Appendices
STEM Starter Academy Year 3 Evaluation Report

Contents

Glossary of Terms

Early college	In Year 3, Early College activities include any SSA-funded activities designed to prepare high school students for college and career and engage them in a path to and through college.
First-time student	Student that is new to an institution and has never enrolled in an institution of higher education.
Full time student	Student enrolled 12 credit hours or more in the Fall term.
HEIRS ID	ID assigned by DHE used to track student enrollment, transfer, and completion. This is not the same as the institutional ID.
Indeterminate status	Student without a valid HEIRS ID or social security number who is not registered for a course. Student has been assigned an institutional student ID for tracking within the institution.
Part time student	Student enrolled in 1–11 credit hours during the fall term.
Similar non-participant	Student that did not participate in SSA activities but has similar demographics as SSA participants who joined SSA in the fall as a first-time, full-time freshman (gender, race/ethnicity, STEM status at time of admission, and college-math-ready status at time of admission).
SSA participants who joined SSA in Fall 2014 as first-time, full-time freshman	Cohort of students used for statistical analysis and compared with similar non-participants.
SSA primary participant	Community college student who participates in STEM Starter Academy grant-funded programs/events/activities (i.e., participant who has an ID number assigned by their college).
SSA secondary participant	Individual who is not currently enrolled at a community college and participates in STEM Starter Academy grant-funded programs/events/activities (i.e., participant who does not have an ID number assigned by his/her college).
SSA Years	Year 1 includes Spring and Summer 2014, Year 2 includes Fall 2014 and Spring and Summer 2015, and Year 3 includes Fall 2015 and Spring and Summer 2016.
Statistical Analysis	Systematic analysis of data used to make inferences and identify trends and impacts. To be distinguished from descriptive analysis, which summarizes data.
STEM	SSA uses the DHE STEM Data Dashboard definition, which identifies 12 general fields of study as STEM areas and their related CIP codes. These areas include: agriculture, architecture, biological and biomedical sciences, computer and information sciences, engineering, health professions, mathematics, mechanical and repair technologies, military technologies/technicians, physical sciences, precision production, and science technologies/technicians.
STEM enrolled at time of entry	Student who was enrolled or admitted to a STEM program when they entered an institution.
STEM pipeline	This includes students that either (1) enrolled in a STEM program when they were admitted into an institution or (2) students that earned a STEM degree or certificate.
STEM program	Degree or certificate program that falls under one of the 12 general fields of study considered STEM by DHE.
Summer bridge	SSA does not have an official definition of summer bridge programming and the SSA-affiliated versions of these programs vary considerably across sites. However, this type of programming at SSA sites generally focuses around college and STEM readiness, including STEM exploration or coursework, mathematics preparation or coursework, academic support such as tutoring or coaching, and college skills.

Table 1A: Full time and Part time STEM status at time of admission								
		2010	2011	2012	2013	2014	2015	2016
Berkshire	Full time STEM at entry	8.1%	12.5%	12.5%	12.3%	12.6%	12.6%	12.1%
	Part time STEM at entry	8.5%	14.5%	21.0%	23.1%	23.5%	23.7%	27.0%
	Full Time non STEM at entry	32.6%	27.8%	24.3%	21.9%	21.0%	21.4%	20.0%
	Part time non-STEM at entry	50.7%	45.2%	42.1%	42.7%	42.9%	42.3%	40.9%
	Total full time and part time Students	**2,730**	**2,566**	**2,503**	**2,400**	**2,230**	**2,120**	**1,959**
	Total STEM degrees and certificates earned	**114**	**155**	**121**	**134**	**144**	**167**	**138**
Bristol	Full time STEM at entry	6.6%	6.6%	6.4%	6.5%	6.5%	7.1%	8.3%
	Part time STEM at entry	8.2%	7.9%	8.0%	8.0%	7.8%	8.2%	8.9%
	Full Time non STEM at entry	42.3%	42.4%	41.3%	41.0%	40.7%	41.5%	39.0%
	Part time non-STEM at entry	43.0%	43.1%	44.3%	44.5%	45.0%	43.2%	43.9%
	Total full time and part time Students	**8,893**	**9,000**	**9,022**	**9,335**	**9,189**	**8,761**	**8,476**
	Total STEM degrees and certificates earned	**264**	**299**	**297**	**295**	**359**	**365**	**349**
Bunker Hill	Full time STEM at entry	6.1%	6.5%	6.8%	7.4%	7.5%	7.6%	9.3%
	Part time STEM at entry	10.7%	11.2%	11.6%	12.9%	13.9%	14.9%	15.7%
	Full Time non STEM at entry	27.0%	28.1%	27.1%	25.7%	24.4%	22.3%	23.2%
	Part time non-STEM at entry	56.1%	54.2%	54.5%	54.0%	54.1%	55.3%	51.8%
	Total full time and part time Students	**12,271**	**12,934**	**13,504**	**14,023**	**14,253**	**14,047**	**13,324**
	Total STEM degrees and certificates earned	**480**	**474**	**459**	**470**	**531**	**598**	**591**
Cape Cod	Full time STEM at entry	8.5%	7.1%	6.9%	7.3%	6.0%	5.3%	6.4%
	Part time STEM at entry	20.5%	21.9%	22.5%	22.5%	22.7%	21.0%	22.8%
	Full Time non STEM at entry	29.8%	26.4%	25.4%	25.0%	22.9%	25.4%	22.5%
	Part time non-STEM at entry	41.2%	44.6%	45.3%	45.1%	48.3%	48.3%	48.3%
	Total full time and part time Students	**4,482**	**4,372**	**4,201**	**4,051**	**3,818**	**3,627**	**3,319**
	Total STEM degrees and certificates earned	**226**	**235**	**251**	**239**	**277**	**212**	**218**

Table 1A: Full time and Part time STEM status at time of admission								
		2010	2011	2012	2013	2014	2015	2016
Greenfield	Full time STEM at entry	6.2%	8.8%	8.3%	10.0%	9.6%	10.0%	11.1%
	Part time STEM at entry	10.3%	9.2%	10.1%	11.5%	11.8%	11.1%	11.3%
	Full Time non STEM at entry	34.8%	32.0%	29.5%	26.4%	26.0%	26.3%	22.4%
	Part time non-STEM at entry	48.8%	50.1%	52.2%	52.1%	52.6%	52.6%	55.2%
	Total full time and part time Students	**2,583**	**2,511**	**2,437**	**2,239**	**2,127**	**2,050**	**1,957**
	Total STEM degrees and certificates earned	**126**	**139**	**118**	**126**	**138**	**137**	**124**
Holyoke	Full time STEM at entry	5.4%	5.8%	6.0%	6.4%	6.6%	11.1%	11.8%
	Part time STEM at entry	6.5%	6.6%	6.3%	7.1%	7.9%	13.1%	16.0%
	Full Time non STEM at entry	45.6%	44.4%	42.7%	42.1%	39.1%	35.9%	31.9%
	Part time non-STEM at entry	42.5%	43.3%	45.0%	44.4%	46.4%	39.8%	40.3%
	Total full time and part time Students	**7,404**	**7,144**	**7,164**	**6,740**	**6,604**	**6,285**	**5,890**
	Total STEM degrees and certificates earned	**191**	**195**	**178**	**172**	**201**	**241**	**226**
Mass Bay	Full time STEM at entry	12.6%	12.4%	8.5%	9.0%	8.4%	7.9%	8.3%
	Part time STEM at entry	23.7%	23.5%	13.0%	13.2%	11.5%	10.9%	11.2%
	Full Time non STEM at entry	28.9%	28.0%	29.4%	27.5%	26.5%	26.0%	25.1%
	Part time non-STEM at entry	34.8%	36.1%	49.1%	50.3%	53.5%	55.2%	55.3%
	Total full time and part time Students	**5,556**	**5,274**	**5,427**	**5,377**	**5,369**	**4,859**	**4,855**
	Total STEM degrees and certificates earned	**295**	**403**	**361**	**312**	**350**	**349**	**274**
Massasoit	Full time STEM at entry	4.3%	4.1%	3.7%	4.1%	3.8%	4.8%	6.1%
	Part time STEM at entry	7.5%	7.3%	7.0%	6.8%	6.7%	7.3%	8.4%
	Full Time non STEM at entry	40.8%	40.0%	40.6%	39.6%	39.2%	37.4%	35.6%
	Part time non-STEM at entry	47.4%	48.6%	48.8%	49.5%	50.3%	50.5%	50.0%
	Total full time and part time Students	**8,053**	**8,263**	**8,209**	**8,272**	**7,905**	**7,637**	**7,471**
	Total STEM degrees and certificates earned	**307**	**352**	**350**	**287**	**364**	**246**	**205**

Table 1A: Full time and Part time STEM status at time of admission								
		2010	2011	2012	2013	2014	2015	2016
Middlesex	Full time STEM at entry	7.7%	7.2%	7.4%	8.3%	9.3%	8.7%	8.5%
	Part time STEM at entry	8.6%	9.7%	10.0%	10.4%	11.3%	11.3%	11.7%
	Full Time non STEM at entry	35.4%	32.8%	31.7%	29.0%	29.1%	28.8%	26.6%
	Part time non-STEM at entry	48.3%	50.4%	50.8%	52.3%	50.3%	51.2%	53.2%
	Total full time and part time Students	**9,710**	**9,840**	**9,664**	**9,702**	**9,205**	**9,021**	**8,617**
	Total STEM degrees and certificates earned	**360**	**418**	**417**	**397**	**423**	**481**	**425**
Mt. Wachusett	Full time STEM at entry	18.1%	18.7%	19.5%	18.2%	17.3%	16.0%	15.5%
	Part time STEM at entry	24.4%	25.4%	25.6%	26.0%	28.3%	29.0%	29.0%
	Full Time non STEM at entry	24.7%	23.7%	23.4%	24.0%	23.3%	23.2%	23.3%
	Part time non-STEM at entry	32.8%	32.2%	31.5%	31.7%	31.1%	31.8%	32.2%
	Total full time and part time Students	**4,893**	**4,755**	**4,731**	**4,734**	**4,336**	**4,074**	**3,961**
	Total STEM degrees and certificates earned	**330**	**332**	**363**	**392**	**357**	**370**	**318**
North Shore	Full time STEM at entry	11.4%	11.5%	11.5%	12.4%	10.5%	10.4%	10.5%
	Part time STEM at entry	15.5%	16.9%	19.4%	21.0%	22.0%	19.5%	20.6%
	Full Time non STEM at entry	34.9%	30.7%	27.2%	26.5%	24.2%	24.6%	23.4%
	Part time non-STEM at entry	38.2%	40.8%	41.9%	40.0%	43.3%	45.5%	45.5%
	Total full time and part time Students	**7,985**	**7,974**	**7,912**	**7,750**	**7,412**	**6,961**	**6,315**
	Total STEM degrees and certificates earned	**371**	**435**	**436**	**424**	**449**	**436**	**435**
Northern Essex	Full time STEM at entry	10.6%	9.6%	10.1%	10.6%	10.6%	12.9%	14.4%
	Part time STEM at entry	21.9%	23.3%	24.0%	25.6%	27.8%	29.3%	31.6%
	Full Time non STEM at entry	27.5%	26.1%	25.4%	22.5%	22.4%	20.6%	20.2%
	Part time non-STEM at entry	40.0%	40.9%	40.5%	41.3%	39.2%	37.2%	33.8%
	Total full time and part time Students	**7,439**	**7,036**	**7,311**	**7,352**	**6,963**	**6,628**	**5,976**
	Total STEM degrees and certificates earned	**424**	**406**	**432**	**523**	**530**	**470**	**449**

Table 1A: Full time and Part time STEM status at time of admission								
		2010	2011	2012	2013	2014	2015	2016
Quinsigamond	Full time STEM at entry	5.3%	5.7%	6.6%	7.2%	8.0%	8.2%	10.4%
	Part time STEM at entry	6.3%	6.9%	7.8%	8.7%	10.3%	12.7%	13.3%
	Full Time non STEM at entry	41.7%	38.1%	37.2%	32.9%	31.5%	29.5%	27.8%
	Part time non-STEM at entry	46.7%	49.2%	48.3%	51.2%	50.2%	49.6%	48.6%
	Total full time and part time Students	**8,922**	**9,130**	**8,991**	**8,582**	**8,450**	**8,063**	**7,698**
	Total STEM degrees and certificates earned	**439**	**453**	**484**	**534**	**539**	**500**	**575**
Roxbury	Full time STEM at entry	19.3%	15.2%	19.1%	17.8%	16.2%	15.6%	13.4%
	Part time STEM at entry	34.6%	29.7%	38.8%	40.8%	42.9%	41.3%	42.1%
	Full Time non STEM at entry	18.1%	22.8%	15.6%	14.7%	15.2%	15.1%	14.7%
	Part time non-STEM at entry	28.0%	32.3%	26.5%	26.6%	25.7%	28.0%	29.8%
	Total full time and part time Students	**2,672**	**2,744**	**2,711**	**2,437**	**2,404**	**2,252**	**2,087**
	Total STEM degrees and certificates earned	**86**	**125**	**88**	**85**	**107**	**88**	**185**
STCC	Full time STEM at entry	13.0%	12.6%	12.9%	13.9%	13.8%	13.5%	14.8%
	Part time STEM at entry	12.4%	11.8%	11.6%	12.8%	12.8%	14.0%	15.6%
	Full Time non STEM at entry	31.3%	31.1%	31.4%	33.3%	32.8%	29.7%	27.0%
	Part time non-STEM at entry	43.4%	44.5%	44.1%	40.0%	40.6%	42.8%	42.6%
	Total full time and part time Students	**6,887**	**6,899**	**7,011**	**6,792**	**6,622**	**6,286**	**5,622**
	Total STEM degrees and certificates earned	**547**	**540**	**481**	**574**	**623**	**530**	**466**

Table 1B: Full time and Part time SSA participants STEM status at time of admission, Fall 2014-2016				
		2014	**2015**	**2016**
Berkshire	Full time STEM at entry	10	29	15
	Part time STEM at entry	2	4	13
	Full Time non STEM at entry	8	12	9
	Part time non-STEM at entry	47	21	23
	Total number SSA participants	**67**	**66**	**60**
Bristol	Full time STEM at entry	32	31	47
	Part time STEM at entry	5	7	19
	Full Time non STEM at entry	12	5	22
	Part time non-STEM at entry	3	5	7
	Total number SSA participants	**52**	**48**	**95**
Bunker Hill	Full time STEM at entry	18	44	21
	Part time STEM at entry	10	27	7
	Full Time non STEM at entry	5	19	22
	Part time non-STEM at entry	7	17	7
	Total number SSA participants	**40**	**107**	**57**
Cape Cod	Full time STEM at entry	38	34	26
	Part time STEM at entry	54	54	98
	Full Time non STEM at entry	113	138	92
	Part time non-STEM at entry	91	119	144
	Total number SSA participants	**296**	**345**	**360**
Greenfield	Full time STEM at entry	1	0	0
	Part time STEM at entry	0	0	0
	Full Time non STEM at entry	2	1	0
	Part time non-STEM at entry	1	9	0
	Total number SSA participants	**4**	**10**	**0**
Holyoke	Full time STEM at entry	16	0	2
	Part time STEM at entry	10	0	0
	Full Time non STEM at entry	81	0	4
	Part time non-STEM at entry	42	0	5
	Total number SSA participants	**149**	**0**	**11**
Mass Bay	Full time STEM at entry	71	96	139
	Part time STEM at entry	30	76	90
	Full Time non STEM at entry	139	35	39
	Part time non-STEM at entry	129	21	35
	Total number SSA participants	**369**	**228**	**303**
Massasoit	Full time STEM at entry	20	31	2
	Part time STEM at entry	13	14	6
	Full Time non STEM at entry	402	257	20
	Part time non-STEM at entry	163	219	10
	Total number SSA participants	**598**	**521**	**38**

Table 1B: Full time and Part time SSA participants STEM status at time of admission, Fall 2014-2016				
		2014	**2015**	**2016**
Middlesex	Full time STEM at entry	82	61	58
	Part time STEM at entry	29	52	35
	Full Time non STEM at entry	23	21	12
	Part time non-STEM at entry	31	18	14
	Total number SSA participants	**165**	**152**	**119**
Mt. Wachusett	Full time STEM at entry	0	5	0
	Part time STEM at entry	0	0	0
	Full Time non STEM at entry	0	21	18
	Part time non-STEM at entry	32	9	12
	Total number SSA participants	**32**	**35**	**30**
North Shore	Full time STEM at entry	0	90	54
	Part time STEM at entry	0	64	69
	Full Time non STEM at entry	0	52	30
	Part time non-STEM at entry	1	69	44
	Total number SSA participants	**1**	**275**	**197**
Northern Essex	Full time STEM at entry	44	9	54
	Part time STEM at entry	77	8	68
	Full Time non STEM at entry	49	26	7
	Part time non-STEM at entry	60	21	3
	Total number SSA participants	**230**	**64**	**132**
Quinsigamond	Full time STEM at entry	89	24	79
	Part time STEM at entry	79	26	55
	Full Time non STEM at entry	66	27	43
	Part time non-STEM at entry	30	16	30
	Total number SSA participants	**264**	**93**	**207**
Roxbury	Full time STEM at entry	0	9	74
	Part time STEM at entry	0	16	147
	Full Time non STEM at entry	0	4	46
	Part time non-STEM at entry	7	3	53
	Total number SSA participants	**7**	**32**	**320**
STCC	Full time STEM at entry	31	40	76
	Part time STEM at entry	3	10	21
	Full Time non STEM at entry	4	10	20
	Part time non-STEM at entry	1	11	12
	Total number SSA participants	**39**	**71**	**129**

Appendix table numbers correspond with the table numbers in the report. There are no corresponding appendix tables for Tables 2-4.

