State Council of Higher Education for Virginia

Progress in Meeting Degree Production in Data Science & Technology, Education, Healthcare, and Science & Engineering

May 2025

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OVERVIEW

Beginning in 2018, the General Assembly of Virginia has appropriated $28.4 million annually to increase degree production in Data Science and Technology, Science and Engineering, Healthcare and Education (STEM-H) fields across 14 of the Commonwealth's public four-year institutions. The General Assembly has included language that details corresponding requirements and expectations for each institution in the appropriation act since 2018. Collectively, the funding aims to produce a total of 880 new bachelors, masters, doctoral and first professional degrees each year above a 2016-2017 academic year baseline of approximately 22,000. As Virginia's coordinating body for higher education, SCHEV is mandated to track each institution's progress and reports to the chairs of the House Appropriations and Senate Finance and Appropriations Committees annually.

Since 2017, awardee institutions have produced 3,275 additional STEM-H degrees. However, growth trends have varied both by degree field and institution. Degree production in Data Science and Technology has grown consistently under the initiative, increasing by 63% between 2017 and 2024, whereas other fields have seen fluctuating trends over the same period. Notably, the number of degrees awarded annually in Science and Engineering has declined by 2.8% overall, while those in Education declined by 7.3%.

Across institutions, rates of degree production have also skewed.

- In **Data Science and Technology** fields, the combined increase in awards from the University of Virginia and Virginia Tech account for 63% of total growth for the Commonwealth, while that from George Mason University accounts for another 23%.

- Degree production in **Education** has increased consistently at both James Madison University and the University of Virginia, while other institutions experienced less predictable award rates, and two institutions – Norfolk State University and Old Dominion University – have awarded fewer degrees over time.

- Radford University has contributed considerably to growth in **Healthcare** degrees, following its 2020 merger with the Jefferson College of Health Science.

- Virginia Tech continues to see the largest growth in **Science and Engineering** degree production, followed in 2024 by George Mason University, the University of Virginia and the College of William and Mary. All other institutions saw declines in the field.

Compared to 2017 levels, Norfolk State University has produced fewer degrees across all STEM-H programs. This coincides with changes to the federal Parental Loans for Undergraduate Students (PLUS) Program, which disproportionally impacted families of students attending Historically Black Colleges and Universities (HBCUs). Broadly, HBCU institutions have experienced declining enrollment between the fall semester of 2014 and that of 2018, with corresponding declines in completion.

The following narrative, tables and charts describe the total awards produced by area/field and institution within the context of the General Assembly's goals.
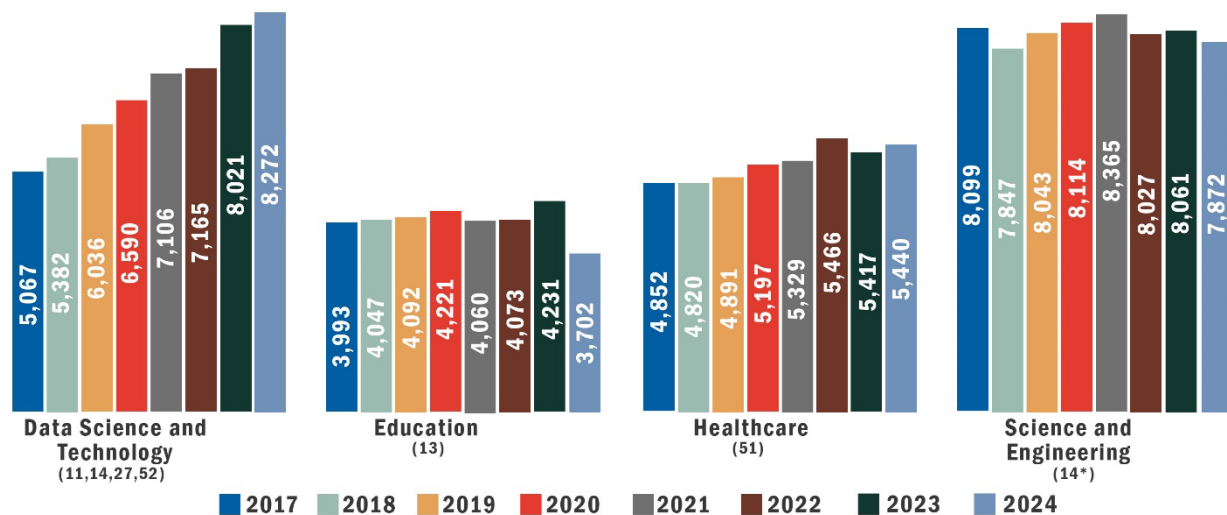
Awards by Field

