year trend of *FIRST* programs in Georgia for K-12







CTSO

FIRST

FIRST LEGO League

Elementary and Middle School Robotics

FIRST Tech Challenge

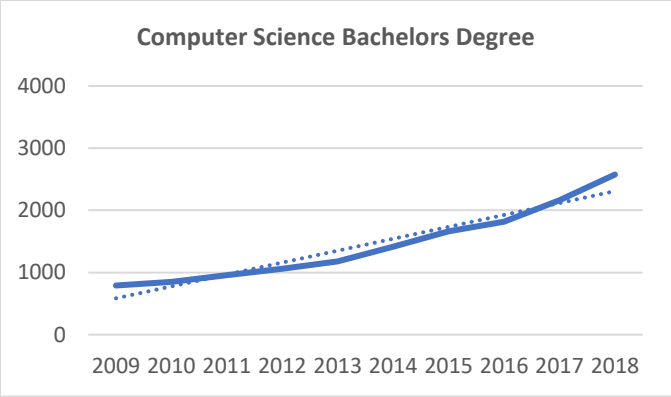
Middle and High School Robotics

FIRST Robotics Competition

High School Robotics

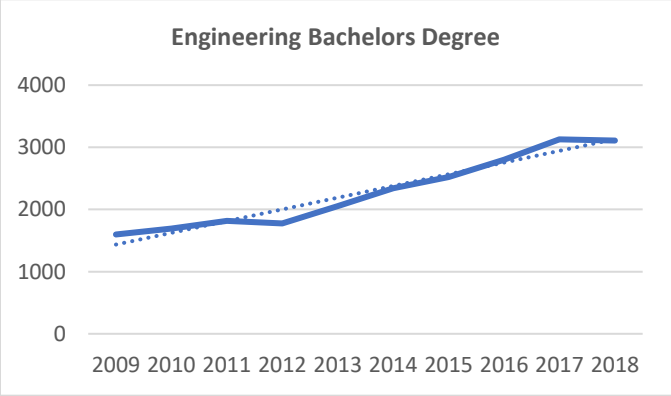
FIRST was approved as a CTSO, Career and Technical Student Organization in May, 2016. This is the 1st instance of ***FIRST*** as a CTSO in the United States. Note the uptick in