Table 5A: SSA Participants by Institution, Term, and Year				
Institution	Grant Year	Term	Primary participants	Secondary participants
Berkshire	Year 1	Spring 2014	0	84
		Summer 2014	21	144
	Year 2	Fall 2014	67	343
		Spring 2015	28	178
		Summer 2015	32	0
	Year 3	Fall 2015	66	702
		Spring 2016	68	676
		Summer 2016	52	56
	Year 4	Fall 2016	61	435
Bristol	Year 1	Spring 2014	13	392
		Summer 2014	76	219
	Year 2	Fall 2014	59	348
		Spring 2015	71	422
		Summer 2015	81	279
	Year 3	Fall 2015	52	245
		Spring 2016	108	727
		Summer 2016	142	147
	Year 4	Fall 2016	97	482
Bunker Hill	Year 1	Spring 2014	0	0
		Summer 2014	61	0
	Year 2	Fall 2014	40	0
		Spring 2015	90	0
		Summer 2015	57	0
	Year 3	Fall 2015	108	0
		Spring 2016	105	0
		Summer 2016	130	14
	Year 4	Fall 2016	60	10
Cape Cod	Year 1	Spring 2014	0	299
		Summer 2014	5	405
	Year 2	Fall 2014	300	151
		Spring 2015	320	875
		Summer 2015	103	1,212
	Year 3	Fall 2015	348	1,541
		Spring 2016	406	823
		Summer 2016	112	320
	Year 4	Fall 2016	364	629
Greenfield	Year 1	Spring 2014	0	115
		Summer 2014	18	235
	Year 2	Fall 2014	4	305
		Spring 2015	9	214
		Summer 2015	19	0
	Year 3	Fall 2015	11	0
		Spring 2016	28	500
		Summer 2016	27	70
	Year 4	Fall 2016	0	426

Table 5A: SSA Participants by Institution, Term, and Year				
Institution	Grant Year	Term	Primary participants	Secondary participants
Holyoke	Year 1	Spring 2014	0	770
		Summer 2014	72	15
	Year 2	Fall 2014	149	18
		Spring 2015	22	1,262
		Summer 2015	66	0
	Year 3	Fall 2015	0	0
		Spring 2016	14	0
		Summer 2016	41	14
	Year 4	Fall 2016	11	0
MassBay	Year 1	Spring 2014	0	477
		Summer 2014	154	0
	Year 2	Fall 2014	374	4
		Spring 2015	490	417
		Summer 2015	84	133
	Year 3	Fall 2015	231	350
		Spring 2016	294	590
		Summer 2016	169	211
	Year 4	Fall 2016	303	422
Massasoit	Year 1	Spring 2014	0	850
		Summer 2014	48	110
	Year 2	Fall 2014	643	0
		Spring 2015	715	40
		Summer 2015	29	0
	Year 3	Fall 2015	524	0
		Spring 2016	799	0
		Summer 2016	77	0
	Year 4	Fall 2016	39	0
Middlesex	Year 1	Spring 2014	101	152
		Summer 2014	45	0
	Year 2	Fall 2014	172	0
		Spring 2015	173	204
		Summer 2015	137	31
	Year 3	Fall 2015	158	493
		Spring 2016	151	1341
		Summer 2016	142	353
	Year 4	Fall 2016	120	174
Mt. Wachusett	Year 1	Spring 2014	236	449
		Summer 2014	137	0
	Year 2	Fall 2014	337	0
		Spring 2015	416	288
		Summer 2015	18	0
	Year 3	Fall 2015	385	11
		Spring 2016	120	50
		Summer 2016	69	0
	Year 4	Fall 2016	475	300

Table 5A: SSA Participants by Institution, Term, and Year				
Institution	Grant Year	Term	Primary participants	Secondary participants
North Shore	Year 1	Spring 2014	0	250
		Summer 2014	55	1,220
	Year 2	Fall 2014	75	400
		Spring 2015	126	250
		Summer 2015	70	30
	Year 3	Fall 2015	275	30
		Spring 2016	226	75
		Summer 2016	76	250
	Year 4	Fall 2016	199	300
Northern Essex	Year 1	Spring 2014	2	209
		Summer 2014	16	0
	Year 2	Fall 2014	233	138
		Spring 2015	117	13
		Summer 2015	108	11
	Year 3	Fall 2015	64	1
		Spring 2016	213	19
		Summer 2016	255	41
	Year 4	Fall 2016	132	0
Quinsigamond	Year 1	Spring 2014	79	845
		Summer 2014	36	197
	Year 2	Fall 2014	265	34
		Spring 2015	311	114
		Summer 2015	0	29
	Year 3	Fall 2015	97	389
		Spring 2016	71	926
		Summer 2016	201	741
	Year 4	Fall 2016	215	1220
Roxbury	Year 1	Spring 2014	17	240
		Summer 2014	9	0
	Year 2	Fall 2014	7	0
		Spring 2015	7	0
		Summer 2015	59	0
	Year 3	Fall 2015	32	0
		Spring 2016	294	0
		Summer 2016	136	0
	Year 4	Fall 2016	322	0
STCC	Year 1	Spring 2014	0	530
		Summer 2014	33	0
	Year 2	Fall 2014	44	0
		Spring 2015	54	741
		Summer 2015	78	17
	Year 3	Fall 2015	79	430
		Spring 2016	87	434
		Summer 2016	129	20
	Year 4	Fall 2016	159	251

Table 6A: Student Status at Point of Entry to SSA Fall 2014-2016, by Institution								
Institution	Term	New to institution				Dual-enrolled*	Continuing	Indeterminate status
		First-time freshmen	Transfer	Re-admitted/ re-activated	Non-degree			
Berkshire	Fall 2014	0	0	0	0	46	0	0
	Fall 2015	0	0	1	1	15	3	0
	Fall 2016	2	1	2	0	15	1	1
Bristol	Fall 2014	4	2	1	0	0	10	8
	Fall 2015	5	1	1	0	0	8	6
	Fall 2016	20	1	1	1	0	31	2
Bunker Hill	Fall 2014	13	9	0	1	0	17	0
	Fall 2015	11	11	1	1	0	78	1
	Fall 2016	1	1	0	0	0	32	2
Cape Cod	Fall 2014	57	20	18	7	6	189	0
	Fall 2015	71	10	14	11	9	116	0
	Fall 2016	3	0	3	0	0	98	0
Greenfield	Fall 2014	0	0	0	0	0	0	0
	Fall 2015	0	0	0	0	10	0	1
	Fall 2016	0	0	0	0	0	0	0
Holyoke	Fall 2014	57	14	5	0	1	61	0
	Fall 2015	0	0	0	0	0	0	0
	Fall 2016	1	1	2	0	1	5	0
Mass Bay	Fall 2014	128	11	0	7	1	202	5
	Fall 2015	51	5	0	4	2	77	3
	Fall 2016	55	22	9	7	4	76	0
Massasoit	Fall 2014	353	25	9	6	8	172	43
	Fall 2015	253	37	0	7	0	143	1
	Fall 2016	12	2	0	0	0	5	1
Middlesex	Fall 2014	22	11	0	3	3	106	6
	Fall 2015	10	12	0	1	1	81	5
	Fall 2016	8	9	2	0	2	53	1
Mt. Wachusett	Fall 2014	0	0	0	0	22	0	312
	Fall 2015	1	0	0	0	11	10	350
	Fall 2016	2	1	0	0	11	6	446
North Shore	Fall 2014	0	0	0	0	0	0	74
	Fall 2015	49	23	13	2	0	177	0
	Fall 2016	31	13	3	0	0	111	1
Northern Essex	Fall 2014	117	13	25	1	1	72	4
	Fall 2015	8	8	6	1	0	40	0
	Fall 2016	27	4	16	0	1	51	0
Quinsigamond	Fall 2014	32	6	9	8	4	198	4
	Fall 2015	38	5	1	1	1	31	6
	Fall 2016	83	5	2	2	4	60	9
Roxbury	Fall 2014	0	0	0	0	0	0	0
	Fall 2015	9	0	4	0	0	19	59
	Fall 2016	33	23	28	2	0	148	2
STCC	Fall 2014	1	0	0	0	0	10	0
	Fall 2015	1	0	0	0	0	4	0
	Fall 2016	4	1	1	0	0	22	2

*All dual enrolled students, some of whom are continuing and some of whom are new to the institution.

Table 7A: SSA Primary Participant Race/Ethnicity by Term and Insititution

Institution	Grant Year	Term	Non-resident Alien	Black or African American	American Indian or Alaska Native	Asian or Pacific Islander	Hispanic or Latino (of any Race)	White	Two or more races	Native Hawaiian or other Pacific Islander	Race and Ethnicity REPORTED Unknown	Race and Ethnicity Not found in HEIRS
Berkshire	Year 1	Spring 2014	0	0	0	0	0	0	0	0	0	0
		Summer 2014	0	2	0	1	1	16	1	0	0	0
	Year 2	Fall 2014	0	2	0	1	1	55	2	0	6	0
		Spring 2015	0	1	0	1	2	23	1	0	0	0
		Summer 2015	0	0	0	3	2	27	0	0	0	0
	Year 3	Fall 2015	0	2	0	4	7	52	1	0	0	0
		Spring 2016	0	1	0	4	7	55	1	0	0	0
		Summer 2016	0	2	0	3	8	27	0	0	3	9
	Year 4	Fall 2016	0	3	0	5	10	42	0	0	1	0
Bristol	Year 1	Spring 2014	0	1	0	0	0	10	2	0	0	0
		Summer 2014	0	5	0	4	7	55	5	0	0	0
	Year 2	Fall 2014	0	7	1	3	2	42	3	0	1	0
		Spring 2015	2	5	1	4	5	49	2	0	2	1
		Summer 2015	2	9	0	5	8	50	2	0	5	0
	Year 3	Fall 2015	1	7	0	4	4	31	2	0	2	1
		Spring 2016	2	11	0	4	6	78	5	0	2	0
		Summer 2016	0	13	1	3	14	98	4	0	9	0
	Year 4	Fall 2016	0	8	0	4	6	71	1	0	6	1
Bunker Hill	Year 1	Spring 2014	0	0	0	0	0	0	0	0	0	0
		Summer 2014	1	22	0	3	19	16	0	0	0	0
	Year 2	Fall 2014	0	15	0	3	10	6	3	0	3	0
		Spring 2015	5	26	0	10	19	23	4	0	3	0
		Summer 2015	7	18	0	2	12	16	0	0	2	0
	Year 3	Fall 2015	11	25	0	10	31	25	4	0	1	1
		Spring 2016	12	25	0	15	19	26	1	0	6	1
		Summer 2016	15	34	1	11	26	29	4	0	10	0
	Year 4	Fall 2016	10	12	0	4	11	19	0	0	4	0
Cape Cod	Year 1	Spring 2014	0	0	0	0	0	0	0	0	0	0
		Summer 2014	0	1	0	0	1	3	0	0	0	0
	Year 2	Fall 2014	0	27	2	5	31	217	12	0	6	0
		Spring 2015	0	24	1	8	33	232	15	0	7	0
		Summer 2015	0	11	0	5	15	63	6	0	3	0
	Year 3	Fall 2015	1	34	2	9	34	247	12	1	8	0
		Spring 2016	0	54	1	17	46	257	17	0	14	0
		Summer 2016	1	14	1	5	11	70	4	0	3	3
	Year 4	Fall 2016	2	40	1	10	41	242	17	0	11	0

Table 7A: SSA Primary Participant Race/Ethnicity by Term and Insititution

Institution	Grant Year	Term	Non-resident Alien	Black or African American	American Indian or Alaska Native	Asian or Pacific Islander	Hispanic or Latino (of any Race)	White	Two or more races	Native Hawaiian or other Pacific Islander	Race and Ethnicity REPORTED Unknown	Race and Ethnicity Not found in HEIRS
Greenfield	Year 1	Spring 2014	0	0	0	0	0	0	0	0	0	0
		Summer 2014	0	0	0	0	1	16	1	0	0	0
	Year 2	Fall 2014	0	0	0	0	0	4	0	0	0	0
		Spring 2015	0	0	0	0	1	7	1	0	0	0
		Summer 2015	0	0	0	2	0	16	1	0	0	0
	Year 3	Fall 2015	0	0	0	0	0	10	1	0	0	0
		Spring 2016	0	1	0	0	1	24	0	0	2	0
		Summer 2016	0	1	0	1	1	9	3	0	6	6
	Year 4	Fall 2016	0	0	0	0	0	0	0	0	0	0
Holyoke	Year 1	Spring 2014	0	0	0	0	0	0	0	0	0	0
		Summer 2014	0	11	0	0	12	30	0	0	11	5
	Year 2	Fall 2014	1	15	0	0	43	79	4	0	5	0
		Spring 2015	1	4	0	0	8	7	1	0	1	0
		Summer 2015	1	5	0	0	17	17	2	0	5	18
	Year 3	Fall 2015	0	0	0	0	0	0	0	0	0	0
		Spring 2016	0	0	0	0	6	7	1	0	0	0
		Summer 2016	0	5	0	2	13	16	2	0	0	3
	Year 4	Fall 2016	2	3	0	0	1	5	0	0	0	0
Mass Bay	Year 1	Spring 2014	0	0	0	0	0	0	0	0	0	0
		Summer 2014	3	14	0	16	18	72	0	0	30	1
	Year 2	Fall 2014	4	66	4	18	56	184	1	0	37	4
		Spring 2015	13	84	3	29	80	233	2	0	46	0
		Summer 2015	2	4	0	14	5	46	0	0	13	0
	Year 3	Fall 2015	8	34	2	18	34	118	1	0	16	0
		Spring 2016	10	39	1	17	38	132	1	0	21	35
		Summer 2016	0	20	0	6	16	72	0	0	15	40
	Year 4	Fall 2016	8	40	1	22	52	161	1	1	17	0
Massasoit	Year 1	Spring 2014	0	0	0	0	0	0	0	0	0	0
		Summer 2014	0	13	0	1	6	26	0	0	2	0
	Year 2	Fall 2014	2	248	0	8	56	275	30	1	23	0
		Spring 2015	2	277	2	7	60	316	35	1	15	0
		Summer 2015	0	8	0	1	2	14	3	0	1	0
	Year 3	Fall 2015	5	190	1	7	48	240	22	0	11	0
		Spring 2016	13	285	2	9	72	375	29	0	14	0
		Summer 2016	3	23	0	3	3	38	1	0	4	2
	Year 4	Fall 2016	1	14	0	3	2	16	1	0	1	1

