

RESEARCH BRIEF

**Enrollment in and Completion of STEM Programs by Race/Ethnicity
and Gender: Fall 2016 First-Time in College Cohort**

Introduction

Across the nation, employment opportunities are expanding rapidly for individuals in science, technology, engineering, and mathematics (STEM) fields. The Bureau of Labor Statistics (BLS) projects STEM-related jobs to grow by 13 percent between 2012 and 2022, the equivalent of about one million new jobs. Furthermore, employment in STEM jobs can also result in higher wages: BLS research shows the median wage for STEM workers to be roughly double that of all workers.¹

Due to the economic and employment opportunities of the STEM fields, many students are choosing to enroll in STEM programs in college. However, research shows that while enrollment in STEM programs is similar for all student groups, minority students may be less likely to complete STEM programs. Therefore, an analysis of completion rates in STEM fields can help colleges to better support students and close achievement gaps.²

In This Brief

This Research Brief examines enrollment in and completion of select STEM programs at NOVA by race/ethnicity and gender and campus. Analyses show first-time in college students (FTIC) who first enrolled at NOVA in Fall 2015 (Fall 2015 FTIC Cohort).

Key Findings: College-wide

- College-wide at NOVA, White male students account for the largest percentage of STEM program enrollments, as well as STEM program completions.
- Disproportionate to their enrollment sizes, female students account for the smallest percentage of STEM program enrollments and completions.
- Students of all racial/ethnic groups account for a smaller percentage of STEM program completions relative to their STEM program enrollments, suggesting many of these students do not complete the STEM program in which they enroll.

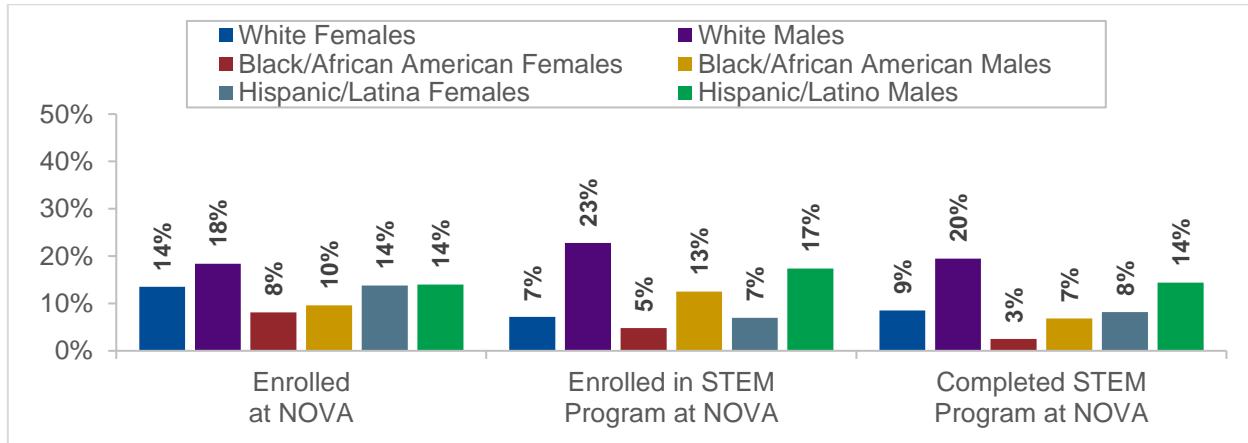
¹ Vilorio, Dennis. (2014). *STEM 101: Intro to tomorrow's jobs*. Bureau of Labor Statistics. <https://www.bls.gov/careeroutlook/2014/spring/art01.pdf>

² Annim, Erin. (2019). *A third of minority students leave STEM majors. Here's why*. EAB.

STEM Program Enrollment and Completion: College-Wide

College-wide at NOVA, Black/African American females accounted for eight percent of all Fall 2015 enrollments, but only five percent of STEM program enrollments, and three percent of all STEM program completions. Conversely, White males accounted for 18 percent of all enrollments, and 20 percent of all STEM program completions—the highest of any race/gender group.