10-year trend of USG degrees conferred – undergraduate



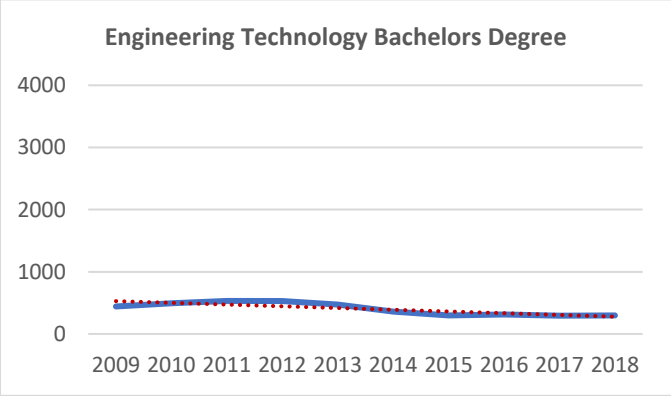
3 X

Increase

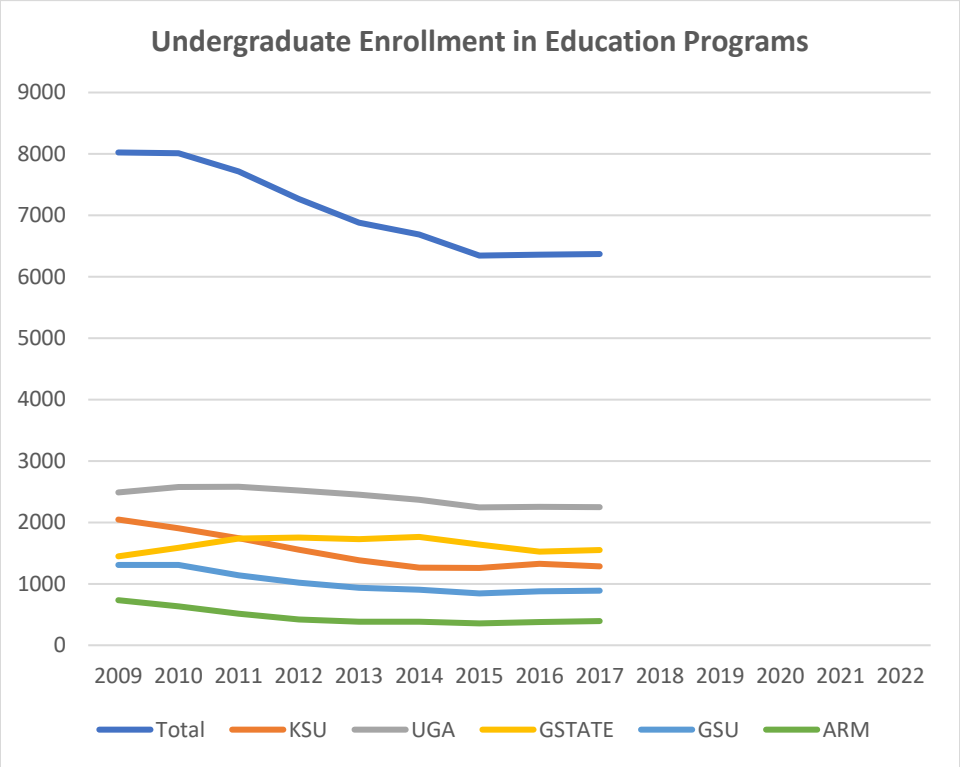


2 X

Increase



10-year trend of undergraduate USG Teacher *enrollment*



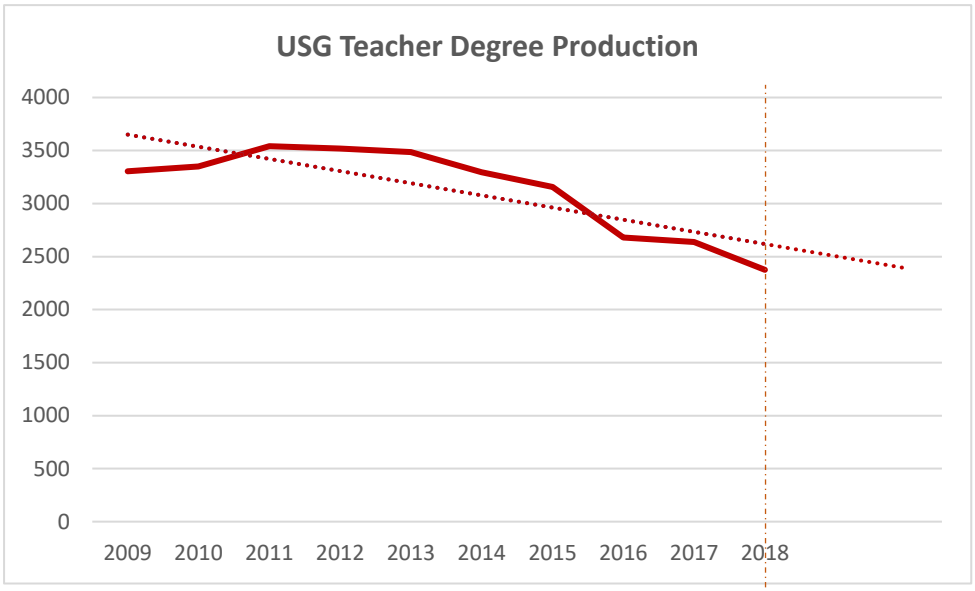
Systemwide, total enrollment in undergraduate teacher degree programs has been in constant decline over the last decade.

Total enrollment in undergraduate education teacher degree programs has declined 20% from just over 8,000 students in 2010 to only 6,400 students in 2015.

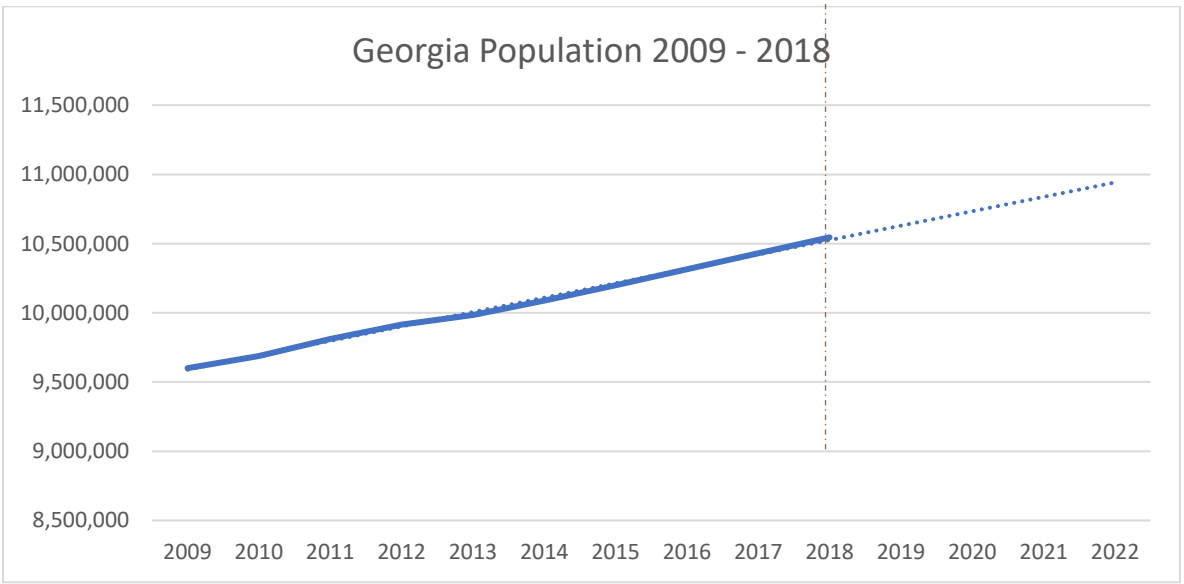
The decline has appeared to have stabilized.

10-year trend of undergraduate USG Teacher degrees

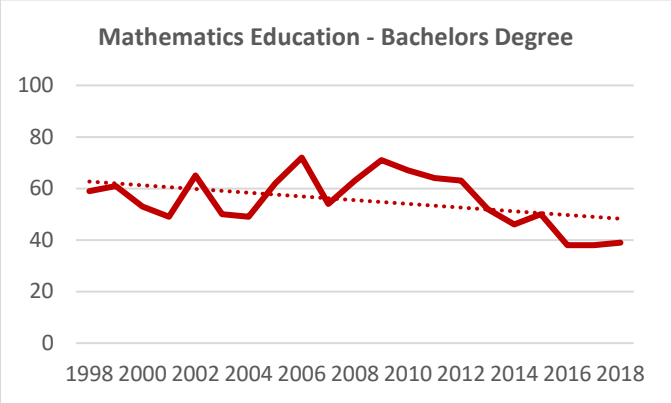
The trend for teacher production in Georgia is not good news!



The Population of Georgia continues to grow.



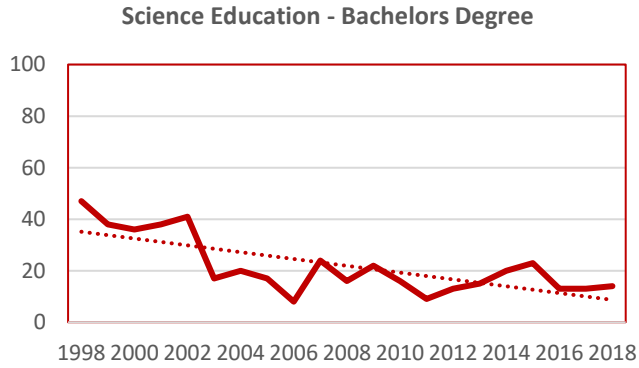
20-year trend of undergraduate USG Teacher degrees