Table 7A: SSA Primary Participant Race/Ethnicity by Term and Insititution

Institution	Grant Year	Term	Non-resident Alien	Black or African American	American Indian or Alaska Native	Asian or Pacific Islander	Hispanic or Latino (of any Race)	White	Two or more races	Native Hawaiian or other Pacific Islander	Race and Ethnicity REPORTED Unknown	Race and Ethnicity Not found in HEIRS
Middlesex	Year 1	Spring 2014	3	8	0	16	15	56	2	0	1	0
		Summer 2014	1	6	0	13	8	14	2	0	1	0
	Year 2	Fall 2014	4	23	1	41	30	72	1	0	0	0
		Spring 2015	6	20	0	36	41	61	1	0	8	0
		Summer 2015	1	12	0	29	48	45	0	0	1	1
	Year 3	Fall 2015	5	21	1	35	30	62	2	0	0	2
		Spring 2016	4	15	0	38	26	63	5	0	0	0
		Summer 2016	6	12	0	23	25	47	8	0	1	20
	Year 4	Fall 2016	4	11	0	24	21	57	3	0	0	0
Mt. Wachusett	Year 1	Spring 2014	1	9	0	7	48	114	6	0	51	0
		Summer 2014	0	12	0	3	19	92	6	0	4	1
	Year 2	Fall 2014	0	4	0	8	41	110	5	0	168	1
		Spring 2015	0	9	0	11	61	144	11	0	180	0
		Summer 2015	0	1	0	2	0	14	1	0	0	0
	Year 3	Fall 2015	1	16	1	4	61	166	2	0	131	3
		Spring 2016	1	3	1	1	8	67	4	0	33	2
		Summer 2016	0	2	0	0	6	34	2	0	23	2
	Year 4	Fall 2016	0	4	0	0	11	42	1	0	289	128
North Shore	Year 1	Spring 2014	0	0	0	0	0	0	0	0	0	0
		Summer 2014	0	6	1	2	17	25	3	0	1	0
	Year 2	Fall 2014	0	6	1	6	18	38	5	0	1	0
		Spring 2015	0	18	0	15	31	52	4	0	6	0
		Summer 2015	0	5	0	2	12	45	3	0	2	1
	Year 3	Fall 2015	0	48	1	21	76	125	4	0	0	0
		Spring 2016	1	60	1	18	48	90	4	0	1	3
		Summer 2016	0	13	1	5	16	37	3	1	0	0
	Year 4	Fall 2016	0	36	0	14	49	84	10	0	6	0
Northern Essex	Year 1	Spring 2014	0	0	0	0	2	0	0	0	0	0
		Summer 2014	0	0	0	0	13	0	0	0	0	3
	Year 2	Fall 2014	0	11	1	1	135	80	2	1	1	1
		Spring 2015	1	8	0	2	63	37	2	1	3	0
		Summer 2015	1	9	0	4	60	32	0	0	1	1
	Year 3	Fall 2015	0	3	0	2	25	31	3	0	0	0
		Spring 2016	6	10	0	9	109	76	1	1	1	0
		Summer 2016	2	12	0	7	105	112	4	3	1	9
	Year 4	Fall 2016	1	7	0	9	74	37	2	2	0	0

Table 7A: SSA Primary Participant Race/Ethnicity by Term and Insititution

Institution	Grant Year	Term	Non-resident Alien	Black or African American	American Indian or Alaska Native	Asian or Pacific Islander	Hispanic or Latino (of any Race)	White	Two or more races	Native Hawaiian or other Pacific Islander	Race and Ethnicity REPORTED Unknown	Race and Ethnicity Not found in HEIRS
Quinsigamond	Year 1	Spring 2014	2	6	1	2	18	41	4	0	3	2
		Summer 2014	0	7	0	1	10	12	3	0	2	1
	Year 2	Fall 2014	1	48	1	20	33	143	5	0	14	0
		Spring 2015	3	56	2	15	50	129	5	0	40	11
		Summer 2015	0	0	0	0	0	0	0	0	0	0
	Year 3	Fall 2015	1	13	1	5	19	48	3	0	4	3
		Spring 2016	2	4	0	5	5	49	0	0	6	0
		Summer 2016	5	32	0	12	28	108	3	0	13	0
	Year 4	Fall 2016	5	26	2	16	41	97	9	0	14	5
Roxbury	Year 1	Spring 2014	0	9	0	0	6	0	0	0	2	0
		Summer 2014	0	5	0	2	0	1	0	0	1	0
	Year 2	Fall 2014	0	1	0	0	4	0	0	0	2	0
		Spring 2015	0	1	0	0	4	0	0	0	2	0
		Summer 2015	1	2	0	0	1	0	0	0	54	1
	Year 3	Fall 2015	0	20	0	1	6	2	1	0	2	0
		Spring 2016	3	207	4	7	44	14	3	0	12	0
		Summer 2016	1	69	0	3	7	3	2	1	1	49
	Year 4	Fall 2016	4	235	3	3	48	8	6	0	13	2
STCC	Year 1	Spring 2014	0	0	0	0	0	0	0	0	0	0
		Summer 2014	0	7	0	0	8	16	2	0	0	0
	Year 2	Fall 2014	0	10	0	1	9	22	2	0	0	0
		Spring 2015	0	13	0	1	9	29	2	0	0	0
		Summer 2015	0	17	0	4	13	41	3	0	0	0
	Year 3	Fall 2015	1	18	0	5	14	38	3	0	0	0
		Spring 2016	1	20	0	5	17	41	3	0	0	0
		Summer 2016	1	25	0	5	33	60	5	0	0	0
	Year 4	Fall 2016	1	32	0	7	41	73	5	0	0	0

Table 7B: Students' Race/Ethnicity by Term, SSA Primary Participants and All Students											
	Year	Term	Non-resident Alien	Black or African American	American Indian or Alaska Native	Asian or Pacific Islander	Hispanic or Latino (of any race)	White	Two or more races	Native Hawaiian or other Pacific Islander	Race and Ethnicity Reported Unknown
SSA Primary Participants*	Year 1 (Pilot)	Spring 2014	6	33	1	25	89	221	14	0	59
		Summer 2014	5	113	1	48	139	394	23	0	63
	Year 2	Fall 2014	12	485	11	117	468	1,327	75	2	272
		Spring 2015	33	546	9	139	467	1,342	86	2	325
		Summer 2015	14	101	0	74	196	426	21	0	109
	Year 3	Fall 2015	34	431	9	125	389	1,195	61	1	185
		Spring 2016	55	735	10	149	452	1,354	75	1	153
		Summer 2016	34	277	4	89	312	760	45	5	232
	Year 4	Fall 2016	38	471	7	121	408	954	56	3	499
	SSA Total		**231**	**3,192**	**52**	**887**	**2,920**	**7,973**	**456**	**14**	**1,533**
Annual Credit Total for Segment	Year 1 (Pilot)	Spring 2014	122	3467	109	1104	7296	22966	1048	61	807
		Summer 2014	28	810	13	320	1637	6401	242	21	289
	Year 2	Fall 2014	1071	15117	384	4876	19301	57,237	2823	101	2790
		Spring 2015	328	7281	205	2002	11518	34,324	1571	56	1370
		Summer 2015	42	852	30	302	1558	5971	262	13	357
	Year 3	Fall 2015	1302	14451	381	4735	19338	53,670	2762	110	2946
		Spring 2016	372	7136	210	1960	11268	35,050	1647	69	1621
		Summer 2016	22	785	24	311	1607	5605	249	10	467
	Year 4	Fall 2016	1380	13657	385	4638	18519	49529	2688	112	3473
	CC Total		**4667**	**63,556**	**1741**	**20248**	**92,042**	**270,753**	**13292**	**553**	**14,120**

Table 8A: Primary Participant Gender by Year and Institution									
	Grant Year	Term	Male		Female		Unknown		Total
			#	%	#	%	#	%	
Berkshire	Year 1	Spring 2014	0	0.00%	0	-	0	-	0
		Summer 2014	16	76.2%	5	23.8%	0	0.0%	21
	Year 2	Fall 2014	24	35.8%	43	64.2%	0	0.0%	67
		Spring 2015	23	82.1%	5	17.9%	0	0.0%	28
		Summer 2015	19	59.4%	13	40.6%	0	0.0%	32
	Year 3	Fall 2015	35	53.0%	31	47.0%	0	0.0%	66
		Spring 2016	34	50.0%	34	50.0%	0	0.0%	68
		Summer 2016	25	48.1%	16	30.8%	11	21.2%	52
	Year 4	Fall 2016	24	39.3%	37	60.7%	0	0.0%	61
Bristol	Year 1	Spring 2014	7	53.8%	6	46.2%	0	0.0%	13
		Summer 2014	45	59.2%	31	40.8%	0	0.0%	76
	Year 2	Fall 2014	33	55.9%	25	42.4%	1	1.7%	59
		Spring 2015	45	63.4%	25	35.2%	1	1.4%	71
		Summer 2015	55	67.9%	26	32.1%	0	0.0%	81
	Year 3	Fall 2015	39	75.0%	12	23.1%	1	1.9%	52
		Spring 2016	76	70.4%	32	29.6%	0	0.0%	108
		Summer 2016	87	61.3%	55	38.7%	0	0.0%	142
	Year 4	Fall 2016	73	75.3%	23	23.7%	1	1.0%	97
Bunker Hill	Year 1	Spring 2014	0	-	0	-	0	-	0
		Summer 2014	29	47.5%	32	52.5%	0	0.0%	61
	Year 2	Fall 2014	23	57.5%	17	42.5%	0	0.0%	40
		Spring 2015	52	57.8%	38	42.2%	0	0.0%	90
		Summer 2015	29	50.9%	28	49.1%	0	0.0%	57
	Year 3	Fall 2015	60	55.6%	47	43.5%	1	0.9%	108
		Spring 2016	54	51.4%	50	47.6%	1	1.0%	105
		Summer 2016	78	60.0%	52	40.0%	0	0.0%	130
	Year 4	Fall 2016	32	53.3%	28	46.7%	0	0.0%	60
Cape Cod	Year 1	Spring 2014	0	-	0	-	0	-	0
		Summer 2014	3	60.0%	2	40.0%	0	0.0%	5
	Year 2	Fall 2014	120	40.0%	180	60.0%	0	0.0%	300
		Spring 2015	157	49.1%	163	50.9%	0	0.0%	320
		Summer 2015	46	44.7%	57	55.3%	0	0.0%	103
	Year 3	Fall 2015	161	46.3%	187	53.7%	0	0.0%	348
		Spring 2016	163	40.1%	242	59.6%	1	0.2%	406
		Summer 2016	53	47.3%	55	49.1%	4	3.6%	112
	Year 4	Fall 2016	136	37.4%	227	62.4%	1	0.3%	364

Table 8A: Primary Participant Gender by Year and Institution									
	Grant Year	Term	Male		Female		Unknown		Total
			#	%	#	%	#	%	
Greenfield	Year 1	Spring 2014	0	-	0	-	0	-	0
		Summer 2014	7	38.9%	11	61.1%	0	0.0%	18
	Year 2	Fall 2014	2	50.0%	2	50.0%	0	0.0%	4
		Spring 2015	4	44.4%	5	55.6%	0	0.0%	9
		Summer 2015	11	57.9%	8	42.1%	0	0.0%	19
	Year 3	Fall 2015	7	63.6%	4	36.4%	0	0.0%	11
		Spring 2016	6	21.4%	21	75.0%	1	3.6%	28
		Summer 2016	11	40.7%	10	37.0%	6	22.2%	27
	Year 4	Fall 2016		-	0	-	0	-	0
Holyoke	Year 1	Spring 2014	0	-	0	-	0	-	0
		Summer 2014	20	27.8%	38	52.8%	14	19.4%	72
	Year 2	Fall 2014	56	37.6%	93	62.4%	0	0.0%	149
		Spring 2015	9	40.9%	13	59.1%	0	0.0%	22
		Summer 2015	20	30.3%	29	43.9%	17	25.8%	66
	Year 3	Fall 2015	0	-	0	-	0	-	0
		Spring 2016	5	35.7%	9	64.3%	0	0.0%	14
		Summer 2016	15	36.6%	23	56.1%	3	7.3%	41
	Year 4	Fall 2016	7	63.6%	4	36.4%	0	0.0%	11
Mass Bay	Year 1	Spring 2014	0	-	0	-	0	-	0
		Summer 2014	98	63.6%	49	31.8%	7	4.5%	154
	Year 2	Fall 2014	194	51.9%	173	46.3%	7	1.9%	374
		Spring 2015	255	52.0%	231	47.1%	4	0.8%	490
		Summer 2015	55	65.5%	27	32.1%	2	2.4%	84
	Year 3	Fall 2015	160	69.3%	66	28.6%	5	2.2%	231
		Spring 2016	150	51.0%	104	35.4%	40	13.6%	294
		Summer 2016	82	48.5%	44	26.0%	43	25.4%	169
	Year 4	Fall 2016	221	72.9%	79	26.1%	3	1.0%	303
Massasoit	Year 1	Spring 2014	0	-	0	-	0	-	0
		Summer 2014	26	54.2%	22	45.8%	0	0.0%	48
	Year 2	Fall 2014	318	49.5%	325	50.5%	0	0.0%	643
		Spring 2015	323	45.2%	392	54.8%	0	0.0%	715
		Summer 2015	14	48.3%	15	51.7%	0	0.0%	29
	Year 3	Fall 2015	215	41.0%	309	59.0%	0	0.0%	524
		Spring 2016	344	43.1%	455	56.9%	0	0.0%	799
		Summer 2016	29	37.7%	46	59.7%	2	2.6%	77
	Year 4	Fall 2016	10	25.6%	28	71.8%	1	2.6%	39

Table 8A: Primary Participant Gender by Year and Institution									
	Grant Year	Term	Male		Female		Unknown		Total
			#	%	#	%	#	%	
Middlesex	Year 1	Spring 2014	44	43.6%	57	56.4%	0	0.0%	101
		Summer 2014	26	57.8%	19	42.2%	0	0.0%	45
	Year 2	Fall 2014	77	44.8%	95	55.2%	0	0.0%	172
		Spring 2015	59	34.1%	110	63.6%	4	2.3%	173
		Summer 2015	53	38.7%	83	60.6%	1	0.7%	137
	Year 3	Fall 2015	48	30.4%	108	68.4%	2	1.3%	158
		Spring 2016	61	40.4%	90	59.6%	0	0.0%	151
		Summer 2016	58	40.8%	64	45.1%	20	14.1%	142
	Year 4	Fall 2016	42	35.0%	78	65.0%	0	0.0%	120
Mt. Wachusett	Year 1	Spring 2014	92	39.0%	90	38.1%	54	22.9%	236
		Summer 2014	38	27.7%	92	67.2%	7	5.1%	137
	Year 2	Fall 2014	90	26.7%	87	25.8%	160	47.5%	337
		Spring 2015	125	30.0%	113	27.2%	178	42.8%	416
		Summer 2015	8	44.4%	9	50.0%	1	5.6%	18
	Year 3	Fall 2015	166	43.1%	131	34.0%	88	22.9%	385
		Spring 2016	60	50.0%	42	35.0%	18	15.0%	120
		Summer 2016	35	50.7%	30	43.5%	4	5.8%	69
	Year 4	Fall 2016	115	24.2%	85	17.9%	275	57.9%	475
North Shore	Year 1	Spring 2014	0	-	0	-	0	-	0
		Summer 2014	31	56.4%	24	43.6%	0	0.0%	55
	Year 2	Fall 2014	30	40.0%	44	58.7%	1	1.3%	75
		Spring 2015	57	45.2%	69	54.8%	0	0.0%	126
		Summer 2015	48	68.6%	21	30.0%	1	1.4%	70
	Year 3	Fall 2015	128	46.5%	147	53.5%	0	0.0%	275
		Spring 2016	104	46.0%	119	52.7%	3	1.3%	226
		Summer 2016	38	50.0%	38	50.0%	0	0.0%	76
	Year 4	Fall 2016	74	37.2%	125	62.8%	0	0.0%	199
Northern Essex	Year 1	Spring 2014	2	100.0%	0	0.0%	0	0.0%	2
		Summer 2014	6	37.5%	7	43.8%	3	18.8%	16
	Year 2	Fall 2014	71	30.5%	161	69.1%	1	0.4%	233
		Spring 2015	41	35.0%	76	65.0%	0	0.0%	117
		Summer 2015	30	27.8%	77	71.3%	1	0.9%	108
	Year 3	Fall 2015	30	46.9%	34	53.1%	0	0.0%	64
		Spring 2016	99	46.5%	114	53.5%	0	0.0%	213
		Summer 2016	140	54.9%	106	41.6%	9	3.5%	255
	Year 4	Fall 2016	59	44.7%	73	55.3%	0	0.0%	132