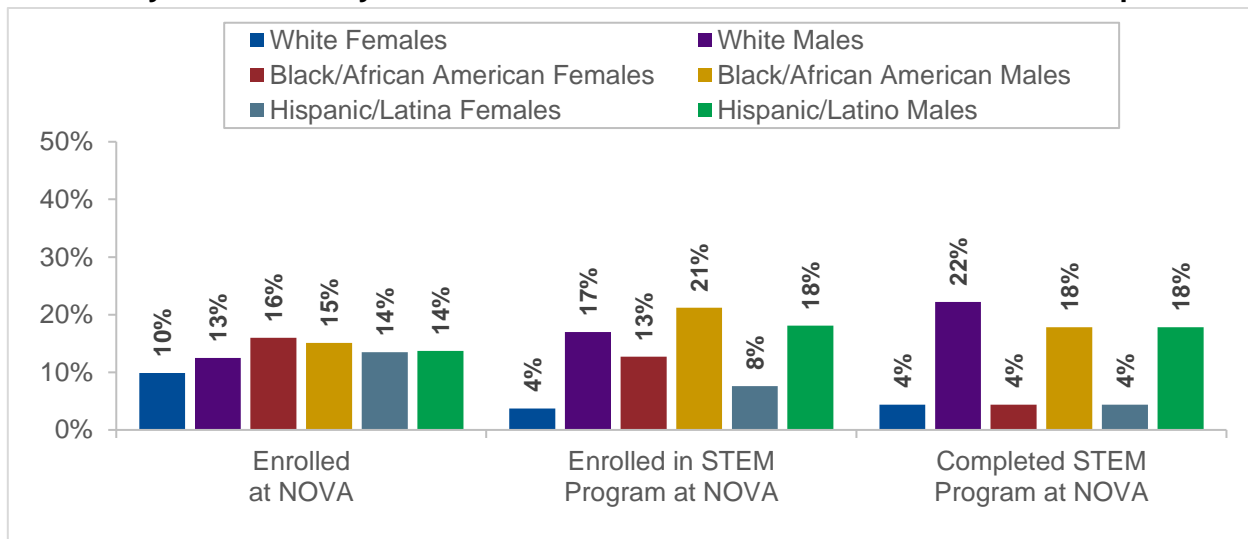
Figure 1. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2015 FTIC Cohort – College-Wide



STEM Program Enrollment and Completion: Alexandria Campus

For students who list Alexandria as their home campus, the figure below shows that Black/African American females accounted for 16 percent of all Fall 2015 enrollments (the most of any race/gender group), but only four percent of all STEM program completions. Conversely, White males accounted for only 13 percent of all FTIC enrollments, but 22 percent of STEM program completions—the highest of any group.

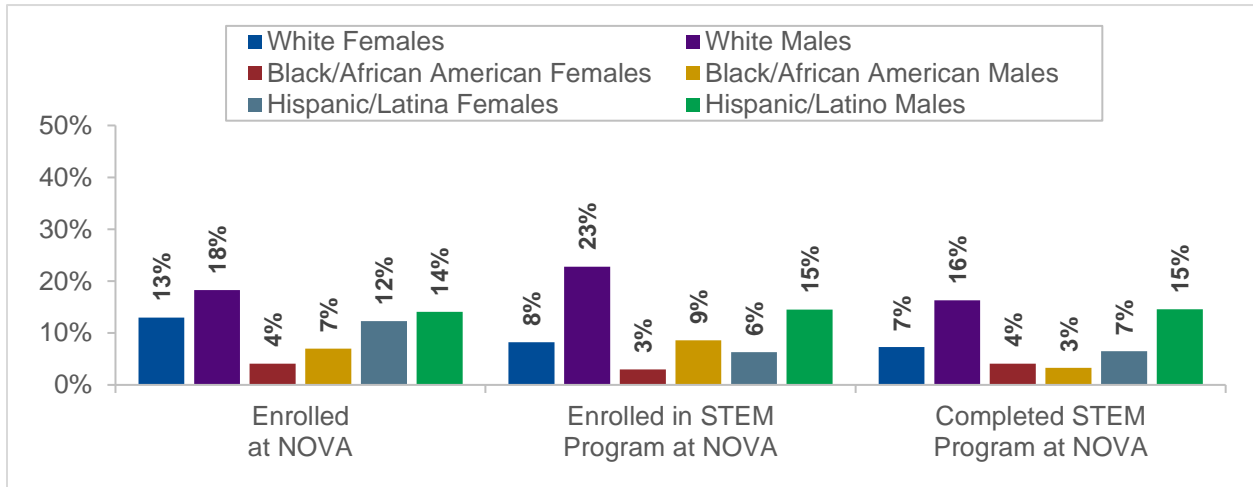
Figure 2. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2015 FTIC Cohort – Alexandria Campus



STEM Program Enrollment and Completion: Annandale Campus

For students who listed Annandale as their home campus, the figure below shows that Black/African American males accounted for seven percent of all Fall 2015 FTIC enrollments, but only three percent of all STEM program completions for this cohort, the lowest of any group. Similarly, Hispanic/Latina females accounted for 12 percent of all FTIC enrollments, but only seven percent of STEM program completions.