20 Year Average
Production Rate / Year

58

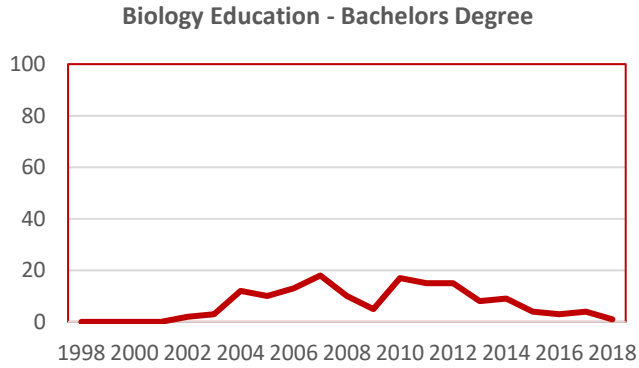
New Teachers / Year



20 Year Average
Production Rate / Year

23

New Teachers / Year

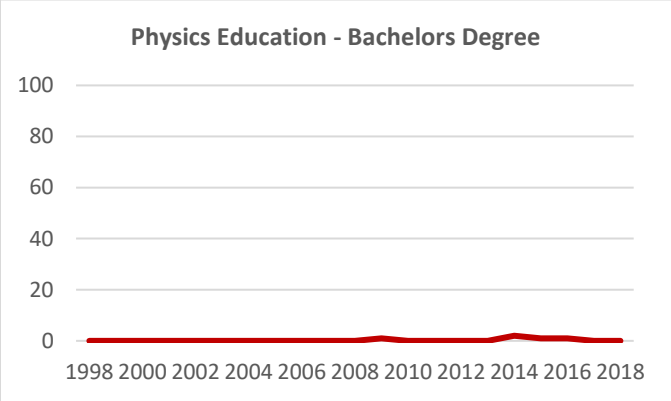


20 Year Average
Production Rate / Year

7.5

New Teachers / Year

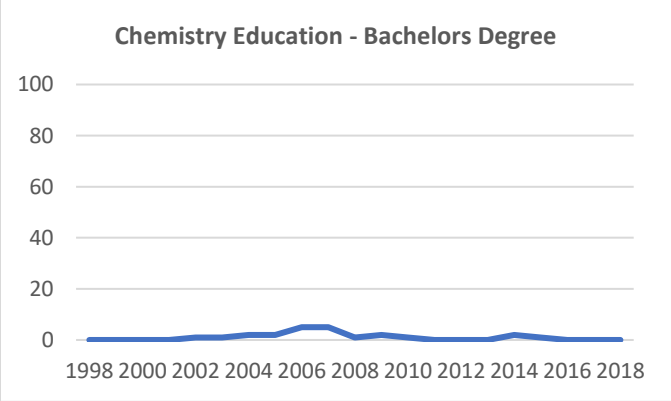
20-year trend of undergraduate USG Teacher degrees



20 Year Average
Production Rate / Year

1/4

Near ZERO



20 Year Average
Production Rate / Year

1

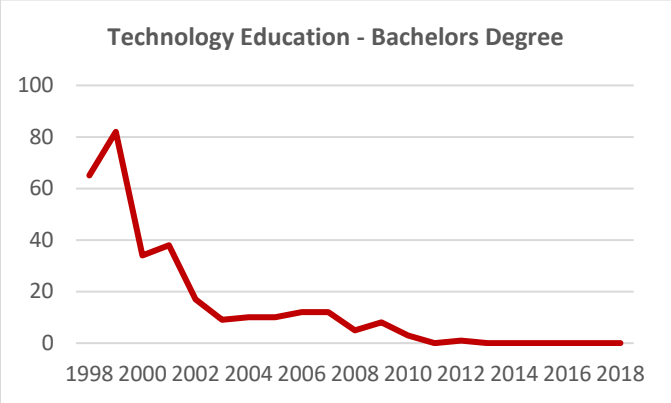
Near ZERO

For AY 2018, the Georgia Department of Education reports 2,299 total schools, of the following type:

- K-12 13 grade levels between PK-12 or K-12
- Elementary 1,323 grade levels between PK-5
- Middle 484 grade levels between 6-8
- High 479 grade levels between 8-12 or 9-12

Teacher production for technology, engineering, computer science, physics, and chemistry is effectively zero. If only one technology and engineering teacher, and one computer science teacher were provided into every middle and high school, this would require nearly 2,000 teachers today! This production rate does not consider elementary school requirements or multi-teacher needs in more advanced highs schools and college and career academies.

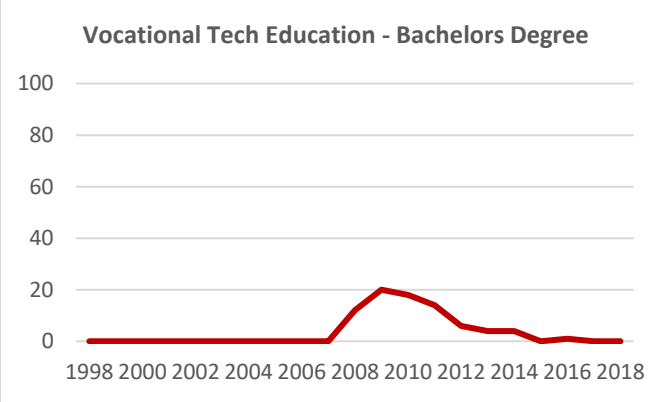
20-year trend of undergraduate USG Teacher degrees



20 Year Average
Production Rate / Year

13

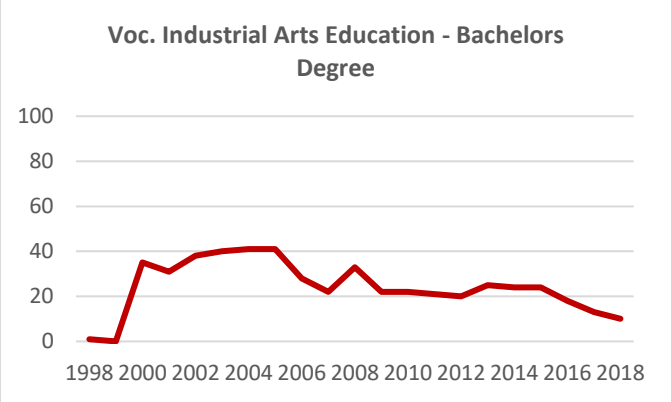
Now ZERO



20 Year Average
Production Rate / Year

4

Now ZERO



20 Year Average
Production Rate / Year

25

Near ZERO

Zero Teacher Production for Computer Science, Technology, Engineering, Advanced Manufacturing and related fields.