Cumulative award production in STEM-H fields grew by 3,275 awards from the 2017 baseline to 2024. The following table and chart depict change over time in each degree field.

Table 1. Total Degrees Awarded, 2017-2024

Area (2 Digit CIP Code)	2017	2018	2019	2020	2021	2022	2023	2024
Data Science and Tech (11,14,27,52)	5,067	5,382	6,036	6,590	7,106	7,165	8,021	8,272
Education (13)	3,993	4,047	4,092	4,221	4,060	4,073	4,231	3,702
Healthcare (51)	4,852	4,820	4,891	5,197	5,329	5,466	5,417	5,440
Science and Engineering (14*)	8,099	7,847	8,043	8,114	8,365	8,027	8,061	7,872
Grand Total	22,011	22,096	23,062	24,122	24,860	24,731	25,730	25,286

*Excludes CIP 14.0901, 14.0903, and 14.1001 as they are reported as data science and technology degrees.

## Annual Degrees Awarded by STEM-H Field, 2017-2024

*Excludes CIP 14.0901, 14.0903, and 14.1001 as they are reported as data science and technology degrees.

Data Science and Technology fields have produced the highest increases in awards, growing by 63% from baseline production, followed by Healthcare (12%). Each of these fields has experienced relatively consistent growth over the period of implementation, with both fields exceeding their respective targets beginning in 2020. Awards in Education and Science and Engineering programs, meanwhile, declined in the past year by 7.3% and 2.8%, respectively. While statewide Education degree awards met anticipated targets in 2020 and 2023, but has otherwise fallen below expected levels. Numbers for Science and Engineering have consistently failed to meet target figures.

The following compares annual degree production for each field since 2017 against its target. A table comparing actual awards against targets in numeric form can be found in the Appendix.

Actual v. Expected Change in STEM-H Degree Production, 2018-2024
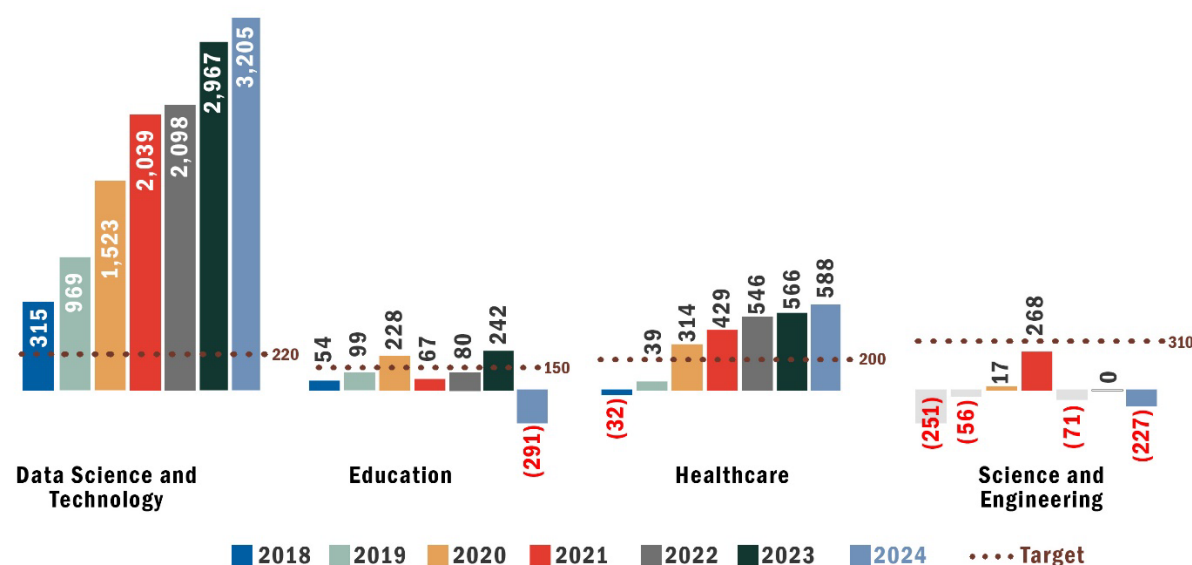
Awards by Institution