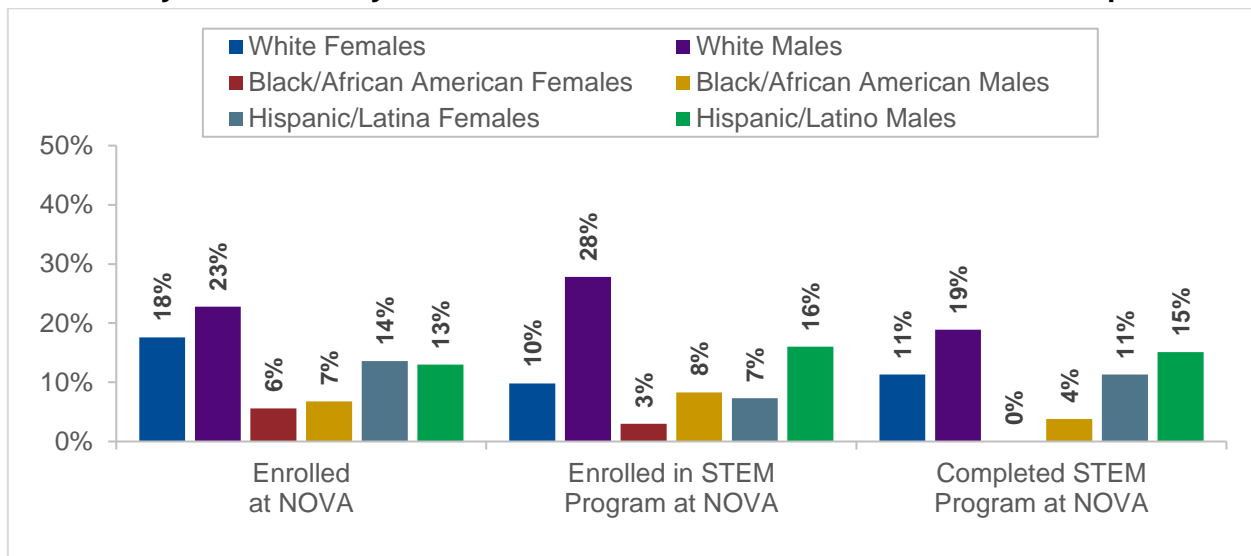
Figure 3. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2015 FTIC Cohort – Annandale Campus



STEM Program Enrollment and Completion: Loudoun Campus

For students who listed Loudoun as their home campus, the figure below shows that Black/African American females accounted for six percent of all Fall 2015 FTIC enrollments, but no STEM program completions at NOVA, the lowest of any group. However, Hispanic/Latino males accounted for 13 percent of FTIC enrollments and 15 percent of STEM program completions from this cohort.

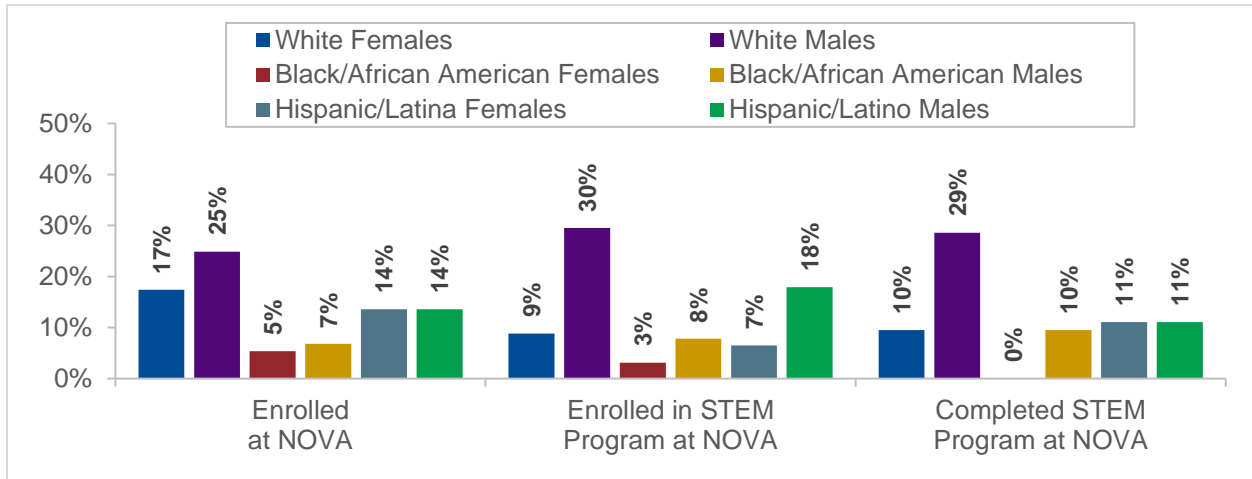
Figure 4. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2015 FTIC Cohort – Loudoun Campus