Certification Rates by Georgia Professional Standards Commission (GaPSC)

Credentialing is explained by the following narrative from GaPSC:

> *There are two types of credentials, "fields" and "endorsements".*
>
> *"Fields" are the result of full educator preparation programs intended to certify newly prepared educators to teach a specific body of content. Those newly prepared teachers would be "in-field" to teach content in that field of preparation.*
>
> *"Endorsements" indicate added expertise, and modify a base certificate. Some endorsements indicate acquisition of sufficient content knowledge to make the holder "in-field" to teach content in that field (this is true for the Computer Science endorsement), while other endorsements show acquisition of enhanced teaching knowledge in an area, but do not make the holder "in-field" to deliver a particular body of content (true for the STEM endorsement.)*
>
> *Also note that some certificates may be "in-field" for content areas other than that named on the certificate. For example, Mathematics (6-12) certification is "in-field" to deliver many Computer Science courses. See CAPS to determine which certificates are "in-field" for specific courses. https://www.gapsc.com/Certification/CAPS.aspx*
>
> *Also note that the Computer Science certificate did not exist prior to 10/15/2015. "*
>
> ***(narrative above, and answers to 'method' questions below provided by Chuck McCampbell, CIO, GaPSC, on Friday April 13, 2018)***

There are multiple routes to become a teacher in Engineering/Technology or Computer Science. The scope of the question being answer here is about Engineering, Technology or Computer Science teaching.

Method 1 – Traditional Undergraduate Teacher Preparation. This is the traditional 4 year BS or BA program.

In FY2017, USG produced 2586 Bachelor's Degrees in Education

- 0 Computer Science Education
- 0 Engineering & Technology Education
- 13 Trade / Workforce Education
- 17 Science Teachers (4 General Science + 13 Biology Education, 0 Physics or Chemistry)
- 38 Math Teachers

(Source: University System of Georgia, Academic Data Mart and/or Student Information Reporting System SRPT602_P, 07/29/2017) (CIP Codes: 13.1309, 13.1319, 13.1320, 13.1316, 13.1311, 13.1322, 13.1322, 13.1329)

This answer is provided by researchers at GaPSC: [>>] In 2017, no new teachers certified in Computer Science (P-12) were produced by Georgia's public or private institutions of higher learning (IHEs) in Baccalaureate programs. One teacher of Engineering and Technology was produced. See chart 1 below. ('unicorn' produced by non-traditional progression through USG)

Method 2 – STEM major earns an MAT or similar, such as a GT graduate going to graduate school at Georgia State

This answer is provided by researchers at GaPSC: [>>]In 2017, no new teachers certified in Computer Science (P-12) or in Engineering and Technology were produced by Georgia's public or private institutions of higher learning (IHEs) in Post-baccalaureate programs. See chart 1 below.

Method 3 – Other alternative routes to credentialing a person

This answer is provided by researchers at GaPSC: [>>] This is where most of the production in low-incidence fields comes from. In 2017, programs in school systems and/or Regional Education Service Agencies (RESAs) approved under the Georgia Teacher Academy for Preparation & Pedagogy provided eight new teachers certified in Engineering and Technology. Note that certificate teachers can add certification in some content areas by passing the appropriate content assessment. See chart 1 below. Regarding the Computer Science Endorsement, see Chart 2 below.

Chart 1: Newly certified teachers by academic year (July 1) and source.

		Sources			
Certificate Field	**Academic Year**	**Bacc**	**Post-Bacc**	**GaTAPP**	**Test-in**
ENGINEERING AND TECHNOLOGY	2017	1	0	8	23
ENGINEERING AND TECHNOLOGY	2016	5	1	6	47
ENGINEERING AND TECHNOLOGY	2015	2	0	4	84
COMPUTER SCIENCE (P-12)	2017	0	0	0	9
COMPUTER SCIENCE (P-12)	2016	0	0	2	0
COMPUTER SCIENCE (P-12)	2015	Certificate did not exist			

Chart 2 – Production of Computer Science Endorsements by academic year (July 1).

Endorsement	**Academic Year**	**Production**
COMPUTER SCIENCE ENDORSEMENT	2017	18
COMPUTER SCIENCE ENDORSEMENT	2016	14
COMPUTER SCIENCE ENDORSEMENT	2015	4

USG Production Rates

In Academic Year 2016, the institutions of the University System of Georgia yielded the following.

2635 - Bachelors Degrees in Education - TOTAL

- ~ 1,300 K-5 Teachers
- 18 Trades Teachers
- 17 Science Teachers (secondary)
- 38 Math Teachers (secondary)
- **0 Computer Science Education**
- **0 Engineering, Engineering Technology / Technology Education**

*source: University System of Georgia, Academic Data Mart and/or Student Information Reporting System SRPT602_P, 07/29/2017) (CIP Codes: 13.1309, 13.1319, 13.1320, 13.1316, 13.1311, 13.1322, 13.1322, 13.1329)

USG Data Sources

The online sources for the USG Datamart are at: https://www.usg.edu/research/degrees_conferred/

System Totals pages start at:

- 2018 pg. 30
- 2017 pg. 31
- 2016 pg. 33
- 2015 pg. 33
- 2014 pg. 25
- 2013 pg. 174
- 2012 pg. 178
- 2011 pg. 176
- 2010 pg. 171
- 2009 pg. 173
- 2008 pg. 1
- 2007 pg. 211
- 2006 pg. 213
- 2005 pg. 166
- 2004 pg. 176
- 2003 pg. 210
- 2002 pg. 140
- 2001 pg. 154
- 2000 pg. 152
- 1999 pg. 179, 203
- 1998 pg. 214, 240