Most participating institutions have increased total degree production in STEM-H fields since 2017. Three institutions – Old Dominion University, Norfolk State University and Virginia State University – have seen a decrease in awards following four consecutive years of decreased enrollment between Fall 2014 and Fall 2018.

A 2015 report on the impact of changes in the federal PLUS Program on enrollment and completion rates found that HBCUs experienced disproportionately adverse effects in

relation to other institutions. However, given that Old Dominion University serves a higher proportion of low-income students, it is possible that PLUS Program changes contributed to the institution's lower enrollment and completion rates over this period as well.

Conversely, other four-year institutions experienced steady enrollment growth that may have contributed to their higher degree production in STEM-H fields. George Mason University, for instance, increased its undergraduate enrollment by approximately 4,000 students between 2014 and 2018.

Table 2. Total Awards of STEM-H Degrees by Institution, 2017-2024

Inst.	2017	2018	2019	2020	2021	2022	2023	2024
CNU	396	379	405	385	427	369	414	336
GMU	3,698	3,913	4,148	4,369	4,628	4,254	4,481	4,465
JMU	1,973	2,018	2,019	2,170	2,247	2,125	2,160	2,134
LU	322	342	326	323	334	413	346	374
NSU	388	348	260	278	257	300	301	290
ODU	3,060	2,983	2,900	2,879	2,892	2,847	2,843	2,771
RU	700	678	745	1,059	1,035	1,016	1,059	964
UMW	357	327	356	424	390	410	349	330
UVA	2,589	2,690	3,042	3,212	3,438	3,647	3,816	3,732
VCU	3,110	3,043	3,215	3,190	3,220	3,179	3,014	2,964
VMI	183	226	183	180	203	191	141	174
VSU	308	287	266	264	246	235	266	259
VT	4,158	4,064	4,443	4,585	4,757	4,737	5,637	5,515
WM	769	798	754	804	786	1,013	959	978
Total	22,011	22,096	23,062	24,122	24,860	24,736	25,786	25,286

Table 3 shows each institution's annual degree production as it relates to the corresponding anticipated number of degrees produced over the 2017 baseline. The data reflects the individual institutional experiences described above, as well as the impact of Radford University's merger with the Jefferson College of Health Sciences in Fiscal Year 2020 on its overall STEM-H degree production rates.

Table 3. Actual v. Expected Change in STEM-H Degree Production over Base Year 2017, by Institution