STEM Program Enrollment and Completion: Manassas Campus

For students who listed Manassas as their home campus, the figure below shows that Black/African American females accounted for five percent of all Fall 2015 FTIC enrollments, but no STEM program completions—the lowest of any group. Conversely, White males accounted for 25 percent of all FTIC enrollments, and 29 percent of all STEM program completions—the highest of any race/gender group.

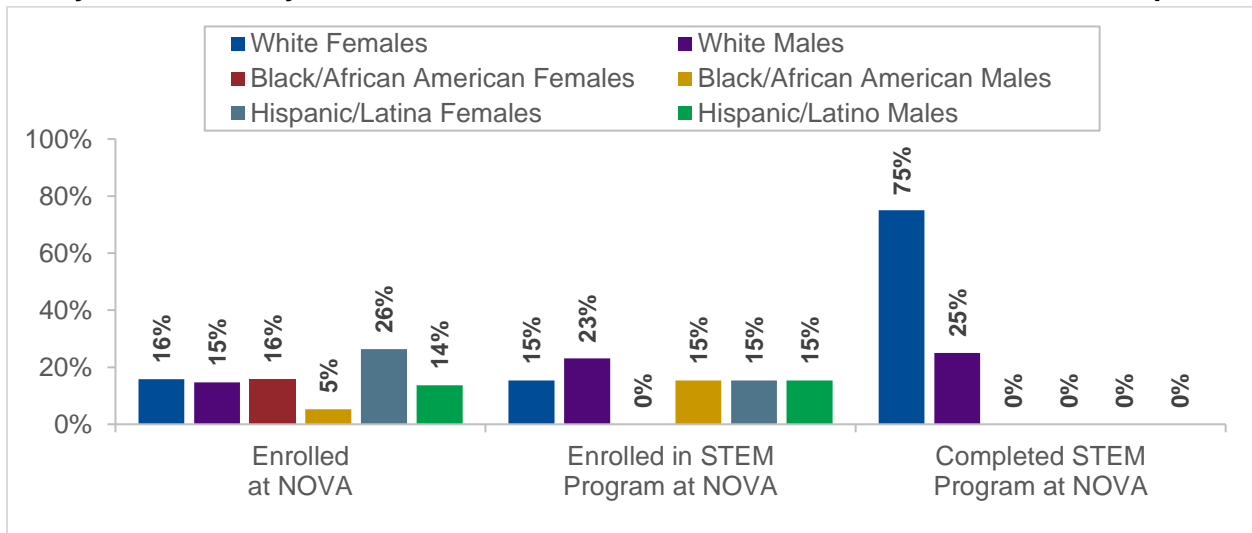
Figure 5. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2015 FTIC Cohort – Manassas Campus



STEM Program Enrollment and Completion: Medical Education Campus

The figure below shows the percentage of FTIC students who listed Medical Education as their home campus who enrolled at NOVA, enrolled in a STEM program at NOVA, and completed a STEM program at NOVA. However, since few entering FTIC students initially list Medical Education as their home campus, the numbers presented below may be skewed and not representative of actual trends.