The relevant CIP codes as defined by the National Center for Education Statistics are:

- CIP 11.xxxx Computer And Information Sciences And Support Services
- CIP 13.xxxx Education
- CIP 14.xxxx Engineering
- CIP 15.xxxx Engineering Technologies And Engineering-Related Fields

Computer Science / Information Technology Degree Production - USG

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	11.xxxx	Computer Science / Information Technology	0	90	45	0	734	0	255	0	18	0	869	273	1142
1999	11.xxxx	Computer Science / Information Technology	0	132	24	0	821	0	332	0	14	0	977	346	1323
2000	11.xxxx	Computer Science / Information Technology	0	208	28	0	930	0	315	0	18	0	1166	333	1499
2001	11.xxxx	Computer Science / Information Technology	0	122	60	0	1006	0	372	0	17	0	1188	389	1577
2002	11.xxxx	Computer Science / Information Technology	0	210	99	0	1,138	0	409	0	21	0	1,447	430	1,877
2003	11.xxxx	Computer Science / Information Technology	3	197	127	0	1,277	0	427	0	21	0	1,604	448	2,052
2004	11.xxxx	Computer Science / Information Technology	23	141	144	0	1,333	2	443	0	18	0	1,641	463	2,104
2005	11.xxxx	Computer Science / Information Technology	12	144	0	138	1,206	0	401	0	30	0	1,500	431	1,931
2006	11.xxxx	Computer Science / Information Technology	84	82	0	102	1,112	0	337	0	51	0	1,380	388	1,768
2007	11.xxxx	Computer Science / Information Technology	10	47	0	86	872	2	422	0	56	0	1,015	480	1,495
2008	11.xxxx	Computer Science / Information Technology	8	25	0	72	823	15	395	0	58	0	928	468	1,396
2009	11.xxxx	Computer Science / Information Technology	4	23	0	60	791	9	523	0	51	0	878	583	1,461
2010	11.xxxx	Computer Science / Information Technology	15	11	0	50	851	8	425	0	55	0	927	488	1,415
2011	11.xxxx	Computer Science / Information Technology	8	10	0	38	956	7	531	0	50	0	1,012	588	1,600
2012	11.xxxx	Computer Science / Information Technology	13	8	0	29	1,059	11	440	0	61	0	1,109	512	1,621
2013	11.xxxx	Computer Science / Information Technology	34	6	0	19	1,178	15	501	0	67	0	1,237	583	1,820
2014	11.xxxx	Computer Science / Information Technology	26	3	0	19	1,415	17	532	0	69	0	1,463	618	2,081
2015	11.xxxx	Computer Science / Information Technology	74	5	0	16	1,664	24	568	0	75	0	1,759	667	2,426
2016	11.xxxx	Computer Science / Information Technology	37	10	0	19	1,816	18	770	0	73	0	1,882	861	2,743
2017	11.xxxx	Computer Science / Information Technology	67	4	0	18	2,164	41	1,232	0	61	0	2,253	1,334	3,587
2018	11.xxxx	Computer Science / Information Technology	67	11	2	20	2,576	65	1,613	0	73	0	2,676	1,751	4,427

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Education Degree Production - USG

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	13.xxxx	Education	0	11	11	0	3299	0	2952	795	175	0	3321	3922	7243
1999	13.xxxx	Education	0	14	7	0	2944	0	2597	617	173	0	2965	3387	6352
2000	13.xxxx	Education	0	13	4	0	2952	0	2237	478	165	0	2969	2880	5849
2001	13.xxxx	Education	1	10	4	0	2567	0	2131	488	177	0	2582	2796	5378
2002	13.xxxx	Education	0	5	6	0	2,504	0	2,309	643	213	0	2,515	3,165	5,680
2003	13.xxxx	Education	1	4	3	0	2,529	0	2,485	611	195	0	2,537	3,291	5,828
2004	13.xxxx	Education	0	22	4	0	2,546	0	2,688	819	207	0	2,572	3,714	6,286
2005	13.xxxx	Education	9	19	0	1	2,821	0	3,169	766	186	0	2,850	4,121	6,971
2006	13.xxxx	Education	4	11	0	0	2,982	0	2,630	623	168	0	2,997	3,421	6,418
2007	13.xxxx	Education	11	10	0	5	3,094	0	2,653	754	201	0	3,120	3,608	6,728
2008	13.xxxx	Education	5	11	0	1	3,077	0	2,642	764	222	0	3,094	3,628	6,722
2009	13.xxxx	Education	3	4	0	0	3,297	0	2,686	996	233	0	3,304	3,915	7,219
2010	13.xxxx	Education	1	0	0	1	3,347	2	2,989	1,020	234	0	3,349	4,245	7,594
2011	13.xxxx	Education	4	0	0	0	3,537	107	3,065	871	272	0	3,541	4,315	7,856
2012	13.xxxx	Education	7	0	0	0	3,513	88	2,736	809	306	0	3,520	3,939	7,459
2013	13.xxxx	Education	5	0	0	0	3,479	68	2,619	1,062	232	0	3,484	3,981	7,465
2014	13.xxxx	Education	30	0	0	0	3,265	43	2,271	849	233	0	3,295	3,396	6,691
2015	13.xxxx	Education	50	0	0	0	3,108	54	2,441	801	278	0	3,158	3,574	6,732
2016	13.xxxx	Education	58	0	0	0	2,623	58	2,353	845	307	0	2,681	3,563	6,244
2017	13.xxxx	Education	51	0	0	0	2,586	98	2,425	1,115	317	0	2,637	3,955	6,592
2018	13.xxxx	Education	69	0	13	0	2,293	118	2,442	1,215	356	0	2,375	4,131	6,506

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Engineering Degree Production - USG