Table 8A: Primary Participant Gender by Year and Institution									
	Grant Year	Term	Male		Female		Unknown		Total
			#	%	#	%	#	%	
Quinsigamond	Year 1	Spring 2014	33	41.8%	43	54.4%	3	3.8%	79
		Summer 2014	21	58.3%	14	38.9%	1	2.8%	36
	Year 2	Fall 2014	163	61.5%	102	38.5%	0	0.0%	265
		Spring 2015	185	59.5%	109	35.0%	17	5.5%	311
		Summer 2015	0	-	0	-	0	-	0
	Year 3	Fall 2015	54	55.7%	40	41.2%	3	3.1%	97
		Spring 2016	50	70.4%	21	29.6%	0	0.0%	71
		Summer 2016	144	71.6%	57	28.4%	0	0.0%	201
	Year 4	Fall 2016	126	58.6%	84	39.1%	5	2.3%	215
Roxbury	Year 1	Spring 2014	4	23.5%	13	76.5%	0	0.0%	17
		Summer 2014	0	0.0%	9	100.0%	0	0.0%	9
	Year 2	Fall 2014	4	57.1%	3	42.9%	0	0.0%	7
		Spring 2015	4	57.1%	3	42.9%	0	0.0%	7
		Summer 2015	2	3.4%	4	6.8%	53	89.8%	59
	Year 3	Fall 2015	10	31.3%	22	68.8%	0	0.0%	32
		Spring 2016	84	28.6%	210	71.4%	0	0.0%	294
		Summer 2016	20	14.7%	67	49.3%	49	36.0%	136
	Year 4	Fall 2016	82	25.5%	238	73.9%	2	0.6%	322
STCC	Year 1	Spring 2014	0	-	0	-	0	-	0
		Summer 2014	14	42.4%	19	57.6%	0	0.0%	33
	Year 2	Fall 2014	20	45.5%	24	54.5%	0	0.0%	44
		Spring 2015	28	51.9%	26	48.1%	0	0.0%	54
		Summer 2015	48	61.5%	30	38.5%	0	0.0%	78
	Year 3	Fall 2015	45	57.0%	34	43.0%	0	0.0%	79
		Spring 2016	47	54.0%	40	46.0%	0	0.0%	87
		Summer 2016	69	53.5%	60	46.5%	0	0.0%	129
	Year 4	Fall 2016	85	53.5%	74	46.5%	0	0.0%	159

Table 8B: 2014 - 2016 Students Enrolled in STEM Program by Race and Gender*								
				Black	**Hispanic**	**White**	**Asian**	**Other**
SSA Primary Participants	Enrolled in STEM program at time of entry	Fall 2014	Male	62	68	200	33	31
			Female	60	99	171	22	21
			Unknown	0	0	0	0	0
		Fall 2015	Male	91	78	228	50	35
			Female	62	80	164	36	34
			Unknown	0	0	2	0	1
		Fall 2016	Male	112	122	298	45	53
			Female	197	146	230	39	49
			Unknown	0	0	2	0	0
	Not enrolled in STEM program at time of entry	Fall 2014	Male	149	102	372	19	52
			Female	173	130	447	28	74
			Unknown	0	1	1	0	1
		Fall 2015	Male	101	72	294	14	35
			Female	155	102	351	22	37
			Unknown	0	0	2	0	1
		Fall 2016	Male	47	59	178	22	29
			Female	100	63	208	14	43
			Unknown	1	0	0	0	1
				Black	**Hispanic**	**White**	**Asian**	**Other**
All Community Colleges	Enrolled in STEM program at time of entry	Fall 2014	Male	1670	1924	5982	831	770
			Female	2082	2619	7613	586	675
			Unknown	3	3	23	2	7
		Fall 2015	Male	1694	1956	5891	816	856
			Female	1987	2793	7232	581	712
			Unknown	2	5	23	2	5
		Fall 2016	Male	1636	1982	5940	848	898
			Female	1932	2846	7239	615	789
			Unknown	8	12	31	5	21
	Not enrolled in STEM program at time of entry	Fall 2014	Male	4520	5118	17556	1403	2315
			Female	6836	9617	25996	2051	3367
			Unknown	6	20	67	3	35
		Fall 2015	Male	4201	5054	16187	1331	2366
			Female	6560	9517	24270	2003	3517
			Unknown	7	13	67	2	45
		Fall 2016	Male	3888	4671	14583	1295	2423
			Female	6166	8950	21591	1863	3705
			Unknown	27	58	145	12	202

* only includes students with a valid HEIRS ID

Table 9A: Primary Participants' Service Descriptions by Institution, Term, and Year						
Institution	**Grant Year**	**Term**	**Number of primary participants**	**Number of primary participants who received direct (SSA grant subsidized) financial support**	**Number of primary participants who received extra or targeted supports**	**Number of primary participants who received targeted STEM pathway and/or STEM career counseling**
Berkshire	Year 1	Spring 2014	0	0	0	0
		Summer 2014	21	21	21	21
	Year 2	Fall 2014	67	67	21	18
		Spring 2015	28	23	19	19
		Summer 2015	32	32	32	32
	Year 3	Fall 2015	66	57	31	45
		Spring 2016	68	54	16	33
		Summer 2016	52	36	0	40
	Year 4	Fall 2016	61	49	46	34
Bristol	Year 1	Spring 2014	13	13	13	13
		Summer 2014	76	76	34	45
	Year 2	Fall 2014	59	17	39	49
		Spring 2015	71	18	52	29
		Summer 2015	81	35	21	27
	Year 3	Fall 2015	52	15	22	37
		Spring 2016	108	21	44	64
		Summer 2016	142	77	56	47
	Year 4	Fall 2016	97	0	58	53
Bunker Hill	Year 1	Spring 2014	0	0	0	0
		Summer 2014	61	61	61	61
	Year 2	Fall 2014	40	40	40	40
		Spring 2015	90	90	90	90
		Summer 2015	57	57	57	57
	Year 3	Fall 2015	108	108	108	108
		Spring 2016	105	0	105	105
		Summer 2016	130	114	130	130
	Year 4	Fall 2016	60	0	60	0

Table 9A: Primary Participants' Service Descriptions by Institution, Term, and Year						
Institution	**Grant Year**	**Term**	**Number of primary participants**	**Number of primary participants who received direct (SSA grant subsidized) financial support**	**Number of primary participants who received extra or targeted supports**	**Number of primary participants who received targeted STEM pathway and/or STEM career counseling**
Cape Cod	Year 1	Spring 2014	0	0	0	0
		Summer 2014	5	5	5	5
	Year 2	Fall 2014	300	29	300	46
		Spring 2015	320	37	98	98
		Summer 2015	103	31	103	103
	Year 3	Fall 2015	348	20	273	99
		Spring 2016	406	28	330	89
		Summer 2016	112	38	110	55
	Year 4	Fall 2016	364	10	313	67
Greenfield	Year 1	Spring 2014	0	0	0	0
		Summer 2014	18	18	12	18
	Year 2	Fall 2014	4	0	4	4
		Spring 2015	9	0	7	0
		Summer 2015	19	19	19	19
	Year 3	Fall 2015	11	11	11	0
		Spring 2016	28	28	4	0
		Summer 2016	27	27	22	22
	Year 4	Fall 2016	0	0	0	0
Holyoke	Year 1	Spring 2014	0	0	0	0
		Summer 2014	72	72	71	71
	Year 2	Fall 2014	149	141	149	7
		Spring 2015	22	17	17	19
		Summer 2015	66	41	66	66
	Year 3	Fall 2015	0	0	0	0
		Spring 2016	14	14	14	14
		Summer 2016	41	41	41	41
	Year 4	Fall 2016	11	11	11	7

Table 9A: Primary Participants' Service Descriptions by Institution, Term, and Year						
Institution	**Grant Year**	**Term**	**Number of primary participants**	**Number of primary participants who received direct (SSA grant subsidized) financial support**	**Number of primary participants who received extra or targeted supports**	**Number of primary participants who received targeted STEM pathway and/or STEM career counseling**
MassBay	Year 1	Spring 2014	0	0	0	0
		Summer 2014	154	154	154	154
	Year 2	Fall 2014	374	5	306	70
		Spring 2015	490	15	292	264
		Summer 2015	84	14	20	72
	Year 3	Fall 2015	231	1	41	197
		Spring 2016	294	1	51	244
		Summer 2016	169	33	59	147
	Year 4	Fall 2016	303	2	54	252
Massasoit	Year 1	Spring 2014	0	0	0	0
		Summer 2014	48	48	48	0
	Year 2	Fall 2014	643	643	643	0
		Spring 2015	715	715	702	0
		Summer 2015	29	29	29	0
	Year 3	Fall 2015	524	524	524	0
		Spring 2016	799	799	799	0
		Summer 2016	77	77	77	0
	Year 4	Fall 2016	39	39	39	0
Middlesex	Year 1	Spring 2014	101	26	20	45
		Summer 2014	45	33	45	33
	Year 2	Fall 2014	172	16	144	148
		Spring 2015	173	9	173	97
		Summer 2015	137	47	137	120
	Year 3	Fall 2015	158	4	158	146
		Spring 2016	151	7	151	66
		Summer 2016	142	113	142	64
	Year 4	Fall 2016	120	8	117	36

Table 9A: Primary Participants' Service Descriptions by Institution, Term, and Year						
Institution	**Grant Year**	**Term**	**Number of primary participants**	**Number of primary participants who received direct (SSA grant subsidized) financial support**	**Number of primary participants who received extra or targeted supports**	**Number of primary participants who received targeted STEM pathway and/or STEM career counseling**
Mt. Wachusett	Year 1	Spring 2014	236	0	0	0
		Summer 2014	137	137	0	23
	Year 2	Fall 2014	337	0	0	235
		Spring 2015	416	0	0	8
		Summer 2015	18	18	2	16
	Year 3	Fall 2015	385	0	50	76
		Spring 2016	120	0	32	83
		Summer 2016	69	69	69	56
	Year 4	Fall 2016	475	0	21	161
North Shore	Year 1	Spring 2014	0	0	0	0
		Summer 2014	55	55	55	31
	Year 2	Fall 2014	75	75	75	0
		Spring 2015	126	126	126	0
		Summer 2015	70	33	70	19
	Year 3	Fall 2015	275	22	253	0
		Spring 2016	226	13	226	103
		Summer 2016	76	76	11	39
	Year 4	Fall 2016	199	199	199	0
Northern Essex	Year 1	Spring 2014	2	2	0	0
		Summer 2014	16	0	0	16
	Year 2	Fall 2014	233	5	233	228
		Spring 2015	117	20	100	0
		Summer 2015	108	71	34	0
	Year 3	Fall 2015	64	0	0	0
		Spring 2016	213	7	152	0
		Summer 2016	255	0	26	0
	Year 4	Fall 2016	132	0	101	0

Table 9A: Primary Participants' Service Descriptions by Institution, Term, and Year						
Institution	**Grant Year**	**Term**	**Number of primary participants**	**Number of primary participants who received direct (SSA grant subsidized) financial support**	**Number of primary participants who received extra or targeted supports**	**Number of primary participants who received targeted STEM pathway and/or STEM career counseling**
Quinsigamond	Year 1	Spring 2014	79	53	53	26
		Summer 2014	36	36	0	18
	Year 2	Fall 2014	265	265	0	58
		Spring 2015	311	0	177	311
		Summer 2015	0	0	0	0
	Year 3	Fall 2015	97	0	89	83
		Spring 2016	71	71	15	38
		Summer 2016	201	201	0	148
	Year 4	Fall 2016	215	1	102	137
Roxbury	Year 1	Spring 2014	17	17	17	17
		Summer 2014	9	9	9	9
	Year 2	Fall 2014	7	7	7	7
		Spring 2015	7	7	7	7
		Summer 2015	59	52	0	0
	Year 3	Fall 2015	32	0	12	0
		Spring 2016	294	0	267	0
		Summer 2016	136	42	67	0
	Year 4	Fall 2016	322	0	322	0
STCC	Year 1	Spring 2014	0	0	0	0
		Summer 2014	33	33	33	0
	Year 2	Fall 2014	44	31	41	3
		Spring 2015	54	2	30	0
		Summer 2015	78	28	28	28
	Year 3	Fall 2015	79	4	19	14
		Spring 2016	87	2	34	17
		Summer 2016	129	47	54	49
	Year 4	Fall 2016	159	24	84	12

Table 10A: Fall 2016 Progress and Completion Rates for SSA Primary Participants, by Starting Term and Institution										
Institution	Term student began participation in SSA	#	Graduated or Completed		Retained to Fall 2016 at same institution		Transferred		Indeterminate status	
			#	%	#	%	#	%	#	%
Berkshire	Spring 2014	0	0	-	0	-	0	-	0	-
	Summer 2014	21	2	9.5%	7	33.3%	3	14.3%	9	42.9%
	Fall 2014	46	0	0.0%	7	15.2%	31	67.4%	8	17.4%
	Spring 2015	11	0	0.0%	4	36.4%	5	45.5%	2	18.2%
	Summer 2015	31	0	0.0%	22	71.0%	1	3.2%	8	25.8%
	Fall 2015	20	1	5.0%	1	5.0%	10	50.0%	8	40.0%
	Spring 2016	11	0	0.0%	2	18.2%	0	0.0%	9	81.8%
	Summer 2016	26	0	0.0%	26	100.0%	0	0.0%	0	0.0%
	Fall 2016	22	0	0.0%	21	95.5%	0	0.0%	1	4.5%
Bristol	Spring 2014	13	0	0.0%	4	30.8%	1	7.7%	8	61.5%
	Summer 2014	70	27	38.6%	20	28.6%	6	8.6%	17	24.3%
	Fall 2014	23	8	34.8%	4	17.4%	4	17.4%	7	30.4%
	Spring 2015	49	21	42.9%	9	18.4%	1	2.0%	18	36.7%
	Summer 2015	55	2	3.6%	32	58.2%	2	3.6%	19	34.5%
	Fall 2015	20	0	0.0%	13	65.0%	2	10.0%	5	25.0%
	Spring 2016	76	6	7.9%	54	71.1%	2	2.6%	14	18.4%
	Summer 2016	109	0	0.0%	67	61.5%	11	10.1%	31	28.4%
	Fall 2016	55	0	0.0%	54	98.2%	0	0.0%	1	1.8%
Bunker Hill	Spring 2014	0	0	-	0	-	0	-	0	-
	Summer 2014	58	5	8.6%	12	20.7%	1	1.7%	40	69.0%
	Fall 2014	40	0	0.0%	15	37.5%	2	5.0%	23	57.5%
	Spring 2015	87	4	4.6%	45	51.7%	4	4.6%	34	39.1%
	Summer 2015	54	0	0.0%	42	77.8%	3	5.6%	9	16.7%
	Fall 2015	102	14	13.7%	43	42.2%	9	8.8%	36	35.3%
	Spring 2016	74	10	13.5%	50	67.6%	5	6.8%	9	12.2%
	Summer 2016	118	0	0.0%	114	96.6%	0	0.0%	4	3.4%
	Fall 2016	36	0	0.0%	35	97.2%	0	0.0%	1	2.8%
Cape Cod	Spring 2014	0	0	-	0	-	0	-	0	-
	Summer 2014	5	1	20.0%	2	40.0%	2	40.0%	0	0.0%
	Fall 2014	297	75	25.3%	85	28.6%	25	8.4%	112	37.7%
	Spring 2015	193	48	24.9%	54	28.0%	25	13.0%	66	34.2%
	Summer 2015	57	5	8.8%	29	50.9%	4	7.0%	19	33.3%
	Fall 2015	231	30	13.0%	123	53.2%	17	7.4%	61	26.4%
	Spring 2016	235	16	6.8%	159	67.7%	4	1.7%	56	23.8%
	Summer 2016	51	1	2.0%	39	76.5%	1	2.0%	10	19.6%
	Fall 2016	104	0	0.0%	104	100.0%	0	0.0%	0	0.0%
Greenfield	Spring 2014	0	0	-	0	-	0	-	0	-
	Summer 2014	14	2	14.3%	5	35.7%	1	7.1%	6	42.9%
	Fall 2014	0	0	-	0	-	0	-	0	-
	Spring 2015	0	0	-	0	-	0	-	0	-
	Summer 2015	14	0	0.0%	6	42.9%	4	28.6%	4	28.6%
	Fall 2015	10	0	0.0%	0	0.0%	5	50.0%	5	50.0%
	Spring 2016	27	4	14.8%	16	59.3%	2	7.4%	5	18.5%
	Summer 2016	20	0	0.0%	18	90.0%	1	5.0%	1	5.0%
	Fall 2016	0	0	-	0	-	0	-	0	-