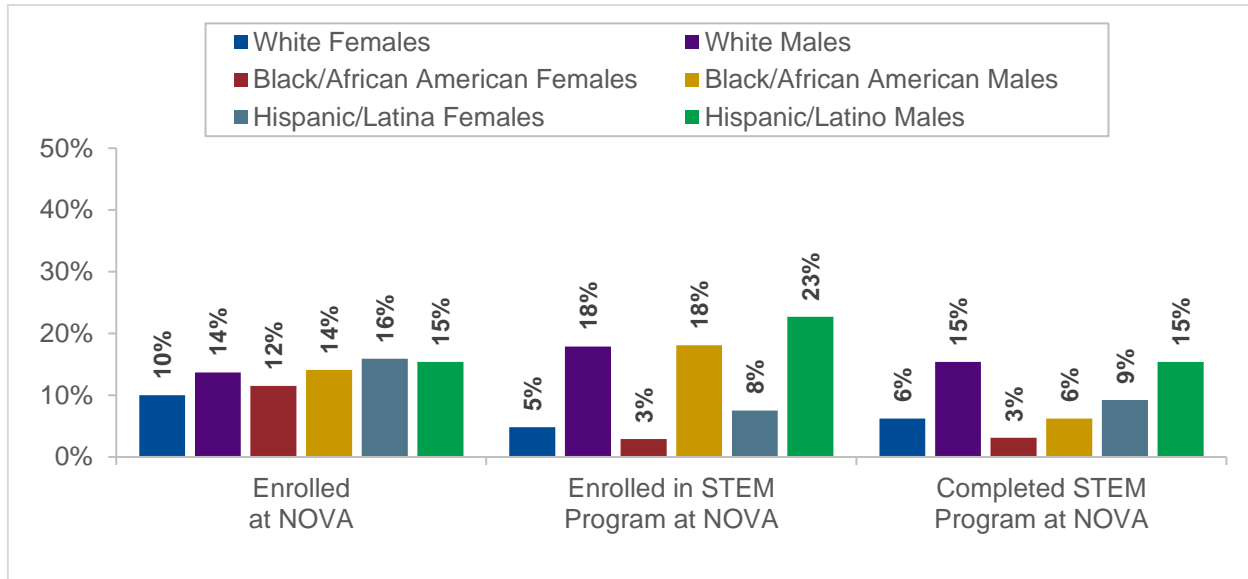
Figure 6. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2015 FTIC Cohort – Medical Education Campus



STEM Program Enrollment and Completion: Woodbridge Campus

For students who listed Woodbridge as their home campus, the figure below shows that Black/African American females accounted for 12 percent of all Fall 2015 FTIC enrollments, but only three percent of all STEM program completions—the lowest of any race/gender group. Similarly, Black/African American males accounted for 14 percent of all FTIC enrollments, but only six percent of STEM program completions. White males and Hispanic/Latino males had the highest percentage of STEM program completions for this cohort (both 15 percent).

Figure 7. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2015 FTIC Cohort – Woodbridge Campus



Appendix: Data Table: Fall 2013 through Fall 2016 FTIC Cohorts

Table 1. Select NOVA STEM Programs

Major Description	Major Description
Diagnostic Medical Sonography	Information Systems Technology
Dental Hygiene	Horticulture Technology
Occupational Therapy Assistant	Information Technology
Emergency Medical Services	CyberSecurity
Biotechnology	Fire Science Technology
Medical Laboratory Technology	Computer and Electronics Technology
Health Information Management	Engineering
Nursing	Science
Radiography	Architecture Technology
Physical Therapist Assistant	Air Conditioning and Refrigeration
Respiratory Therapy	Automotive Technology
Veterinary Technology	Construction Management Technology
Accounting	Engineering Technology
Computer Science	

Table A2. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2013 through Fall 2016 FTIC Cohorts – College-Wide

College-Wide									
Race/Ethnicity and Gender	Metrics	Fall 2013		Fall 2014		Fall 2015		Fall 2016	
		#	%	#	%	#	%	#	%
White Female	Enrolled at NOVA	1,156	14.9	1,127	14.6	1,048	13.5	985	13.4
	Enrolled in STEM Program	201	9.3	189	8.2	172	7.2	194	8.4
	Completed STEM Program	40	12.8	38	12.1	30	8.5	--	--
White Male	Enrolled at NOVA	1,394	17.9	1,355	17.5	1,422	18.4	1,349	18.4
	Enrolled in STEM Program	449	20.7	487	21.1	546	22.8	512	22.2
	Completed STEM Program	54	17.3	65	20.7	69	19.5	--	--
Black/African American Female	Enrolled at NOVA	746	9.6	684	8.8	624	8.1	633	8.6
	Enrolled in STEM Program	115	5.3	124	5.4	116	4.8	120	5.2
	Completed STEM Program	10	3.2	15	4.8	9	2.5	--	--
Black/African American Male	Enrolled at NOVA	722	9.3	698	9.0	740	9.6	622	8.5
	Enrolled in STEM Program	259	11.9	285	12.4	300	12.5	254	11.0
	Completed STEM Program	22	7.1	23	7.3	24	6.8	--	--
Hispanic/Latina Female	Enrolled at NOVA	1,057	13.6	1,090	14.1	1,068	13.8	1,096	15.0
	Enrolled in STEM Program	171	7.9	148	6.4	168	7.0	176	7.6
	Completed STEM Program	21	6.7	16	5.1	29	8.2	--	--
Hispanic/Latino Male	Enrolled at NOVA	952	12.3	1,061	13.7	1,083	14.0	1,011	13.8
	Enrolled in STEM Program	336	15.5	404	17.5	418	17.4	381	16.5
	Completed STEM Program	34	10.9	32	10.2	51	14.4	--	--