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	14.xxxx	Engineering	0	0	0	0	1276	0	573	0	179	0	1276	752	2028
1999	14.xxxx	Engineering	0	0	0	0	1326	0	569	0	164	0	1326	733	2059
2000	14.xxxx	Engineering	0	0	0	0	1280	0	573	0	163	0	1280	736	2016
2001	14.xxxx	Engineering	0	0	0	0	1201	0	649	0	180	0	1201	829	2030
2002	14.xxxx	Engineering	0	0	0	0	1,264	0	658	0	174	0	1,264	832	2,096
2003	14.xxxx	Engineering	1	0	0	0	1,317	0	822	0	162	0	1,318	984	2,302
2004	14.xxxx	Engineering	0	6	0	0	1,420	0	832	0	233	0	1,426	1,065	2,491
2005	14.xxxx	Engineering	0	0	0	0	1,414	0	825	0	254	0	1,414	1,079	2,493
2006	14.xxxx	Engineering	0	0	0	0	1,427	0	736	0	281	0	1,427	1,017	2,444
2007	14.xxxx	Engineering	0	0	0	0	1,510	1	708	0	337	0	1,510	1,046	2,556
2008	14.xxxx	Engineering	0	0	0	0	1,501	5	796	0	328	0	1,501	1,129	2,630
2009	14.xxxx	Engineering	0	0	0	0	1598	0	956	0	340	0	1598	1296	2894
2010	14.xxxx	Engineering	0	0	0	0	1,693	1	864	0	265	0	1,693	1,130	2,823
2011	14.xxxx	Engineering	0	0	0	0	1,817	2	970	0	296	0	1,817	1,268	3,085
2012	14.xxxx	Engineering	0	0	0	0	1,773	1	1,014	0	311	0	1,773	1,326	3,099
2013	14.xxxx	Engineering	1	0	0	0	2,055	5	1,008	0	319	0	2,056	1,332	3,388
2014	14.xxxx	Engineering	1	0	0	0	2,343	3	1,065	0	372	0	2,344	1,440	3,784
2015	14.xxxx	Engineering	2	0	0	0	2,520	1	1,029	0	363	0	2,522	1,393	3,915
2016	14.xxxx	Engineering	2	0	0	0	2,800	1	1,191	0	349	0	2,802	1,541	4,343
2017	14.xxxx	Engineering	0	0	3	0	3,128	7	1,041	0	372	0	3,131	1,420	4,551
2018	14.xxxx	Engineering	1	0	3	0	3,110	7	1,138	0	348	0	3,114	1,493	4,607

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Engineering Techology - USG

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	15.xxxx	Engineering Techology	0	2	37	0	508	0	50	0	0	0	547	50	597
1999	15.xxxx	Engineering Techology	0	0	17	0	412	0	35	0	0	0	429	35	464
2000	15.xxxx	Engineering Techology	0	3	13	0	405	0	47	0	0	0	421	47	468
2001	15.xxxx	Engineering Techology	0	39	22	0	403	0	40	0	0	0	464	40	504
2002	15.xxxx	Engineering Techology	1	8	21	0	355	0	43	0	0	0	385	43	428
2003	15.xxxx	Engineering Techology	0	3	39	0	378	0	55	0	0	0	420	55	475
2004	15.xxxx	Engineering Techology	4	108	43	0	338	0	54	0	0	0	493	54	547
2005	15.xxxx	Engineering Techology Degree Production	26	15	0	44	380	0	42	0	0	0	465	42	507
2006	15.xxxx	Engineering Techology	19	10	0	51	401	0	34	0	0	0	481	34	515
2007	15.xxxx	Engineering Techology	34	7	0	51	432	0	35	0	0	0	524	35	559
2008	15.xxxx	Engineering Techology	32	19	0	56	454	1	43	0	0	0	561	44	605
2009	15.xxxx	Engineering Techology	34	41	0	42	441	0	41	0	0	0	558	41	599
2010	15.xxxx	Engineering Techology	42	37	0	46	493	1	46	0	0	0	618	47	665
2011	15.xxxx	Engineering Techology	9	64	0	36	531	1	41	0	0	0	640	42	682
2012	15.xxxx	Engineering Techology	10	97	0	39	530	0	43	0	0	0	676	43	719
2013	15.xxxx	Engineering Techology	5	49	0	42	475	3	39	0	0	0	571	42	613
2014	15.xxxx	Engineering Techology	4	25	0	35	359	13	36	0	0	0	423	49	472
2015	15.xxxx	Engineering Techology	10	20	0	28	297	14	48	0	0	0	355	62	417
2016	15.xxxx	Engineering Techology	9	7	0	22	314	0	48	0	0	0	352	48	400
2017	15.xxxx	Engineering Techology	12	20	0	14	294	1	59	0	0	0	340	60	400
2018	15.xxxx	Engineering Techology	3	9	0	22	297	2	65	0	0	0	331	67	398

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Technology Teacher Edu/Industrial Arts Teacher Education

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	65	0	32	2	0	0	65	34	99
1999	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	82	0	28	1	0	0	82	29	111
2000	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	34	0	37	0	0	0	34	37	71
2001	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	38	0	21	1	0	0	18	22	40
2002	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	17	0	25	1	0	0	17	26	43
2003	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	9	0	16	2	0	0	9	18	27
2004	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	10	0	26	0	0	0	10	26	36
2005	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	10	0	18	0	0	0	10	18	28
2006	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	12	0	25	0	0	0	12	25	37
2007	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	12	0	15	0	0	0	12	15	27
2008	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	5	0	8	0	0	0	5	8	13
2009	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	8	0	8	0	0	0	8	8	16
2010	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	3	0	11	0	0	0	3	11	14
2011	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	0	0	10	0	0	0	0	10	10
2012	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	1	0	14	0	0	0	1	14	15
2013	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	0	0	14	0	0	0	0	14	14
2014	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	0	0	8	0	0	0	0	8	8
2015	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	0	0	19	0	0	0	0	19	19
2016	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	0	0	19	0	0	0	0	19	19
2017	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	0	0	24	0	0	0	0	24	24
2018	13.1309	Technology Teacher Edu/Industrial Arts Teacher Education	0	0	0	0	0	0	19	0	0	0	0	19	19

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Mathematics Teacher Education