Table 10A: Fall 2016 Progress and Completion Rates for SSA Primary Participants, by Starting Term and Institution										
Institution	Term student began participation in SSA	#	Graduated or Completed		Retained to Fall 2016 at same institution		Transferred		Indeterminate status	
			#	%	#	%	#	%	#	%
Holyoke	Spring 2014	0	0	-	0	-	0	-	0	-
	Summer 2014	55	10	18.2%	13	23.6%	5	9.1%	27	49.1%
	Fall 2014	138	13	9.4%	44	31.9%	8	5.8%	73	52.9%
	Spring 2015	13	4	30.8%	3	23.1%	0	0.0%	6	46.2%
	Summer 2015	41	4	9.8%	21	51.2%	3	7.3%	13	31.7%
	Fall 2015	0	0	-	0	-	0	-	0	-
	Spring 2016	14	1	7.1%	11	78.6%	0	0.0%	2	14.3%
	Summer 2016	37	0	0.0%	34	91.9%	1	2.7%	2	5.4%
	Fall 2016	10	0	0.0%	10	100.0%	0	0.0%	0	0.0%
Mass Bay	Spring 2014	0	0	-	0	-	0	-	0	-
	Summer 2014	89	21	23.6%	18	20.2%	6	6.7%	44	49.4%
	Fall 2014	350	34	9.7%	110	31.4%	27	7.7%	179	51.1%
	Spring 2015	258	46	17.8%	82	31.8%	21	8.1%	109	42.2%
	Summer 2015	15	3	20.0%	5	33.3%	0	0.0%	7	46.7%
	Fall 2015	142	17	12.0%	70	49.3%	8	5.6%	47	33.1%
	Spring 2016	139	4	2.9%	101	72.7%	14	10.1%	20	14.4%
	Summer 2016	66	0	0.0%	54	81.8%	2	3.0%	10	15.2%
	Fall 2016	173	0	0.0%	173	100.0%	0	0.0%	0	0.0%
Massasoit	Spring 2014	0	0	-	0	-	0	-	0	-
	Summer 2014	45	2	4.4%	14	31.1%	7	15.6%	22	48.9%
	Fall 2014	590	27	4.6%	186	31.5%	48	8.1%	329	55.8%
	Spring 2015	476	25	5.3%	197	41.4%	22	4.6%	232	48.7%
	Summer 2015	16	0	0.0%	10	62.5%	2	12.5%	4	25.0%
	Fall 2015	442	9	2.0%	224	50.7%	16	3.6%	193	43.7%
	Spring 2016	512	5	1.0%	303	59.2%	12	2.3%	192	37.5%
	Summer 2016	41	0	0.0%	34	82.9%	1	2.4%	6	14.6%
	Fall 2016	19	0	0.0%	19	100.0%	0	0.0%	0	0.0%
Middlesex	Spring 2014	100	57	57.0%	14	14.0%	4	4.0%	25	25.0%
	Summer 2014	41	6	14.6%	17	41.5%	5	12.2%	13	31.7%
	Fall 2014	149	54	36.2%	44	29.5%	11	7.4%	40	26.8%
	Spring 2015	114	39	34.2%	36	31.6%	5	4.4%	34	29.8%
	Summer 2015	107	36	33.6%	29	27.1%	10	9.3%	32	29.9%
	Fall 2015	107	14	13.1%	56	52.3%	3	2.8%	34	31.8%
	Spring 2016	84	7	8.3%	61	72.6%	4	4.8%	12	14.3%
	Summer 2016	72	0	0.0%	61	84.7%	4	5.6%	7	9.7%
	Fall 2016	76	0	0.0%	75	98.7%	0	0.0%	1	1.3%
Mt. Wachusett	Spring 2014	153	7	4.6%	32	20.9%	12	7.8%	102	66.7%
	Summer 2014	113	23	20.4%	36	31.9%	11	9.7%	43	38.1%
	Fall 2014	96	0	0.0%	46	47.9%	9	9.4%	41	42.7%
	Spring 2015	69	1	1.4%	23	33.3%	2	2.9%	43	62.3%
	Summer 2015	8	0	0.0%	5	62.5%	1	12.5%	2	25.0%
	Fall 2015	113	0	0.0%	93	82.3%	7	6.2%	13	11.5%
	Spring 2016	29	1	3.4%	25	86.2%	0	0.0%	3	10.3%
	Summer 2016	61	0	0.0%	38	62.3%	0	0.0%	23	37.7%
	Fall 2016	22	0	0.0%	20	90.9%	0	0.0%	2	9.1%

Table 10A: Fall 2016 Progress and Completion Rates for SSA Primary Participants, by Starting Term and Institution										
Institution	Term student began participation in SSA	#	Graduated or Completed		Retained to Fall 2016 at same institution		Transferred		Indeterminate status	
			#	%	#	%	#	%	#	%
North Shore	Spring 2014	0	0	-	0	-	0	-	0	-
	Summer 2014	55	3	5.5%	9	16.4%	3	5.5%	40	72.7%
	Fall 2014	42	0	0.0%	10	23.8%	5	11.9%	27	64.3%
	Spring 2015	96	4	4.2%	10	10.4%	4	4.2%	78	81.3%
	Summer 2015	63	3	4.8%	20	31.7%	4	6.3%	36	57.1%
	Fall 2015	264	30	11.4%	139	52.7%	19	7.2%	76	28.8%
	Spring 2016	182	28	15.4%	102	56.0%	6	3.3%	46	25.3%
	Summer 2016	59	0	0.0%	37	62.7%	0	0.0%	22	37.3%
	Fall 2016	159	0	0.0%	159	100.0%	0	0.0%	0	0.0%
Northern Essex	Spring 2014	2	1	50.0%	0	0.0%	1	50.0%	0	0.0%
	Summer 2014	13	0	0.0%	7	53.8%	0	0.0%	6	46.2%
	Fall 2014	232	10	4.3%	72	31.0%	17	7.3%	133	57.3%
	Spring 2015	102	17	16.7%	34	33.3%	9	8.8%	42	41.2%
	Summer 2015	80	14	17.5%	31	38.8%	4	5.0%	31	38.8%
	Fall 2015	63	15	23.8%	32	50.8%	5	7.9%	11	17.5%
	Spring 2016	192	8	4.2%	139	72.4%	7	3.6%	38	19.8%
	Summer 2016	228	0	0.0%	207	90.8%	2	0.9%	19	8.3%
	Fall 2016	99	0	0.0%	99	100.0%	0	0.0%	0	0.0%
Quinsigamond	Spring 2014	55	11	20.0%	11	20.0%	2	3.6%	31	56.4%
	Summer 2014	32	4	12.5%	10	31.3%	1	3.1%	17	53.1%
	Fall 2014	261	78	29.9%	73	28.0%	30	11.5%	80	30.7%
	Spring 2015	212	37	17.5%	80	37.7%	14	6.6%	81	38.2%
	Summer 2015	0	0	-	0	-	0	-	0	-
	Fall 2015	79	8	10.1%	46	58.2%	2	2.5%	23	29.1%
	Spring 2016	56	8	14.3%	32	57.1%	5	8.9%	11	19.6%
	Summer 2016	113	1	0.9%	86	76.1%	1	0.9%	25	22.1%
	Fall 2016	159	0	0.0%	156	98.1%	0	0.0%	3	1.9%
Roxbury	Spring 2014	17	0	0.0%	2	11.8%	1	5.9%	14	82.4%
	Summer 2014	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%
	Fall 2014	0	0	-	0	-	0	-	0	-
	Spring 2015	0	0	-	0	-	0	-	0	-
	Summer 2015	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%
	Fall 2015	32	0	0.0%	18	56.3%	2	6.3%	12	37.5%
	Spring 2016	269	25	9.3%	178	66.2%	10	3.7%	56	20.8%
	Summer 2016	51	0	0.0%	41	80.4%	3	5.9%	7	13.7%
	Fall 2016	236	0	0.0%	236	100.0%	0	0.0%	0	0.0%
STCC	Spring 2014	0	0	-	0	-	0	-	0	-
	Summer 2014	31	2	6.5%	17	54.8%	4	12.9%	8	25.8%
	Fall 2014	11	6	54.5%	3	27.3%	1	9.1%	1	9.1%
	Spring 2015	10	5	50.0%	1	10.0%	2	20.0%	2	20.0%
	Summer 2015	22	0	0.0%	15	68.2%	3	13.6%	4	18.2%
	Fall 2015	5	0	0.0%	4	80.0%	0	0.0%	1	20.0%
	Spring 2016	8	1	12.5%	5	62.5%	0	0.0%	2	25.0%
	Summer 2016	37	0	0.0%	36	97.3%	0	0.0%	1	2.7%
	Fall 2016	29	0	0.0%	28	96.6%	0	0.0%	1	3.4%

Table 11A: Annual Number of SSA Students Earning Degrees and Certificates, by Participation Year and Campus						
Community College	Grant Year	Total Students	Number of students who earned degrees	Number of students who earned certificates	Number of students who earned STEM degrees	Number of students who earned STEM certificates
Berkshire	Year 1	21	0	0	0	0
	Year 2	127	5	2	0	1
	Year 3	186	0	0	0	0
	Year 4	61	0	0	0	0
Bristol	Year 1	89	20	1	14	1
	Year 2	211	33	3	29	3
	Year 3	302	7	2	4	2
	Year 4	97	0	0	0	0
Bunker Hill	Year 1	61	10	1	2	1
	Year 2	187	14	0	3	0
	Year 3	343	27	0	18	0
	Year 4	60	0	0	0	0
Cape Cod	Year 1	5	1	0	0	0
	Year 2	723	130	12	31	8
	Year 3	866	40	11	5	4
	Year 4	364	0	0	0	0
Greenfield	Year 1	18	0	0	0	0
	Year 2	32	1	1	1	0
	Year 3	66	3	1	0	1
	Year 4	0	0	0	0	0
Holyoke	Year 1	72	14	1	5	0
	Year 2	237	27	5	8	1
	Year 3	55	3	0	1	0
	Year 4	11	0	0	0	0
Mass Bay	Year 1	154	20	3	4	2
	Year 2	948	82	17	44	14
	Year 3	694	23	5	14	5
	Year 4	303	0	0	0	0
Massasoit	Year 1	48	1	0	0	0
	Year 2	1387	46	5	3	3
	Year 3	1400	9	3	1	1
	Year 4	39	0	0	0	0

Table 11A: Annual Number of SSA Students Earning Degrees and Certificates, by Participation Year and Campus						
Community College	Grant Year	Total Students	Number of students who earned degrees	Number of students who earned certificates	Number of students who earned STEM degrees	Number of students who earned STEM certificates
Middlesex	Year 1	146	37	14	23	14
	Year 2	482	91	35	55	34
	Year 3	451	20	7	11	7
	Year 4	120	0	0	0	0
Mt. Wachusett	Year 1	373	50	12	18	6
	Year 2	771	26	7	8	5
	Year 3	574	20	2	5	1
	Year 4	475	0	0	0	0
North Shore	Year 1	55	1	2	0	2
	Year 2	271	4	1	2	1
	Year 3	577	49	8	25	6
	Year 4	199	0	0	0	0
Northern Essex	Year 1	18	0	1	0	1
	Year 2	458	20	18	10	18
	Year 3	532	17	4	2	4
	Year 4	132	0	0	0	0
Quinsigamond	Year 1	115	16	3	4	2
	Year 2	576	109	22	63	18
	Year 3	369	12	4	6	4
	Year 4	215	0	0	0	0
Roxbury	Year 1	26	2	0	0	0
	Year 2	73	0	0	0	0
	Year 3	462	24	0	13	0
	Year 4	322	0	0	0	0
STCC	Year 1	33	0	0	0	0
	Year 2	176	16	1	10	1
	Year 3	295	4	0	1	0
	Year 4	159	0	0	0	0

Table 11B: Total Number of STEM Degrees and Certificates earned for ALL community college students							
	2010	2011	2012	2013	2014	2015	2016
Berkshire	114	155	121	134	144	167	138
Bristol	264	299	297	295	359	365	349
Bunker Hill	480	474	459	470	531	598	591
Cape Cod	226	235	251	239	277	212	218
Greenfield	126	139	118	126	138	137	124
Holyoke	191	195	178	172	201	241	226
Mass Bay	295	403	361	312	350	349	274
Massasoit	307	352	350	287	364	246	205
Middlesex	360	418	417	397	423	481	425
MWCC	330	332	363	392	357	370	318
North Shore	371	435	436	424	449	436	435
Northern Essex	424	406	432	523	530	470	449
QCC	439	453	484	534	539	500	575
Roxbury	86	125	88	85	107	88	185
STCC	547	540	481	574	623	530	466
Total STEM degrees and certificates across sites	**4,560**	**4,961**	**4,836**	**4,964**	**5,392**	**5,190**	**4,978**

Table 11C: Percentage of STEM Degrees and Certificates earned for ALL community college students							
	2010	2011	2012	2013	2014	2015	2016
Berkshire	41%	47%	39%	45%	40%	51%	45%
Bristol	26%	28%	25%	24%	26%	25%	25%
Bunker Hill	49%	47%	40%	39%	39%	40%	39%
Cape Cod	43%	42%	41%	43%	44%	38%	34%
Greenfield	38%	35%	33%	31%	35%	34%	32%
Holyoke	18%	18%	18%	19%	19%	24%	22%
Mass Bay	53%	58%	49%	47%	50%	49%	42%
Massasoit	36%	38%	36%	30%	32%	25%	22%
Middlesex	32%	39%	35%	31%	33%	33%	31%
MWCC	50%	53%	56%	54%	48%	46%	46%
North Shore	40%	41%	39%	37%	41%	42%	39%
Northern Essex	46%	44%	44%	48%	51%	46%	48%
QCC	44%	43%	40%	44%	43%	41%	43%
Roxbury	36%	42%	30%	27%	34%	28%	63%
STCC	56%	53%	52%	53%	56%	48%	45%
Total STEM degrees and certificates across sites	**40%**	**41%**	**38%**	**38%**	**39%**	**37%**	**37%**

Table 11D: Total Number of Degrees and Certificates (both STEM and Non-STEM) earned for all community college students							
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Berkshire	280	327	307	299	357	325	309
Bristol	1,023	1,062	1,198	1,211	1,387	1,478	1,397
Bunker Hill	982	1,011	1,146	1,218	1,373	1,478	1,509
Cape Cod	522	557	609	557	633	558	634
Greenfield	332	397	362	405	390	405	383
Holyoke	1,058	1,093	984	927	1,057	1,012	1,015
Mass Bay	553	695	740	660	699	715	651
Massasoit	842	924	979	956	1,136	995	915
Middlesex	1,113	1,075	1,184	1,269	1,285	1,462	1,368
MWCC	664	630	651	730	746	811	691
North Shore	924	1,060	1,106	1,134	1,091	1,050	1,124
Northern Essex	916	919	979	1,086	1,045	1,027	931
QCC	1,009	1,054	1,215	1,215	1,268	1,213	1,336
Roxbury	241	296	290	312	315	312	296
STCC	981	1,027	933	1,092	1,107	1,097	1,038
Total degrees across sites	**11,440**	**12,127**	**12,683**	**13,071**	**13,889**	**13,938**	**13,597**