Table A3. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2013 through Fall 2016 FTIC Cohorts – Alexandria Campus

Alexandria Campus									
Race/Ethnicity and Gender	Metrics	Fall 2013		Fall 2014		Fall 2015		Fall 2016	
		#	%	#	%	#	%	#	%
White Female	Enrolled at NOVA	150	10.5	123	9.7	128	9.9	114	10.4
	Enrolled in STEM Program	31	8.1	23	6.0	17	3.7	24	7.1
	Completed STEM Program	3	8.1	4	8.2	2	4.4	--	--
White Male	Enrolled at NOVA	159	11.2	154	12.2	161	12.5	154	14.0
	Enrolled in STEM Program	56	14.6	64	16.8	78	17.0	51	15.1
	Completed STEM Program	5	13.5	9	18.4	10	22.2	--	--
Black/African American Female	Enrolled at NOVA	261	18.4	232	18.4	206	16.0	161	14.6
	Enrolled in STEM Program	36	9.4	46	12.0	58	12.7	26	7.7
	Completed STEM Program	1	2.7	6	12.2	2	4.4	--	--
Black/African American Male	Enrolled at NOVA	244	17.2	214	17.0	194	15.1	148	13.5
	Enrolled in STEM Program	75	19.5	91	23.8	97	21.2	67	19.9
	Completed STEM Program	5	13.5	7	14.3	8	17.8	--	--
Hispanic/Latina Female	Enrolled at NOVA	194	13.6	179	14.2	174	13.5	148	13.5
	Enrolled in STEM Program	34	8.9	15	3.9	35	7.6	20	5.9
	Completed STEM Program	4	10.8	3	6.1	2	4.4	--	--
Hispanic/Latino Male	Enrolled at NOVA	163	11.5	162	12.8	176	13.7	163	14.8
	Enrolled in STEM Program	60	15.6	62	16.2	83	18.1	64	19.0
	Completed STEM Program	6	16.2	6	12.2	8	17.8	--	--

Table A3. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2013 through Fall 2016 FTIC Cohorts – Annandale Campus

Annandale Campus									
Race/Ethnicity and Gender	Metrics	Fall 2013		Fall 2014		Fall 2015		Fall 2016	
		#	%	#	%	#	%	#	%
White Female	Enrolled at NOVA	304	12.4	330	13.7	300	13.0	264	11.7
	Enrolled in STEM Program	56	7.9	54	7.3	60	8.2	55	7.0
	Completed STEM Program	6	5.7	10	10.0	9	7.3	--	--
White Male	Enrolled at NOVA	441	17.9	425	17.6	421	18.3	398	17.7
	Enrolled in STEM Program	144	20.3	162	21.8	166	22.8	163	20.7
	Completed STEM Program	13	12.3	19	19.0	20	16.3	--	--

Note: Students enrolled in a STEM program in their first semester and graduated with a STEM degree within three years. The initial program may not be the same as the degree program.

Annandale Campus									
Race/Ethnicity and Gender	Metrics	Fall 2013		Fall 2014		Fall 2015		Fall 2016	
		#	%	#	%	#	%	#	%
Black/African American Female	Enrolled at NOVA	151	6.1	105	4.3	95	4.1	129	5.7
	Enrolled in STEM Program	28	3.9	17	2.3	22	3.0	36	4.6
	Completed STEM Program	6	5.7	0	0.0	5	4.1	--	--
Black/African American Male	Enrolled at NOVA	157	6.4	145	6.0	162	7.0	164	7.3
	Enrolled in STEM Program	68	9.6	60	8.1	63	8.6	69	8.8
	Completed STEM Program	9	8.5	8	8.0	4	3.3	--	--
Hispanic/Latina Female	Enrolled at NOVA	324	13.2	338	14.0	284	12.3	319	14.2
	Enrolled in STEM Program	43	6.1	50	6.7	46	6.3	58	7.4
	Completed STEM Program	7	6.6	2	2.0	8	6.5	--	--
Hispanic/Latino Male	Enrolled at NOVA	334	13.6	344	14.3	325	14.1	327	14.5
	Enrolled in STEM Program	100	14.1	127	17.1	106	14.5	117	14.9
	Completed STEM Program	10	9.4	6	6.0	18	14.6	--	--