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	13.1311	Mathematics Teacher Education	0	0	0	0	59	0	76	16	12	0	59	104	163
1999	13.1311	Mathematics Teacher Education	0	0	0	0	61	0	79	14	7	0	61	100	161
2000	13.1311	Mathematics Teacher Education	0	0	0	0	53	0	61	10	7	0	53	78	131
2001	13.1311	Mathematics Teacher Education	0	0	0	0	49	0	49	7	9	0	49	65	114
2002	13.1311	Mathematics Teacher Education	0	0	0	0	65	0	52	4	6	0	65	62	127
2003	13.1311	Mathematics Teacher Education	0	0	0	0	50	0	64	15	4	0	50	83	133
2004	13.1311	Mathematics Teacher Education	0	0	0	0	49	0	97	20	2	0	49	119	168
2005	13.1311	Mathematics Teacher Education	1	0	0	0	62	0	67	5	10	0	63	82	145
2006	13.1311	Mathematics Teacher Education	0	0	0	0	72	0	78	5	5	0	72	88	160
2007	13.1311	Mathematics Teacher Education	0	0	0	0	54	0	69	13	7	0	54	89	143
2008	13.1311	Mathematics Teacher Education	0	0	0	0	63	0	60	16	8	0	63	84	147
2009	13.1311	Mathematics Teacher Education	0	0	0	0	71	0	63	10	10	0	71	83	154
2010	13.1311	Mathematics Teacher Education	0	0	0	0	67	0	49	6	11	0	67	66	133
2011	13.1311	Mathematics Teacher Education	0	0	0	0	64	0	93	19	14	0	64	126	190
2012	13.1311	Mathematics Teacher Education	0	0	0	0	63	0	80	8	10	0	63	98	161
2013	13.1311	Mathematics Teacher Education	0	0	0	0	52	0	62	13	10	0	52	85	137
2014	13.1311	Mathematics Teacher Education	0	0	0	0	46	0	55	7	2	0	46	64	110
2015	13.1311	Mathematics Teacher Education	0	0	0	0	50	0	60	3	10	0	50	73	123
2016	13.1311	Mathematics Teacher Education	0	0	0	0	38	0	45	1	6	0	38	52	90
2017	13.1311	Mathematics Teacher Education	0	0	0	0	38	0	35	5	7	0	38	47	85
2018	13.1311	Mathematics Teacher Education	0	0	0	0	39	0	45	4	3	0	39	52	91

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Science Teacher Education, General

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	13.1316	Science Teacher Education, General	0	0	0	0	47	0	78	17	4	0	47	99	146
1999	13.1316	Science Teacher Education, General	0	0	0	0	38	0	106	9	5	0	120	38	158
2000	13.1316	Science Teacher Education, General	0	0	0	0	36	0	83	15	4	0	36	102	138
2001	13.1316	Science Teacher Education, General	0	0	0	0	38	0	61	11	8	0	38	80	118
2002	13.1316	Science Teacher Education, General	0	0	0	0	41	0	89	7	4	0	41	100	141
2003	13.1316	Science Teacher Education, General	0	0	0	0	17	0	78	13	9	0	17	100	117
2004	13.1316	Science Teacher Education, General	0	0	0	0	20	0	77	10	6	0	20	93	113
2005	13.1316	Science Teacher Education, General	0	0	0	0	17	0	85	7	5	0	17	97	114
2006	13.1316	Science Teacher Education, General	0	0	0	0	8	0	69	3	5	0	8	77	85
2007	13.1316	Science Teacher Education, General	0	0	0	0	24	0	56	13	3	0	24	72	96
2008	13.1316	Science Teacher Education, General	0	0	0	0	16	0	54	2	4	0	16	60	76
2009	13.1316	Science Teacher Education, General	0	0	0	0	22	0	50	5	4	0	22	59	81
2010	13.1316	Science Teacher Education, General	0	0	0	0	16	0	66	7	2	0	16	75	91
2011	13.1316	Science Teacher Education, General	0	0	0	0	9	0	69	0	10	0	9	79	88
2012	13.1316	Science Teacher Education, General	0	0	0	0	13	0	54	7	7	0	13	68	81
2013	13.1316	Science Teacher Education, General	0	0	0	0	15	0	50	6	7	0	15	63	78
2014	13.1316	Science Teacher Education, General	0	0	0	0	20	0	52	3	6	0	20	61	81
2015	13.1316	Science Teacher Education, General	0	0	0	0	23	0	36	0	6	0	23	42	65
2016	13.1316	Science Teacher Education, General	0	0	0	0	13	0	22	1	9	0	13	32	45
2017	13.1316	Science Teacher Education, General	0	0	0	0	13	0	25	1	4	0	13	30	43
2018	13.1316	Science Teacher Education, General	0	0	0	0	14	2	32	1	8	0	14	43	57

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Technical Teacher Education (Vocational)

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	0	0	16	13	5	0	0	34	34
1999	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	0	0	14	8	9	0	0	31	31
2000	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	0	0	10	8	7	0	0	25	25
2001	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	0	0	9	4	3	0	0	16	16
2002	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	0	0	8	7	7	0	0	22	22
2003	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	0	0	6	4	7	0	0	17	17
2004	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	0	0	5	0	0	0	0	5	5
2005	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	0	0	1	0	0	0	0	1	1
2006	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	12	0	30	9	4	0	12	43	55
2009	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	20	0	30	6	7	0	20	44	64
2010	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	18	0	20	10	14	0	18	44	62
2011	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	14	0	39	2	21	0	14	62	76
2012	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	6	0	9	3	11	0	6	23	29
2013	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	4	0	12	2	7	0	4	21	25
2014	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	4	0	12	4	4	0	4	20	24
2015	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	0	0	4	4	4	0	0	12	12
2016	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	1	0	5	4	11	0	1	20	21
2017	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	0	0	10	6	9	0	0	25	25
2018	13.1319	Technical Teacher Education (Vocational)	0	0	0	0	0	0	10	4	3	0	0	17	17

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Trade and Industrial Teacher Education (Vocational)