Table 12A: Fall to Fall Retention and Transfer rates of full-time, first-time, degree seeking students SSA Students and all Community College Students, by Institution									
Institution	Term	Student type	Number of full-time, first-time degree seeking students	Retained to Fall 2015 at institution		Retained to Fall 2016 at institution		Transferred to another institution	
				#	%	#	%	#	%
Berkshire	Fall 2014	SSA	0	-	-	0	-	0	-
		All students	260	145	55.8%	82	31.5%	20	7.7%
	Fall 2015	SSA	0	-	-	0	-	0	-
		All students	266	-	-	162	60.9%	22	8.3%
Bristol	Fall 2014	SSA	3	1	33.3%	0	-	2	66.7%
		All students	1385	842	60.8%	528	38.1%	75	5.4%
	Fall 2015	SSA	3	-	-	2	66.7%	0	0.0%
		All students	1217	-	-	744	61.1%	76	6.2%
Bunker Hill	Fall 2014	SSA	11	6	54.5%	6	54.5%	0	-
		All students	1211	736	60.8%	483	39.9%	68	5.6%
	Fall 2015	SSA	10	-	-	7	70.0%	1	10.0%
		All students	818	-	-	498	60.9%	54	6.6%
Cape Cod	Fall 2014	SSA	44	29	65.9%	20	45.5%	9	20.5%
		All students	376	207	55.1%	124	33.0%	27	7.2%
	Fall 2015	SSA	51	-	-	37	72.5%	3	5.9%
		All students	390	-	-	218	55.9%	21	5.4%
Greenfield	Fall 2014	SSA	0	-	-	0	-	0	-
		All students	196	115	58.7%	78	39.8%	14	7.1%
	Fall 2015	SSA	0	-	-	0	-	0	-
		All students	194	-	-	121	62.4%	10	5.2%
Holyoke	Fall 2014	SSA	39	26	66.7%	19	48.7%	1	2.6%
		All students	983	568	57.8%	342	34.8%	71	7.2%
	Fall 2015	SSA	0	-	-	0	-	0	-
		All students	988	-	-	513	51.9%	80	8.1%
Mass Bay	Fall 2014	SSA	87	51	58.6%	32	36.8%	17	19.5%
		All students	648	339	52.3%	201	31.0%	74	11.4%
	Fall 2015	SSA	38	-	-	19	50.0%	2	5.3%
		All students	602	-	-	340	56.5%	69	11.5%
Massasoit	Fall 2014	SSA	276	151	54.7%	91	33.0%	43	15.6%
		All students	1186	678	57.2%	420	35.4%	77	6.5%
	Fall 2015	SSA	155	-	-	90	58.1%	3	1.9%
		All students	1079	-	-	645	59.8%	63	5.8%

Table 12A: Fall to Fall Retention and Transfer rates of full-time, first-time, degree seeking students SSA Students and all Community College Students, by Institution									
Institution	Term	Student type	Number of full-time, first-time degree seeking students	Retained to Fall 2015 at institution		Retained to Fall 2016 at institution		Transferred to another institution	
				#	%	#	%	#	%
Middlesex	Fall 2014	SSA	21	15	71.4%	9	42.9%	8	38.1%
		All students	1092	663	60.7%	426	39.0%	124	11.4%
	Fall 2015	SSA	9	-	-	5	55.6%	1	11.1%
		All students	1091	-	-	684	62.7%	109	10.0%
Mt. Wachusett	Fall 2014	SSA	0	-	-	0	-	0	-
		All students	503	269	53.5%	175	34.8%	44	8.7%
	Fall 2015	SSA	1	-	-	0	-	1	100.0%
		All students	485	-	-	250	51.5%	61	12.6%
North Shore	Fall 2014	SSA	0	-	-	0	-	0	-
		All students	730	424	58.1%	263	36.0%	51	7.0%
	Fall 2015	SSA	34	-	-	22	64.7%	3	8.8%
		All students	695	-	-	423	60.9%	52	7.5%
Northern Essex	Fall 2014	SSA	65	38	58.5%	21	32.3%	9	13.8%
		All students	758	441	58.2%	297	39.2%	65	8.6%
	Fall 2015	SSA	6	-	-	6	100.0%	0	-
		All students	752	-	-	434	57.7%	56	7.4%
Quinsigamond	Fall 2014	SSA	22	14	63.6%	8	36.4%	7	31.8%
		All students	903	496	54.9%	313	34.7%	68	7.5%
	Fall 2015	SSA	18	-	-	15	83.3%	0	-
		All students	830	-	-	450	54.2%	61	7.3%
Roxbury	Fall 2014	SSA	0	-	-	0	-	0	-
		All students	176	82	46.6%	51	29.0%	18	10.2%
	Fall 2015	SSA	5	-	-	3	60.0%	1	20.0%
		All students	92	-	-	51	55.4%	4	4.3%
STCC	Fall 2014	SSA	0	-	-	0	-	0	-
		All students	918	545	59.4%	309	33.7%	49	5.3%
	Fall 2015	SSA	1	-	-	0	-	0	-
		All students	864	-	-	506	58.6%	45	5.2%

Table 13A: SSA Secondary Participants and Events by Institution, Term, and Year				
Institution	**Grant Year**	**Term**	**Secondary participants**	**Number of events and activities**
Berkshire	Year 1	Spring 2014	84	26
		Summer 2014	144	5
	Year 2	Fall 2014	343	15
		Spring 2015	178	17
		Summer 2015	0	0
	Year 3	Fall 2015	702	25
		Spring 2016	676	14
		Summer 2016	56	4
	Year 4	Fall 2016	435	16
Bristol	Year 1	Spring 2014	392	11
		Summer 2014	219	10
	Year 2	Fall 2014	348	10
		Spring 2015	422	20
		Summer 2015	279	3
	Year 3	Fall 2015	245	6
		Spring 2016	727	25
		Summer 2016	147	8
	Year 4	Fall 2016	482	16
Bunker Hill	Year 1	Spring 2014	0	0
		Summer 2014	0	0
	Year 2	Fall 2014	0	0
		Spring 2015	0	0
		Summer 2015	0	0
	Year 3	Fall 2015	0	0
		Spring 2016	0	0
		Summer 2016	14	3
	Year 4	Fall 2016	10	1
Cape Cod	Year 1	Spring 2014	299	7
		Summer 2014	405	6
	Year 2	Fall 2014	151	7
		Spring 2015	875	24
		Summer 2015	1,212	19
	Year 3	Fall 2015	1,541	26
		Spring 2016	823	36
		Summer 2016	320	12
	Year 4	Fall 2016	629	23
Greenfield	Year 1	Spring 2014	115	4
		Summer 2014	235	9
	Year 2	Fall 2014	305	3
		Spring 2015	214	12
		Summer 2015	0	0
	Year 3	Fall 2015	0	0
		Spring 2016	500	15
		Summer 2016	70	1
	Year 4	Fall 2016	426	120

Table 13A: SSA Secondary Participants and Events by Institution, Term, and Year				
Institution	**Grant Year**	**Term**	**Secondary participants**	**Number of events and activities**
Holyoke	Year 1	Spring 2014	770	24
		Summer 2014	15	5
	Year 2	Fall 2014	18	1
		Spring 2015	1,262	13
		Summer 2015	0	0
	Year 3	Fall 2015	0	0
		Spring 2016	0	0
		Summer 2016	14	3
	Year 4	Fall 2016	0	0
MassBay	Year 1	Spring 2014	477	5
		Summer 2014	0	0
	Year 2	Fall 2014	4	2
		Spring 2015	417	14
		Summer 2015	133	8
	Year 3	Fall 2015	350	14
		Spring 2016	590	25
		Summer 2016	211	8
	Year 4	Fall 2016	422	14
Massasoit	Year 1	Spring 2014	850	23
		Summer 2014	110	3
	Year 2	Fall 2014	0	0
		Spring 2015	40	10
		Summer 2015	0	0
	Year 3	Fall 2015	0	0
		Spring 2016	0	0
		Summer 2016	0	0
	Year 4	Fall 2016	0	0
Middlesex	Year 1	Spring 2014	152	3
		Summer 2014	0	0
	Year 2	Fall 2014	0	0
		Spring 2015	204	9
		Summer 2015	31	1
	Year 3	Fall 2015	493	6
		Spring 2016	1341	7
		Summer 2016	353	7
	Year 4	Fall 2016	174	5
Mt. Wachusett	Year 1	Spring 2014	449	43
		Summer 2014	0	0
	Year 2	Fall 2014	0	0
		Spring 2015	288	10
		Summer 2015	0	0
	Year 3	Fall 2015	11	1
		Spring 2016	50	1
		Summer 2016	0	0
	Year 4	Fall 2016	300	3

Table 13A: SSA Secondary Participants and Events by Institution, Term, and Year				
Institution	**Grant Year**	**Term**	**Secondary participants**	**Number of events and activities**
North Shore	Year 1	Spring 2014	250	3
		Summer 2014	1,220	4
	Year 2	Fall 2014	400	7
		Spring 2015	250	4
		Summer 2015	30	5
	Year 3	Fall 2015	30	1
		Spring 2016	75	8
		Summer 2016	250	8
	Year 4	Fall 2016	300	15
Northern Essex	Year 1	Spring 2014	209	6
		Summer 2014	0	0
	Year 2	Fall 2014	138	4
		Spring 2015	13	1
		Summer 2015	11	1
	Year 3	Fall 2015	1	1
		Spring 2016	19	2
		Summer 2016	41	12
	Year 4	Fall 2016	0	0
Quinsigamond	Year 1	Spring 2014	845	8
		Summer 2014	197	7
	Year 2	Fall 2014	34	7
		Spring 2015	114	2
		Summer 2015	29	2
	Year 3	Fall 2015	389	7
		Spring 2016	926	22
		Summer 2016	741	18
	Year 4	Fall 2016	1220	14
Roxbury	Year 1	Spring 2014	240	2
		Summer 2014	0	0
	Year 2	Fall 2014	0	0
		Spring 2015	0	0
		Summer 2015	0	-
	Year 3	Fall 2015	0	0
		Spring 2016	0	0
		Summer 2016	0	0
	Year 4	Fall 2016	0	0
STCC	Year 1	Spring 2014	530	8
		Summer 2014	0	0
	Year 2	Fall 2014	0	0
		Spring 2015	741	20
		Summer 2015	17	1
	Year 3	Fall 2015	430	13
		Spring 2016	434	32
		Summer 2016	20	2
	Year 4	Fall 2016	251	78

Table 14A: Primary SSA Participants' Math Participation and Outcomes by Institution, 2016					
Institution	Term	Total number of primary participants	Number of primary participants who participated in a SSA-sponsored developmental math intervention	Number of primary participants who participated in a developmental math intervention and **fulfilled all developmental math requirements** for their institution by the end of the term	Number of primary participants who completed developmental math and subsequently enrolled in a college-credit level math course
Berkshire	Summer 2015	32	21	6	6
	Fall 2015	66	0	0	0
	Spring 2016	68	0	0	0
	Summer 2016	52	14	6	5
	Fall 2016	61	0	0	0
Bristol	Summer 2015	81	25	6	4
	Fall 2015	52	14	4	3
	Spring 2016	108	21	5	2
	Summer 2016	142	44	11	9
	Fall 2016	97	0	0	0
Bunker Hill	Summer 2015	57	41	38	30
	Fall 2015	108	44	36	27
	Spring 2016	105	0	0	0
	Summer 2016	130	81	55	43
	Fall 2016	60	0	0	0
Cape Cod	Summer 2015	103	20	5	0
	Fall 2015	348	119	80	0
	Spring 2016	406	79	48	0
	Summer 2016	112	23	18	0
	Fall 2016	364	32	11	0
Greenfield	Summer 2015	19	6	3	1
	Fall 2015	11	0	0	0
	Spring 2016	28	0	0	0
	Summer 2016	27	9	6	2
	Fall 2016	0	0	0	0
Holyoke	Summer 2015	66	25	0	0
	Fall 2015	0	0	0	0
	Spring 2016	14	0	0	0
	Summer 2016	41	12	1	1
	Fall 2016	11	0	0	0
Mass Bay	Summer 2015	84	2	2	2
	Fall 2015	231	41	3	0
	Spring 2016	294	61	2	0
	Summer 2016	169	23	2	0
	Fall 2016	303	57	1	0
Massasoit	Summer 2015	29	12	1	1
	Fall 2015	524	436	102	73
	Spring 2016	799	687	123	67
	Summer 2016	77	57	6	4
	Fall 2016	39	11	13	11
Middlesex	Summer 2015	137	20	1	1
	Fall 2015	158	0	0	0
	Spring 2016	151	0	0	0
	Summer 2016	142	55	25	12
	Fall 2016	120	0	0	0

Table 14A: Primary SSA Participants' Math Participation and Outcomes by Institution, 2016					
Institution	Term	Total number of primary participants	Number of primary participants who participated in a SSA-sponsored developmental math intervention	Number of primary participants who participated in a developmental math intervention and **fulfilled all developmental math requirements** for their institution by the end of the term	Number of primary participants who completed developmental math and subsequently enrolled in a college-credit level math course
Mt. Wachusett	Summer 2015	18	3	3	3
	Fall 2015	385	355	0	0
	Spring 2016	120	26	0	0
	Summer 2016	69	8	5	1
	Fall 2016	475	446	0	0
North Shore	Summer 2015	70	0	0	0
	Fall 2015	275	0	0	0
	Spring 2016	226	4	4	0
	Summer 2016	76	26	3	1
	Fall 2016	199	0	0	0
Northern Essex	Summer 2015	108	8	8	0
	Fall 2015	64	0	0	0
	Spring 2016	213	53	39	9
	Summer 2016	255	17	7	1
	Fall 2016	132	58	51	34
Quinsigamond	Summer 2015	0	0	0	0
	Fall 2015	97	15	6	5
	Spring 2016	71	12	4	2
	Summer 2016	201	0	0	0
	Fall 2016	215	30	26	8
Roxbury	Summer 2015	59	7	1	0
	Fall 2015	32	32	6	1
	Spring 2016	294	137	11	3
	Summer 2016	136	21	0	0
	Fall 2016	322	90	20	17
STCC	Summer 2015	78	14	7	6
	Fall 2015	79	0	0	0
	Spring 2016	87	0	0	0
	Summer 2016	129	28	15	8
	Fall 2016	159	0	0	0

Table 15A: Freshmen, First Time Enrollees' Progress in Developmental Math Coursework, by Institution							
Institution	Student type	Term	Number of freshmen, first-time enrollees	Students *enrolled* in remedial math during current term		Students *completing* a remedial math course during the current term	
				#	%	#	%
Berkshire	SSA Students	Fall 2014	0	0	-	0	0%
	Full College		427	161	37.7%	74	17.3%
	SSA Students	Fall 2015	0	0	-	0	-
	Full College		434	171	39.4%	61	14.1%
Bristol	SSA Students	Fall 2014	4	4	100.0%	2	50.0%
	Full College		1972	1004	50.9%	629	31.9%
	SSA Students	Fall 2015	5	4	80.0%	4	80.0%
	Full College		1713	812	47.4%	484	28.3%
Bunker Hill	SSA Students	Fall 2014	13	13	100.0%	12	92.3%
	Full College		2395	946	39.5%	669	27.9%
	SSA Students	Fall 2015	11	10	90.9%	10	90.9%
	Full College		1678	642	38.3%	503	30.0%
Cape Cod	SSA Students	Fall 2014	57	33	57.9%	22	38.6%
	Full College		708	230	32.5%	124	17.5%
	SSA Students	Fall 2015	71	34	47.9%	25	35.2%
	Full College		684	212	31.0%	77	11.3%
Greenfield	SSA Students	Fall 2014	0	0	-	0	-
	Full College		370	171	46.2%	108	29.2%
	SSA Students	Fall 2015	0	0	-	0	-
	Full College		361	161	44.6%	98	27.1%
Holyoke	SSA Students	Fall 2014	57	57	100.0%	42	73.7%
	Full College		1495	828	55.4%	544	36.4%
	SSA Students	Fall 2015	0	0	-	0	-
	Full College		1416	779	55.0%	463	32.7%
Mass Bay	SSA Students	Fall 2014	128	110	85.9%	72	56.3%
	Full College		1205	372	30.9%	248	20.6%
	SSA Students	Fall 2015	51	25	49.0%	13	25.5%
	Full College		1029	361	35.1%	221	21.5%
Massasoit	SSA Students	Fall 2014	353	349	98.9%	218	61.8%
	Full College		1733	1126	65.0%	767	44.3%
	SSA Students	Fall 2015	253	250	98.8%	138	54.5%
	Full College		1681	1070	63.7%	689	41.0%
Middlesex	SSA Students	Fall 2014	22	1	4.5%	1	4.5%
	Full College		1845	807	43.7%	562	30.5%
	SSA Students	Fall 2015	10	3	30.0%	2	20.0%
	Full College		1840	820	44.6%	480	26.1%

Table 15A: Freshmen, First Time Enrollees' Progress in Developmental Math Coursework, by Institution							
Institution	Student type	Term	Number of freshmen, first-time enrollees	Students *enrolled* in remedial math during current term		Students *completing* a remedial math course during the current term	
				#	%	#	%
Mt. Wachusett	SSA Students	Fall 2014	0	0	-	0	-
	Full College		800	358	44.8%	260	32.5%
	SSA Students	Fall 2015	1	0	0.0%	0	0.0%
	Full College		796	334	42.0%	240	30.2%
North Shore	SSA Students	Fall 2014	0	0	-	0	-
	Full College		1286	376	29.2%	180	14.0%
	SSA Students	Fall 2015	49	2	4.1%	2	4.1%
	Full College		1232	75	6.1%	54	4.4%
Northern Essex	SSA Students	Fall 2014	117	117	100.0%	81	69.2%
	Full College		1354	606	44.8%	416	30.7%
	SSA Students	Fall 2015	8	3	37.5%	2	25.0%
	Full College		1325	605	45.7%	383	28.9%
Quinsigamond	SSA Students	Fall 2014	32	3	9.4%	3	9.4%
	Full College		1579	692	43.8%	491	31.1%
	SSA Students	Fall 2015	38	15	39.5%	14	36.8%
	Full College		1450	560	38.6%	386	26.6%
Roxbury	SSA Students	Fall 2014	0	0	-	0	-
	Full College		440	172	39.1%	116	26.4%
	SSA Students	Fall 2015	9	6	66.7%	4	44.4%
	Full College		236	114	48.3%	63	26.7%
STCC	SSA Students	Fall 2014	1	1	100.0%	1	100.0%
	Full College		1302	795	61.1%	588	45.2%
	SSA Students	Fall 2015	1	1	100.0%	0	0.0%
	Full College		1266	755	59.6%	570	45.0%

Appendix table numbers correspond with the table numbers in the report. There are no corresponding appendix tables for Table 16 or Table 17.