Table A4. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2013 through Fall 2016 FTIC Cohorts – Loudoun Campus

Loudoun Campus									
Race/Ethnicity and Gender	Metrics	Fall 2013		Fall 2014		Fall 2015		Fall 2016	
		#	%	#	%	#	%	#	%
White Female	Enrolled at NOVA	254	20.2	257	18.7	234	17.6	233	18.2
	Enrolled in STEM Program	40	11.8	51	12.0	39	9.8	45	11.5
	Completed STEM Program	12	18.2	12	19.0	6	11.3	--	--
White Male	Enrolled at NOVA	302	24.0	327	23.8	303	22.8	291	22.7
	Enrolled in STEM Program	82	24.3	113	26.5	111	27.8	110	28.1
	Completed STEM Program	13	19.7	13	20.6	10	18.9	--	--
Black/African American Female	Enrolled at NOVA	70	5.6	70	5.1	75	5.6	77	6.0
	Enrolled in STEM Program	9	2.7	19	4.5	12	3.0	18	4.6
	Completed STEM Program	1	1.5	2	3.2	0	0.0	--	--
Black/African American Male	Enrolled at NOVA	62	4.9	73	5.3	91	6.8	92	7.2
	Enrolled in STEM Program	15	4.4	26	6.1	33	8.3	36	9.2
	Completed STEM Program	2	3.0	2	3.2	2	3.8	--	--
Hispanic/Latina Female	Enrolled at NOVA	139	11.1	182	13.2	181	13.6	171	13.3
	Enrolled in STEM Program	23	6.8	30	7.0	29	7.3	22	5.6
	Completed STEM Program	3	4.5	3	4.8	6	11.3	--	--
Hispanic/Latino Male	Enrolled at NOVA	142	11.3	177	12.9	173	13.0	152	11.8
	Enrolled in STEM Program	57	16.9	70	16.4	64	16.0	54	13.8
	Completed STEM Program	5	7.6	9	14.3	8	15.1	--	--

Table A5. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2013 through Fall 2016 FTIC Cohorts – Manassas Campus

Manassas Campus									
Race/Ethnicity and Gender	Metrics	Fall 2013		Fall 2014		Fall 2015		Fall 2016	
		#	%	#	%	#	%	#	%
White Female	Enrolled at NOVA	251	20.4	224	19.0	231	17.4	202	16.9
	Enrolled in STEM Program	48	13.2	27	7.9	34	8.8	30	8.3
	Completed STEM Program	10	19.2	3	6.4	6	9.5	--	--
White Male	Enrolled at NOVA	287	23.4	258	21.8	330	24.9	291	24.4
	Enrolled in STEM Program	103	28.4	84	24.7	114	29.5	112	31.1
	Completed STEM Program	13	25.0	18	38.3	18	28.6	--	--
Black/African American Female	Enrolled at NOVA	69	5.6	75	6.4	71	5.4	69	5.8
	Enrolled in STEM Program	10	2.8	14	4.1	12	3.1	10	2.8
	Completed STEM Program	0	0.0	3	6.4	0	0.0	--	--
Black/African American Male	Enrolled at NOVA	74	6.0	78	6.6	90	6.8	62	5.2
	Enrolled in STEM Program	33	9.1	34	10.0	30	7.8	25	6.9
	Completed STEM Program	1	1.9	3	6.4	6	9.5	--	--
Hispanic/Latina Female	Enrolled at NOVA	187	15.2	155	13.1	180	13.6	178	14.9
	Enrolled in STEM Program	25	6.9	19	5.6	25	6.5	30	8.3

Note: Students enrolled in a STEM program in their first semester and graduated with a STEM degree within three years. The initial program may not be the same as the degree program.