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	1	0	0	1	3	0	1	4	5
1999	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	0	0	0	0	2	0	0	2	2
2000	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	35	0	0	0	1	0	35	1	36
2001	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	31	0	0	0	0	0	31	0	31
2002	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	38	0	0	0	1	0	38	1	39
2003	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	40	0	0	0	0	0	40	0	40
2004	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	41	0	8	11	3	0	41	22	63
2005	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	41	0	30	11	8	0	41	49	90
2006	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	28	0	43	6	6	0	28	55	83
2007	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	22	0	36	8	6	0	22	50	72
2008	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	33	0	0	0	0	0	33	0	33
2009	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	22	0	0	0	0	0	22	0	22
2010	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	22	0	0	0	0	0	22	0	22
2011	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	21	0	0	0	0	0	21	0	21
2012	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	20	0	0	0	0	0	20	0	20
2013	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	25	0	0	0	0	0	25	0	25
2014	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	24	0	0	0	0	0	24	0	24
2015	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	24	0	0	0	0	0	24	0	24
2016	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	18	0	0	0	0	0	18	0	18
2017	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	13	0	0	0	0	0	13	0	13
2018	13.1320	Trade and Industrial Teacher Education (Vocational)	0	0	0	0	10	0	0	0	0	0	10	0	10

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Computer Teacher Education

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	13.1321	Computer Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Biology Teacher Education

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	13.1322	Biology Teacher Education	0	0	0	0	0	0	0	5	0	0	0	5	5
1999	13.1322	Biology Teacher Education	0	0	0	0	0	0	3	3	0	0	0	6	6
2000	13.1322	Biology Teacher Education	0	0	0	0	0	0	4	3	0	0	0	7	7
2001	13.1322	Biology Teacher Education	0	0	0	0	0	0	1	3	0	0	0	4	4
2002	13.1322	Biology Teacher Education	0	0	0	0	2	0	1	2	0	0	2	3	5
2003	13.1322	Biology Teacher Education	0	0	0	0	3	0	0	0	0	0	3	0	3
2004	13.1322	Biology Teacher Education	0	0	0	0	12	0	0	0	0	0	12	0	12
2005	13.1322	Biology Teacher Education	0	0	0	0	10	0	0	0	0	0	10	0	10
2006	13.1322	Biology Teacher Education	0	0	0	0	13	0	0	0	0	0	13	0	13
2007	13.1322	Biology Teacher Education	0	0	0	0	18	0	0	0	0	0	18	0	18
2008	13.1322	Biology Teacher Education	0	0	0	0	10	0	0	0	0	0	10	0	10
2009	13.1322	Biology Teacher Education	0	0	0	0	5	0	0	0	0	0	5	0	5
2010	13.1322	Biology Teacher Education	0	0	0	0	17	0	0	0	0	0	17	0	17
2011	13.1322	Biology Teacher Education	0	0	0	0	15	0	0	0	0	0	15	0	15
2012	13.1322	Biology Teacher Education	0	0	0	0	15	0	0	0	0	0	15	0	15
2013	13.1322	Biology Teacher Education	0	0	0	0	8	0	0	0	0	0	8	0	8
2014	13.1322	Biology Teacher Education	0	0	0	0	9	0	0	0	0	0	9	0	9
2015	13.1322	Biology Teacher Education	0	0	0	0	4	0	0	0	0	0	4	0	4
2016	13.1322	Biology Teacher Education	0	0	0	0	3	0	0	0	0	0	3	0	3
2017	13.1322	Biology Teacher Education	0	0	0	0	4	0	0	0	0	0	4	0	4
2018	13.1322	Biology Teacher Education	0	0	0	0	1	0	0	0	0	0	1	0	1

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Chemistry Teacher Education

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	13.1323	Chemistry Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	13.1323	Chemistry Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	13.1323	Chemistry Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	13.1323	Chemistry Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	13.1323	Chemistry Teacher Education	0	0	0	0	1	0	0	0	0	0	1	0	1
2003	13.1323	Chemistry Teacher Education	0	0	0	0	1	0	0	0	0	0	1	0	1
2004	13.1323	Chemistry Teacher Education	0	0	0	0	2	0	0	0	0	0	2	0	2
2005	13.1323	Chemistry Teacher Education	0	0	0	0	2	0	0	0	0	0	2	0	2
2006	13.1323	Chemistry Teacher Education	0	0	0	0	5	0	0	0	0	0	5	0	5
2007	13.1323	Chemistry Teacher Education	0	0	0	0	5	0	0	0	0	0	5	0	5
2008	13.1323	Chemistry Teacher Education	0	0	0	0	1	0	0	0	0	0	1	0	1
2009	13.1323	Chemistry Teacher Education	0	0	0	0	2	0	0	0	0	0	2	0	2
2010	13.1323	Chemistry Teacher Education	0	0	0	0	1	0	0	0	0	0	1	0	1
2011	13.1323	Chemistry Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	13.1323	Chemistry Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	13.1323	Chemistry Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	13.1323	Chemistry Teacher Education	0	0	0	0	2	0	0	0	0	0	2	0	2
2015	13.1323	Chemistry Teacher Education	0	0	0	0	1	0	0	0	0	0	1	0	1
2016	13.1323	Chemistry Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	13.1323	Chemistry Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	13.1323	Chemistry Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Physics Teacher Education

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	13.1329	Physics Teacher Education	0	0	0	0	1	0	0	0	0	0	1	0	1
2010	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	13.1329	Physics Teacher Education	0	0	0	0	2	0	0	0	0	0	2	0	2
2015	13.1329	Physics Teacher Education	0	0	0	0	1	0	0	0	0	0	1	0	1
2016	13.1329	Physics Teacher Education	0	0	0	0	1	0	0	0	0	0	1	0	1
2017	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	13.1329	Physics Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Earth Science Teacher Education

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	13.1337	Earth Science Teacher Education	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/

Environmental Education

Year	CIP_CODE	Description	Under_1_Year	1_Year_Cert	Assoc_Deg	Career_Assoc	Bachelors Degree	Adv_Cert	Mast	Ed_Spec	Doct	First_Prof	Total_UG	Total_Grad_Prof	Total_Award
1998	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	13.1338	Environmental Education	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: USG Datamart: https://www.usg.edu/research/degrees_conferred/