Table 18: Primary Participants Previously Reported as Secondary Participants, by Institution					
Institution	Grant Year	Term	Number of primary participants	Number of secondary participants	Number of current term primary participants previously reported as secondary participants
Berkshire	Year 1	Spring 2014	0	84	-
		Summer 2014	21	144	16
	Year 2	Fall 2014	67	343	16
		Spring 2015	28	178	2
		Summer 2015	32	0	25
	Year 3	Fall 2015	66	702	0
		Spring 2016	68	676	1
		Summer 2016	52	56	10
	Year 4	Fall 2016	61	435	23
Bristol	Year 1	Spring 2014	13	392	-
		Summer 2014	76	219	0
	Year 2	Fall 2014	59	348	0
		Spring 2015	71	422	10
		Summer 2015	81	279	2
	Year 3	Fall 2015	52	245	6
		Spring 2016	108	727	0
		Summer 2016	142	147	8
	Year 4	Fall 2016	97	482	0
Bunker Hill	Year 1	Spring 2014	0	0	-
		Summer 2014	61	0	0
	Year 2	Fall 2014	40	0	0
		Spring 2015	90	0	0
		Summer 2015	57	0	0
	Year 3	Fall 2015	108	0	0
		Spring 2016	105	0	0
		Summer 2016	130	14	0
	Year 4	Fall 2016	60	10	0
Cape Cod	Year 1	Spring 2014	0	299	-
		Summer 2014	5	405	5
	Year 2	Fall 2014	300	151	0
		Spring 2015	320	875	122
		Summer 2015	103	1,212	18
	Year 3	Fall 2015	348	1,541	56
		Spring 2016	406	823	19
		Summer 2016	112	320	14
	Year 4	Fall 2016	364	629	47

Table 18: Primary Participants Previously Reported as Secondary Participants, by Institution					
Institution	Grant Year	Term	Number of primary participants	Number of secondary participants	Number of current term primary participants previously reported as secondary participants
Greenfield	Year 1	Spring 2014	0	115	-
		Summer 2014	18	235	8
	Year 2	Fall 2014	4	305	0
		Spring 2015	9	214	0
		Summer 2015	19	0	1
	Year 3	Fall 2015	11	0	0
		Spring 2016	28	500	0
		Summer 2016	27	70	18
	Year 4	Fall 2016	0	426	0
Holyoke	Year 1	Spring 2014	0	770	-
		Summer 2014	72	15	47
	Year 2	Fall 2014	149	18	0
		Spring 2015	22	1,262	0
		Summer 2015	66	0	0
	Year 3	Fall 2015	0	0	-
		Spring 2016	14	0	0
		Summer 2016	41	14	0
	Year 4	Fall 2016	11	0	0
MassBay	Year 1	Spring 2014	0	477	-
		Summer 2014	154	0	0
	Year 2	Fall 2014	374	4	0
		Spring 2015	490	417	1
		Summer 2015	84	133	79
	Year 3	Fall 2015	231	350	6
		Spring 2016	294	590	1
		Summer 2016	169	211	2
	Year 4	Fall 2016	303	422	24
Massasoit	Year 1	Spring 2014	0	850	-
		Summer 2014	48	110	0
	Year 2	Fall 2014	643	0	0
		Spring 2015	715	40	0
		Summer 2015	29	0	0
	Year 3	Fall 2015	524	0	0
		Spring 2016	799	0	0
		Summer 2016	77	0	0
	Year 4	Fall 2016	39	0	0

Table 18: Primary Participants Previously Reported as Secondary Participants, by Institution					
Institution	Grant Year	Term	Number of primary participants	Number of secondary participants	Number of current term primary participants previously reported as secondary participants
Middlesex	Year 1	Spring 2014	101	152	-
		Summer 2014	45	0	0
	Year 2	Fall 2014	172	0	0
		Spring 2015	173	204	0
		Summer 2015	137	31	0
	Year 3	Fall 2015	158	493	0
		Spring 2016	151	1341	0
		Summer 2016	142	353	0
	Year 4	Fall 2016	120	174	0
Mt. Wachusett	Year 1	Spring 2014	236	449	-
		Summer 2014	137	0	0
	Year 2	Fall 2014	337	0	0
		Spring 2015	416	288	0
		Summer 2015	18	0	0
	Year 3	Fall 2015	385	11	0
		Spring 2016	120	50	0
		Summer 2016	69	0	0
	Year 4	Fall 2016	475	300	0
North Shore	Year 1	Spring 2014	0	250	-
		Summer 2014	55	1,220	55
	Year 2	Fall 2014	75	400	1
		Spring 2015	126	250	126
		Summer 2015	70	30	33
	Year 3	Fall 2015	275	30	23
		Spring 2016	226	75	11
		Summer 2016	76	250	76
	Year 4	Fall 2016	199	300	199
Northern Essex	Year 1	Spring 2014	2	209	-
		Summer 2014	16	0	0
	Year 2	Fall 2014	233	138	0
		Spring 2015	117	13	0
		Summer 2015	108	11	0
	Year 3	Fall 2015	64	1	0
		Spring 2016	213	19	1
		Summer 2016	255	41	1
	Year 4	Fall 2016	132	0	0

Table 18: Primary Participants Previously Reported as Secondary Participants, by Institution					
Institution	Grant Year	Term	Number of primary participants	Number of secondary participants	Number of current term primary participants previously reported as secondary participants
Quinsigamond	Year 1	Spring 2014	79	845	-
		Summer 2014	36	197	0
	Year 2	Fall 2014	265	34	0
		Spring 2015	311	114	0
		Summer 2015	0	29	0
	Year 3	Fall 2015	97	389	29
		Spring 2016	71	926	0
		Summer 2016	201	741	0
	Year 4	Fall 2016	215	1220	95
Roxbury	Year 1	Spring 2014	17	240	-
		Summer 2014	9	0	0
	Year 2	Fall 2014	7	0	0
		Spring 2015	7	0	0
		Summer 2015	59	0	-
	Year 3	Fall 2015	32	0	0
		Spring 2016	294	0	0
		Summer 2016	136	0	0
	Year 4	Fall 2016	322	0	0
STCC	Year 1	Spring 2014	0	530	-
		Summer 2014	33	0	0
	Year 2	Fall 2014	44	0	0
		Spring 2015	54	741	0
		Summer 2015	78	17	6
	Year 3	Fall 2015	79	430	6
		Spring 2016	87	434	6
		Summer 2016	129	20	47
	Year 4	Fall 2016	159	251	47

STEM Starter Academy – Year 3 Site Report Survey Analysis

This section presents analysis of responses to the STEM Starter Academy Year 3 Site Report Survey, one part of annual site-generated reports to DHE, which also include a narrative component (summarized in Appendix O). The survey component contained closed-ended responses, asking sites to indicate which activities took place at their institution during the academic year and the summer, and whether or not these activities were at least partially supported with SSA funds. The Year 3 survey instrument contained the same elements as the instrument from Year 2, allowing comparisons between responses from the two years. In Year 3, an additional section was added that asked sites to indicate whether or not each activity was included as part of that institution's SSA Early College activities, and whether or not it was supported by SSA funding in that context. Early College activities included those designed to prepare high school students for college and careers and to engage them in a path to and through college. As in Year 2, all 15 sites responded to the survey for Year 3. For more detailed information on this instrument and its deployment, please see the methods section of this report.

The summaries below use tables and figures to succinctly capture patterns of implementation across sites and across years. The tables present response data, by site and the figures compare responses from Year 2 and Year 3. The tables are organized to reflect the time period during which each particular activity took place (academic year 2015-16 or summer 2016) in addition to whether or not the activity was supported with SSA funding. The summaries below each table capture site activities over the entirety of Year 3, regardless of time period. In these summaries, if an activity was supported with SSA funding during either time period, that site is counted as having implemented the activity in Year 3 with SSA funding.

This section is organized to reflect campuses' strategies in support of each of the two goals outlined in the SSA model:

- **Primary goal:** To increase the number of STEM graduates and certificate holders that are produced by the community colleges and that transfer to a 4-year university or obtain STEM employment.
- **Secondary goal:** To increase the number of students entering STEM programs at the community colleges.

The first subsection focuses on strategies that support recruitment and readiness (secondary goal). The second subsection focuses on strategies to support retention and completion (primary goal). This order reflects the expected progression of participants from recruitment to completion.

Recruitment and Retention Strategies

This section reviews strategies that align with the recruitment and readiness aspects of the SSA model and thus relate to the secondary goal.

Summary of Key Findings

- ✓ **Every SSA site continued to invest in preparing incoming students for college, and for STEM courses in particular.**
- ✓ **There was a modest increase in the number of sites offering STEM introductory courses, advanced STEM courses, developmental math courses, and accelerated or self-paced math courses in Year 3.**
- ✓ **Activities designed to engage students in STEM—from recruitment to completion—were among the most widely implemented SSA activities in Year 3.** Boosting awareness of STEM careers and paths to those careers through community colleges was a clear focus of SSA sites in Year 3 and reflects promising practices identified in the literature.
- ✓ **There was a greater focus on recruiting high school students across all sites.** This reflects the increased emphasis on Early College initiatives.

Site-reported data from Year 3 suggest that SSA campuses implemented a variety of recruitment strategies similar to Year 2, with an additional emphasis in Year 3 on Early College candidates. The number of sites that reported each participating population was similar to that in Year 2, with the exception of the increased number of sites with high school participants in Year 3 (Figure 1a). However, there were fewer sites with veteran and community member participants in Year 3 than in Year 2, despite the fact that a similar number of sites recruited these groups in both years (Figure 1b).

Recruitment and Outreach

- The most widely implemented recruitment activities included outreach by community college faculty, high school visits, events at the community college, and targeted emails or letters. (Table 1)
- All but one site used SSA funding to support their Early College recruitment activities. (Table 1)
- Although there was no change between Year 2 and Year 3 in the number of sites that held events at the community college campus or events with high school staff and faculty, fewer colleges used SSA funding for these events in Year 3. (Figure 2)
- In Year 3, the most commonly reported recruited populations for SSA—reported at all 15 sites—were high school seniors, current community college students, and incoming community college students. Fourteen sites recruited either high school freshmen, sophomores, or juniors. Fewer than half of the sites indicated that they directed their recruitment efforts towards Adult Basic Education participants, adults with a high school equivalency, and/or community members. (Figure 1b)
- During Year 2, every site engaged in outreach involving community college faculty members. This number dropped to 14 sites in Year 3. However, the proportion of sites that supported this outreach with SSA funding grew from 67% in Year 2 (10 out of 15 sites) to 86% in Year 3 (12 out of 14 sites). (Figure 2)

Figure 1a. Populations Participating in SSA Activities Year 2 and Year 3, (sites, n=15)

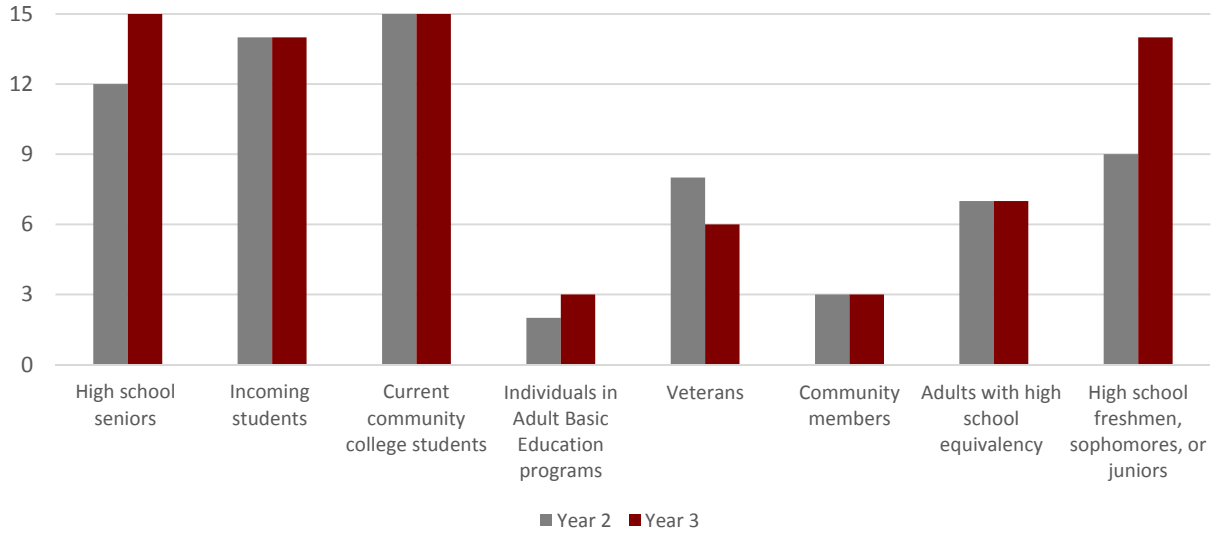


Figure 1b. Populations Recruited for SSA Activities Year 2 and Year 3, (sites, n=15)

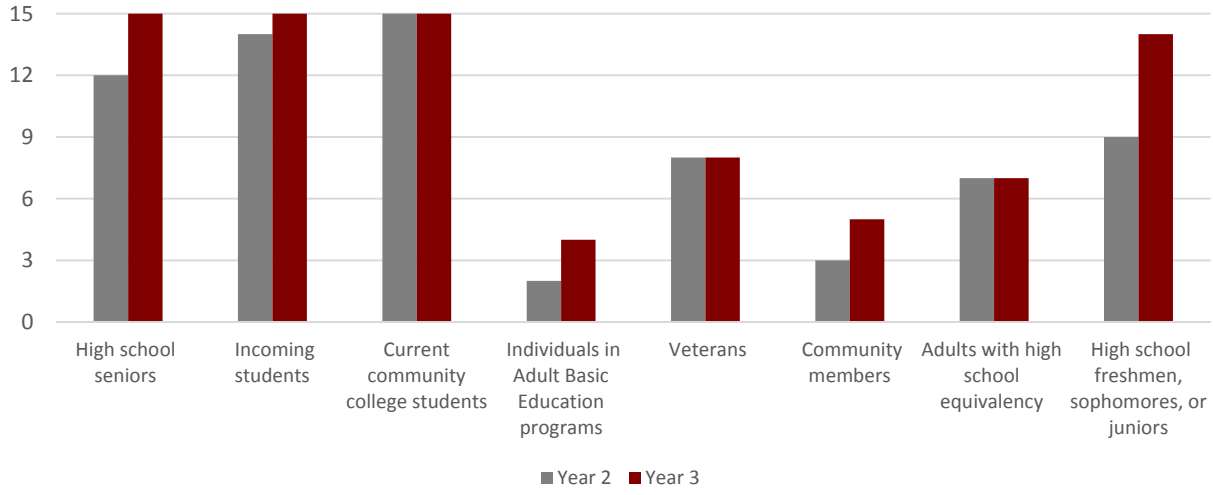


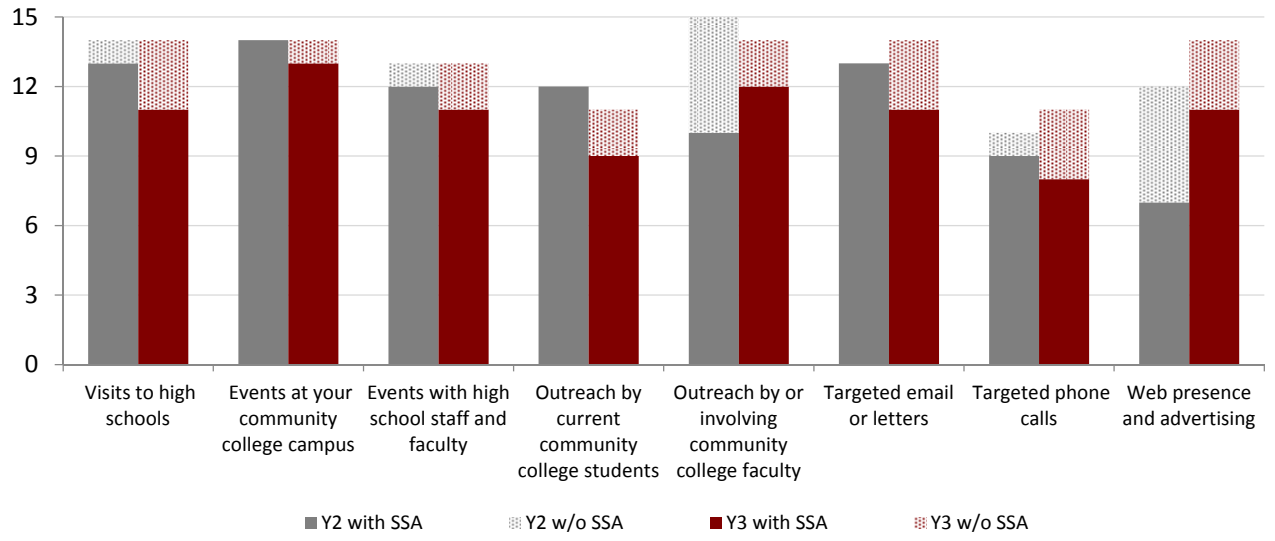
Table 1: Recruitment Activities Funded With or Without SSA Funding By Site, Year 3