Manassas Campus									
Race/Ethnicity and Gender	Metrics	Fall 2013		Fall 2014		Fall 2015		Fall 2016	
		#	%	#	%	#	%	#	%
Hispanic/Latino Male	Completed STEM Program	4	7.7	2	4.3	7	11.1	--	--
	Enrolled at NOVA	153	12.4	170	14.4	180	13.6	151	12.7
	Enrolled in STEM Program	62	17.1	68	20.0	69	17.9	56	15.6
	Completed STEM Program	10	19.2	7	14.9	7	11.1	--	--

Table A6. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2013 through Fall 2016 FTIC Cohorts – Medical Education Campus

Medical Education Campus									
Race/Ethnicity and Gender	Metrics	Fall 2013		Fall 2014		Fall 2015		Fall 2016	
		#	%	#	%	#	%	#	%
White Female	Enrolled at NOVA	16	14.5	28	26.7	15	15.8	15	16.0
	Enrolled in STEM Program	4	30.8	6	42.9	2	15.4	4	30.8
	Completed STEM Program	4	57.1	4	80.0	3	75.0	--	--
White Male	Enrolled at NOVA	16	14.5	12	11.4	14	14.7	15	16.0
	Enrolled in STEM Program	0	0.0	1	7.1	3	23.1	2	15.4
	Completed STEM Program	1	14.3	0	0.0	1	25.0	--	--
Black/African American Female	Enrolled at NOVA	21	19.1	11	10.5	15	15.8	21	22.3
	Enrolled in STEM Program	1	7.7	1	7.1	0	0.0	0	0.0
	Completed STEM Program	0	0.0	0	0.0	0	0.0	--	--
Black/African American Male	Enrolled at NOVA	6	5.5	8	7.6	5	5.3	4	4.3
	Enrolled in STEM Program	0	0.0	1	7.1	2	15.4	1	7.7
	Completed STEM Program	0	0.0	0	0.0	0	0.0	--	--
Hispanic/Latina Female	Enrolled at NOVA	27	24.5	22	21.0	25	26.3	23	24.5
	Enrolled in STEM Program	5	38.5	1	7.1	2	15.4	4	30.8
	Completed STEM Program	0	0.0	0	0.0	0	0.0	--	--
Hispanic/Latino Male	Enrolled at NOVA	7	6.4	5	4.8	13	13.7	5	5.3
	Enrolled in STEM Program	2	15.4	1	7.1	2	15.4	0	0.0
	Completed STEM Program	0	0.0	0	0.0	0	0.0	--	--

Table A7. Enrollment in and Completion of Select STEM Programs by Race/Ethnicity and Gender: Fall 2013 through Fall 2016 FTIC Cohorts – Woodbridge Campus

Woodbridge Campus									
Race/Ethnicity and Gender	Metrics	Fall 2013		Fall 2014		Fall 2015		Fall 2016	
		#	%	#	%	#	%	#	%
White Female	Enrolled at NOVA	181	14.0	165	11.9	140	10.0	157	11.1
	Enrolled in STEM Program	22	6.1	28	7.0	20	4.8	36	8.6
	Completed STEM Program	5	11.4	5	10.0	4	6.2	--	--
White Male	Enrolled at NOVA	189	14.6	179	12.9	193	13.7	200	14.2
	Enrolled in STEM Program	64	17.7	63	15.7	74	17.9	74	17.6
	Completed STEM Program	9	20.5	6	12.0	10	15.4	--	--
Black/African American Female	Enrolled at NOVA	174	13.4	191	13.7	162	11.5	176	12.5
	Enrolled in STEM Program	31	8.6	27	6.7	12	2.9	30	7.1
	Completed STEM Program	2	4.5	4	8.0	2	3.1	--	--
Black/African American Male	Enrolled at NOVA	179	13.8	180	12.9	198	14.1	152	10.8
	Enrolled in STEM Program	68	18.8	73	18.2	75	18.1	56	13.3
	Completed STEM Program	5	11.4	3	6.0	4	6.2	--	--
Hispanic/Latina Female	Enrolled at NOVA	186	14.4	214	15.4	224	15.9	257	18.2
	Enrolled in STEM Program	41	11.3	33	8.2	31	7.5	42	10.0
	Completed STEM Program	3	6.8	6	12.0	6	9.2	--	--
Hispanic/Latino Male	Enrolled at NOVA	153	11.8	203	14.6	216	15.4	213	15.1
	Enrolled in STEM Program	55	15.2	76	19.0	94	22.7	90	21.4
	Completed STEM Program	3	6.8	4	8.0	10	15.4	--	--

Note: Students enrolled in a STEM program in their first semester and graduated with a STEM degree within three years. The initial program may not be the same as the degree program.