	Expected Total Annual Increase	2017 Base Year	2018 Annual Change over 2017	2019 Annual Change over 2017	2020 Annual Change over 2017	2021 Annual Change over 2017	2022 Annual Change over 2017	2023 Annual Change over 2017	2024 Annual Change over 2017
CNU	20	396	(17)	9	(11)	31	(27)	18	(60)
GMU	160	3,698	215	450	671	930	556	783	767
JMU	85	1,973	45	46	197	274	152	187	161
LU	15	322	20	4	1	12	91	24	52
NSU	20	388	(40)	(128)	(110)	(131)	(88)	(87)	(98)
ODU	125	3,060	(77)	(160)	(181)	(168)	(213)	(217)	(289)
RU	30	700	(22)	45	359	335	316	359	264
UMW	10	357	(30)	(1)	67	33	53	(8)	(27)
UVA	80	2,589	101	453	623	849	1,058	1,227	1,143
VCU	110	3,110	(67)	105	80	110	69	(96)	(146)
VMI	10	183	43	0	(3)	20	8	(42)	(9)
VSU	15	308	(21)	(42)	(44)	(62)	(73)	(42)	(49)
VT	160	4,158	(94)	285	427	599	579	1,479	1,357
WM	40	769	29	(15)	35	17	244	190	209
Total	**880**	**22,011**	**85**	**1,051**	**2,111**	**2,849**	**2,725**	**3,775**	**3,275**

Finally, the following data sets depict degree production by institution and compare those figures to their respective targets for each field.

Table 4.1 Annual Awards in Data Science and Technology Fields

Inst.	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CNU	107	109	129	130	147	126	163	124
GMU	1,313	1,434	1,527	1,683	1,876	1,723	1,863	2,063
JMU	297	312	317	365	359	318	333	327
LU	26	29	29	30	19	21	24	20
NSU	85	82	59	77	65	95	81	81
ODU	382	420	442	477	514	521	641	730
RU	93	92	108	69	82	75	65	51
UMW	74	69	90	92	75	84	72	85
UVA	572	590	956	1,203	1,306	1,326	1,597	1,586
VCU	454	456	441	464	476	517	399	419
VMI	38	64	55	50	58	57	35	56
VSU	79	76	60	70	75	59	79	66
VT	1,320	1,400	1,592	1,608	1,774	1,854	2,332	2,313
WM	227	249	231	272	280	389	350	351
Total	**5,067**	**5,382**	**6,036**	**6,590**	**7,106**	**7,165**	**8,034**	**8,272**

Table 4.2 Annual Award Change over 2017 Base Year in Data Science and Technology Fields

Inst.	Expected Annual Increase	2018 Annual Change over 2017	2019 Annual Change over 2017	2020 Annual Change over 2017	2021 Annual Change over 2017	2022 Annual Change over 2017	2023 Annual Change over 2017	2024 Annual Change over 2017
CNU	5	2	22	23	40	19	56	17
GMU	50	121	214	370	563	410	550	750
JMU	10	15	20	68	62	21	36	30
LU		3	3	4	(7)	(5)	(2)	(6)
NSU	5	(3)	(26)	(8)	(20)	10	(4)	(4)
ODU	15	38	60	95	132	139	259	348
RU	5	(1)	15	(24)	(11)	(18)	(28)	(42)
UMW		(5)	16	18	1	10	(2)	11
UVA	20	18	384	631	734	754	1,025	1,014
VCU	20	2	(13)	10	22	63	(55)	(35)
VMI	5	26	17	12	20	19	(3)	18
VSU	5	(3)	(19)	(9)	(4)	(20)	0	(13)
VT	60	80	272	288	454	534	1,012	993
WM	20	22	4	45	53	162	123	124
Total	**220**	**315**	**969**	**1,523**	**2,039**	**2,098**	**2,967**	**3,205**

Table 5.1 Annual Awards in Education Fields

Inst.	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CNU	70	77	60	52	49	47	56	34
GMU	907	954	1,026	1,115	1,053	834	869	769
JMU	325	362	334	386	372	396	488	416
LU	111	137	86	116	167	217	188	213
NSU	71	70	69	43	36	37	37	37
ODU	708	663	615	602	608	586	611	491
RU	286	264	285	294	276	239	296	180
UMW	120	106	106	133	113	119	108	83
UVA	314	358	404	388	349	482	483	396
VCU	559	552	655	652	659	627	585	579
VMI								
VSU	116	115	85	76	56	98	109	100
VT	261	214	206	190	182	171	162	182
WM	145	175	161	174	140	225	243	222
Total	**3,993**	**4,047**	**4,092**	**4,221**	**4,060**	**4,078**	**4,235**	**3,702**

Table 5.2 Annual Award Change over 2017 Base Year in Education Fields

Inst.	Expected Annual Increase	2018 Annual Change over 2017	2019 Annual Change over 2017	2020 Annual Change over 2017	2021 Annual Change over 2017	2022 Annual Change over 2017	2023 Annual Change over 2017	2024 Annual Change over 2017
CNU		7	(10)	(18)	(21)	(23)	(14)	(36)
GMU	40	47	119	208	146	(73)	(38)	(138)
JMU	15	37	9	61	47	71	163	91
LU	5	26	(25)	5	56	106	77	102
NSU	5	(1)	(2)	(28)	(35)	(34)	(34)	(34)
ODU	30	(45)	(93)	(106)	(100)	(122)	(97)	(217)
RU	10	(22)	(1)	8	(10)	(47)	10	(106)
UMW	5	(14)	(14)	13	(7)	(1)	(12)	(37)
UVA	10	44	90	74	35	168	169	82
VCU	20	(7)	96	93	100	68	26	20
VMI								
VSU	5	(1)	(31)	(40)	(60)	(18)	(7)	(16)
VT		(47)	(55)	(71)	(79)	(90)	(99)	(79)
WM	5	30	16	29	(5)	80	98	77
Total	**150**	**54**	**99**	**228**	**67**	**85**	**242**	**(291)**

Table 6.1 Annual Awards in Healthcare Fields

Inst.	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CNU								
GMU	700	701	726	744	831	798	872	799
JMU	976	979	1,011	1,042	1,087	1,034	983	1,044
LU	112	115	143	112	106	135	99	110
NSU	103	92	71	73	59	76	87	85
ODU	1,004	964	890	853	855	904	795	808
RU	188	210	218	553	563	610	603	654
UMW	22	30	40	52	48	55	39	37
UVA	508	534	524	532	552	589	563	543
VCU	1,197	1,159	1,203	1,153	1,145	1,115	1,148	1,147
VMI								
VSU				0		1	5	2
VT	42	36	65	83	83	149	224	211
WM								
Total	**4,852**	**4,820**	**4,891**	**5,197**	**5,329**	**5,466**	**5,418**	**5,440**

Table 6.2 Annual Award Change over 2017 Base Year in Healthcare Fields

Inst.	Expected Annual Increase	2018 Annual Change over 2017	2019 Annual Change over 2017	2020 Annual Change over 2017	2021 Annual Change over 2017	2022 Annual Change over 2017	2023 Annual Change over 2017	2024 Annual Change over 2017
CNU								
GMU	35	1	26	44	131	98	172	99
JMU	45	3	35	66	111	58	7	68
LU	5	3	31	0	(6)	23	(13)	(2)
NSU	5	(11)	(32)	(30)	(44)	(27)	(16)	(18)
ODU	40	(40)	(114)	(151)	(149)	(100)	(209)	(196)
RU	10	22	30	365	375	422	415	466
UMW		8	18	30	26	33	17	15
UVA	20	26	16	24	44	81	55	35
VCU	40	(38)	6	(44)	(52)	(82)	(49)	(50)
VMI								
VSU						1	5	2
VT		(6)	23	41	41	107	182	169
WM								
Total	**200**	**(32)**	**39**	**345**	**477**	**614**	**566**	**588**

Table 7.1 Annual Awards in Science and Engineering Fields*

Inst.	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
CNU	219	193	216	203	231	196	195	178
GMU	778	824	869	827	868	899	877	834
JMU	375	365	357	377	429	377	356	347
LU	73	61	68	65	42	40	35	31
NSU	129	104	61	85	97	92	96	87
ODU	966	936	953	947	915	836	796	742
RU	133	112	134	143	114	92	95	79
UMW	141	122	120	147	154	152	130	125
UVA	1,195	1,208	1,158	1,089	1,231	1,250	1,173	1207
VCU	900	876	916	921	940	920	882	819
VMI	145	162	128	130	145	134	106	118
VSU	113	96	121	118	115	77	73	91
VT	2,535	2,414	2,580	2,704	2,718	2,563	2,919	2809
WM	397	374	362	358	366	399	366	405
Total	**8,099**	**7,847**	**8,043**	**8,114**	**8,365**	**8,027**	**8,099**	**7,872**

Note: *Excludes CIP 14.0901, 14.0903, and 14.1001 as they are reported as Data Science and Technology degree awards.

Table 7.2 Annual Award Change over 2017 Base Year in Science and Engineering Fields*

Inst.	Expected Annual Increase	2018 Annual Change over 2017	2019 Annual Change over 2017	2020 Annual Change over 2017	2021 Annual Change over 2017	2022 Annual Change over 2017	2023 Annual Change over 2017	2024 Annual Change over 2017
CNU	15	(26)	(3)	(16)	12	(23)	(24)	(41)
GMU	35	46	91	49	90	121	99	56
JMU	15	(10)	(18)	2	54	2	(19)	(28)
LU	5	(12)	(5)	(8)	(31)	(33)	(38)	(42)
NSU	5	(25)	(68)	(44)	(32)	(37)	(33)	(42)
ODU	40	(30)	(13)	(19)	(51)	(130)	(170)	(224)
RU	5	(21)	1	10	(19)	(41)	(38)	(54)
UMW	5	(19)	(21)	6	13	11	(11)	(16)
UVA	30	13	(37)	(106)	36	55	(22)	12
VCU	30	(24)	16	21	40	20	(18)	(81)
VMI	5	17	(17)	(15)	0	(11)	(39)	(27)
VSU	5	(17)	8	5	2	(36)	(40)	(22)
VT	100	(121)	45	169	183	28	384	274
WM	15	(23)	(35)	(39)	(31)	2	(31)	8
Total	**310**	**(252)**	**(56)**	**15**	**266**	**(72)**	**0**	**(227)**

Note: *Excludes CIP 14.0901, 14.0903, and 14.1001 as they are reported as Data Science and Technology Degree Awards.

APPENDIX: ACTUAL V. EXPECTED ANNUAL AWARD CHANGE

Actual v. Expected Change in STEM-H Degree Production over Base Year 2017, by Degree Field

Area (2 Digit CIP Code)	Expected Annual Increase	2018 Annual Change over 2017		2019 Annual Change over 2017		2020 Annual Change over 2017		2021 Annual Change over 2017		2022 Annual Change over 2017		2023 Annual Change over 2017		2024 Annual Change over 2017	
		#Awards	%Chng	#Awards	%Chng	#Awards	%Chng	#Awards	%Chng	#Awards	%Chng	#Awards	%Chng	#Awards	%Chng
Data Science & Tech (11,14,27,52)	220	315	6.2%	969	19.1%	1,523	30.1%	2,039	40.2%	2,098	41.4%	2,967	58.6%	3,205	63.3%
Education (13)	150	54	1.4%	99	2.5%	228	5.7%	67	1.7%	85	2.1%	242	6.1%	(291)	-7.3%
Healthcare (51)	200	(32)	-0.7%	39	0.8%	345	7.1%	477	9.8%	614	12.7%	566	11.7%	588	12.1%
Science & Engineering (14*)	310	(252)	-3.1%	(56)	-0.7%	15	0.2%	266	3.3%	(72)	-0.9%	0	0.0%	(227)	-2.8%
Grand Total	**880**	**85**	**0.4%**	**1,051**	**4.8%**	**2,111**	**9.6%**	**2,849**	**12.9%**	**2,725**	**12.4%**	**3,775**	**17.2%**	**3,275**	**14.9%**

*Excludes CIP 14.0901, 14.0903, and 14.1001 as they are reported as data science and technology degrees.