	Total	Berkshire	Bristol	Bunker Hill	Cape Cod	GCC	Holyoke	Mass Bay	Massasoit	Middlesex	Mt. Wachusett	North Shore	Northern Essex	QCC	Roxbury	STCC
Academic year 2015-16																
Visits to high schools	14	■	■	▒	▒	■	■	■	■	■	■	▒		■	▒	■
Events at your community college campus	14	■	■		■	■	■	■	■	■	■	■	■	■	▒	■
Events with high school staff and faculty	12	■	■		■	■	■	■		▒	■	■		■	▒	■
Outreach by current community college students	11	■	■			▒	▒	■	■	■		■		■	▒	■
Outreach by or involving community college faculty	14	■	■		▒	■	■	■	■	■	■	■	■	■	▒	■
Targeted email or letters	14	■	■	■	▒	▒		■	■	■	■	■	■	■	▒	■
Targeted phone calls	10	■			▒	▒		■		■	■	■	■	■	▒	
Web presence and advertising	13	■	■	▒	■	▒	■	■		■	■		■	■	▒	■
Summer 2016																
Visits to high schools	8				▒	▒	■		■			▒	▒	■	■	
Events at your community college campus	12		■		■	▒	■	■	■	■	■	■	■	■	▒	
Events with high school staff and faculty	7		■		■		■	■	■					■	▒	
Outreach by current community college students	9		■			▒	▒	■	■	■		■		▒	■	
Outreach by or involving community college faculty	13	■	■		▒	▒	■	■	■	■	■	■	■	▒	▒	
Targeted email or letters	12	■	■	■	▒	▒		■	■	■		■	■	■	▒	
Targeted phone calls	9		■		▒	▒		■		■		■	■	■	▒	
Web presence and advertising	12	■	■	▒	■	▒	■	■	■	■			■	■	▒	
Early College Fall 2015 - Summer 2016*																
Visits to high schools	15	■	■	▒	■	■	■	■	■	■	■	■	■	■	■	■
Events at your community college campus	13	■	■		■	■	■	■	■	■	■	■	■	■	■	
Events with high school staff and faculty	10		■		■		■	■	■	▒	■	■		■		■
Outreach by current community college students	8	■	■			■	▒	■	■	■	■					
Outreach by or involving community college faculty	11	■			▒	■	■	■	■	■	■		■	■	■	
Targeted email or letters	11		■	▒		▒		■	■	■	■	■	■	■	▒	
Targeted phone calls	8			▒		▒		■		■	■	■		■	▒	
Web presence and advertising	10	■			■	▒	■	■	■	■	■				▒	■

*SSA Early College Activities were reported from Fall 2015-Summer 2016. Early College Activities include those designed to prepare high school students for college and career as well as engage them in a path to and through college.

■ w/SSA Funding ▒ w/o SSA Funding

Figure 2. Recruitment Activities Year 2 & Year 3 with and without SSA funding (sites, n=15)



College and STEM Readiness

In Year 3, SSA sites continued their efforts to prepare incoming students for college and for STEM courses in particular. Every site used SSA funding to offer introductory or advanced STEM courses or developmental math courses during Year 3 (Table 2). The other most common strategies implemented by sites were college success courses or workshops, and accelerated or self-paced math courses. 10 out of 15 sites offered college success courses for Early College students (Table 2 and Table 3).

Every campus reported offering some form of readiness intervention in Year 3. For two thirds of sites, these interventions included a combination of college readiness, STEM skills preparation (courses or preparation workshops), STEM field exploration, and social support.

College skills preparation (Table 2 and Table 3)

- Most sites offered some sort of college skills preparation through SSA (e.g., college skills-focused events or speakers, college success courses, college readiness programs).
- There was an increase in the number of colleges that held college skills events or speakers from Year 2 to Year 3. In addition, the proportion of sites using SSA funding for these activities grew from 8 out of 12 sites (67%) in Year 2 to 13 out of 14 sites (93%) in Year 3.

Developmental mathematics interventions

- Every site implemented some sort of developmental mathematics intervention as part of its SSA readiness strategy. The majority of sites supported developmental math courses (12 of 15, 80%) and math refresher programs (11 of 15, 73%) with SSA funding.
- All colleges continued to offer math placement test refresher or booster programs. 11 out of 15 sites used SSA funding in Year 3 for these programs. (Table 4)

STEM Coursework (Table 2)

- Sites' readiness strategies also included offering college-level mathematics courses, dual enrollment courses in STEM, and a range of advanced STEM courses.
    - In Year 3, twelve colleges offered advanced STEM courses. Like in Year 2, most sites that offered advanced STEM courses did not use SSA funding to support them.
    - There was a slight increase in the number of colleges that offered accelerated or self-paced math courses in Year 3 (from 13 to 14). The number and proportion of sites using SSA funding to support these courses decreased from 10 out of 13 sites (77%) in Year 2 to 8 out of 14 sites (57%) in Year 3. (Figure 3)
- 9 out of 15 sites offered Early College STEM dual-enrollment courses in Year 3.
- Eight sites supported STEM coursework—either courses taught at local high schools or dual-enrollment courses—for the pre-college pipeline through SSA in Year 3.
- In Year 3, every site offered STEM introductory courses as well as developmental math courses. This is a slight increase from Year 2 when 13 sites offered STEM introductory courses and 14 offered developmental math courses.
    - The number and proportion of sites using SSA funds to support these courses also increased in Year 3. 12 out of 15 sites (80%) used SSA funding to support developmental math courses in Year 3 compared with 10 out of 14 sites (71%) in Year 2.
    - The number and proportion of sites using SSA funds to support STEM introductory courses also increased from 8 (53%) in Year 2 to 10 (66%) in Year 3.

Figure 3. Coursework Year 2 & Year 3 with and without SSA funding (sites, n=15)

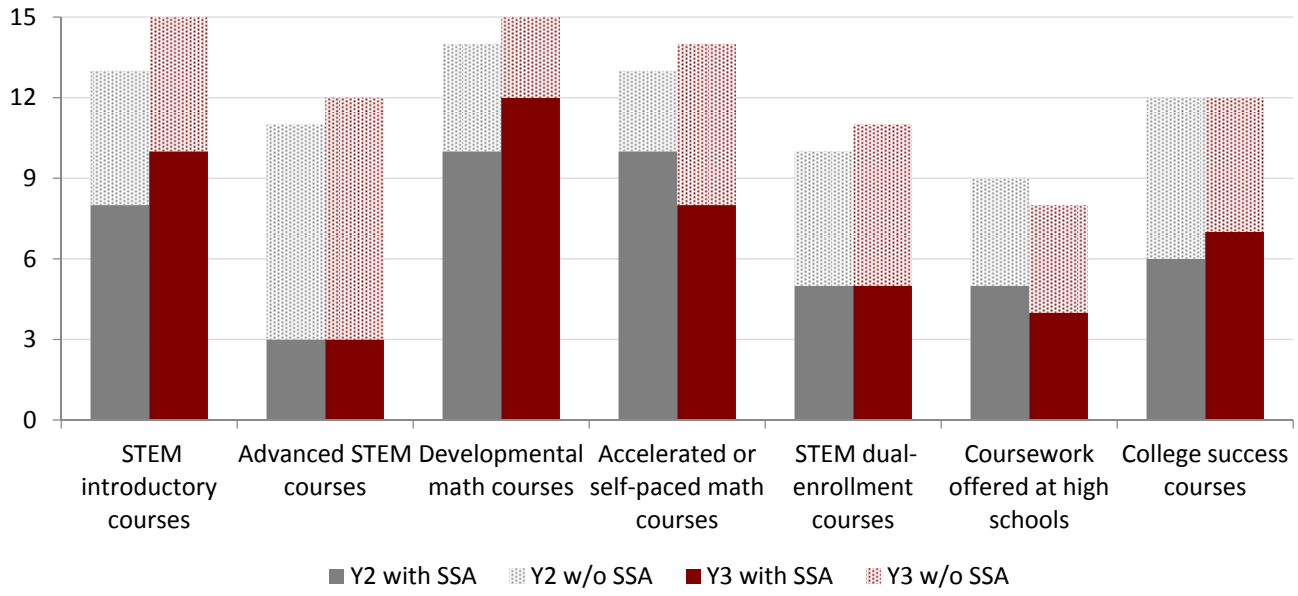


Table 2: Coursework Activities Funded With or Without SSA Funding, By Site, Year 3

	Total	Berkshire	Bristol	Bunker Hill	Cape Cod	GCC	Holyoke	Mass Bay	Massasoit	Middlesex	Mt. Wachusett	North Shore	Northern Essex	QCC	Roxbury	STCC
Academic Year 2015-2016																
STEM introductory courses	15	■	■	▒	■	▒	■	▒	▒	▒	▒	■	▒	■	■	▒
Advanced STEM courses	12	▒		▒	▒	■		▒	▒	▒	▒	■	▒		▒	▒
Developmental math courses	14	▒	■	▒	▒	▒	■	■		▒	■	■	■	▒	■	▒
Accelerated or self-paced math courses	13	▒	■	▒	▒	■	▒	■	▒	▒	▒			▒	■	▒
STEM dual-enrollment courses	10	■		▒	▒	■		▒		▒	▒		■	▒		▒
Coursework offered at high schools	8	■		▒	■			▒			■		■	▒		▒
Summer 2016																
STEM introductory courses	13	■	■	▒	■	■	■	▒		■	■	■	▒		■	▒
Advanced STEM courses	10			▒	▒	■		▒		▒	■	■	▒		▒	▒
Developmental math courses	15	▒	■	■	▒	■	■	■	■	■	■	■	▒	▒	■	■
Accelerated or self-paced math courses	13	▒	■	▒	▒	■	▒	■	■	■	▒	■			▒	■
STEM dual-enrollment courses	6				▒	▒				■	▒	■				▒
Coursework offered at high schools	3				▒						▒			▒		
Early College Fall 2015 - Summer 2016*																
STEM introductory courses	8		■		■		■			■	■	■			■	▒
Advanced STEM courses	5	■			▒							■			▒	▒
Developmental math courses	8		■		▒		■	■		■		■			■	■
Accelerated or self-paced math courses	8		■		▒	■	▒	■		■		■				■
STEM dual-enrollment courses	9	■	■		▒	■		▒		■	■	■				▒
Coursework offered at high schools	5	■		▒	■			▒			▒					
College success courses	10		■		■	▒		■		■		■	■	■	▒	■

*SSA Early College Activities were reported from Fall 2015-Summer 2016. Early College Activities include those designed to prepare high school students for college and career as well as engage them in a path to and through college.

■ w/SSA Funding ▒ w/o SSA Funding

Table 3: Academic Support Activities Funded With or Without SSA Funding, By Site, Year 3

	Total	Berkshire	Bristol	Bunker Hill	Cape Cod	GCC	Holyoke	Mass Bay	Massasoit	Middlesex	Mt. Wachusett	North Shore	Northern Essex	QCC	Roxbury	STCC
Academic Year 2015-2016																
Peer tutoring	14															
Professional tutoring	13															
Supplemental instruction or facilitated study groups	13															
College skills events or speakers	14															
Block scheduling	6															
STEM-specific orientations	12															
Summer 2016																
Peer tutoring	13															
Professional tutoring	12															
Supplemental instruction or facilitated study groups	11															
College skills events or speakers	13															
Block scheduling	2															
STEM-specific orientations	11															
Early College Fall 2015 - Summer 2016*																
Peer tutoring	8															
Professional tutoring	8															
Supplemental instruction or facilitated study groups	8															
College skills events or speakers	11															
Block scheduling	2															
STEM-specific orientations	9															

*SSA Early College Activities were reported from Fall 2015-Summer 2016. Early College Activities include those designed to prepare high school students for college and career as well as engage them in a path to and through college.

w/SSA Funding w/o SSA Funding

Table 4: STEM Workshops Funded With or Without SSA Funding, By Site, Year 3

	Total	Berkshire	Bristol	Bunker Hill	Cape Cod	GCC	Holyoke	Mass Bay	Massasoit	Middlesex	Mt. Wachusett	North Shore	Northern Essex	QCC	Roxbury	STCC
Academic Year 2015-2016																
Math placement test refresher or booster programs	12	■	■		■	■	■	■		■	■		■	■	■	■
STEM exploratory workshops	12	■	■	■	■	■		■	■		■	■	■	■	■	
College-readiness programs	11	■	■	■	■	■		■	■	■	■	■			■	
Summer 2016																
Math placement test refresher or booster programs	14	■	■	■	■	■	■	■	■	■		■	■	■	■	■
STEM exploratory workshops	11	■	■	■	■	■		■	■	■	■	■		■		
College-readiness programs	13	■	■		■	■		■	■	■	■	■	■	■	■	■
Early College Fall 2015- Summer 2016*																
Math placement test refresher or booster programs	9		■		■	■		■		■		■		■	■	■
STEM exploratory workshops	12	■	■	■	■	■		■	■	■	■	■		■	■	
College-readiness programs	11	■			■	■		■	■	■	■	■	■	■	■	

*SSA Early College Activities were reported from Fall 2015-Summer 2016. Early College Activities include those designed to prepare high school students for college and career as well as engage them in a path to and through college.

■ w/SSA Funding ■ w/o SSA Funding

Retention and Completion Strategies

This section reviews strategies reported by sites in the Year 3 survey that align with the retention and completion aspects of the SSA model and thus relate to the primary goal of increasing "the number of STEM graduates and certificate holders that are produced by the community colleges and that transfer to a 4-year university or obtain STEM employment."

Summary of Key Findings

- ✓ **Advising, tutoring, and financial and social support continued to be widely implemented retention strategies in Year 3.**
- ✓ **There was continued focus on transfer exploration activities during the academic year and summer.**
- ✓ **More sites offered some form of career advising or career exploration in Year 3 as compared to Year 2.**

Retention Strategies

Advising (Table 5)

- 14 out of 15 sites indicated in their surveys that they implemented some form of STEM-focused advising in Year 3, and 13 of those sites used SSA funding to support these activities. In Year 2, all 15 sites offered STEM-focused advising; 12 supported it through SSA. (Figure 4)
- While over half of the sites provided professional development for advisors and about half of the sites offered advising software, most sites did not use their SSA funding for these programs in Year 3. (Figure 4) This pattern is similar to Year 2, with a slight decrease in implementation and SSA funding for professional development for advisors and a very slight increase in implementation and SSA funding for advising software.

Tutoring and academic support (Table 3)

- 14 out of 15 sites offered professional tutoring in Year 3, as compared with all 15 sites in Year 2. Each of these 14 campuses supported this work with SSA funds for some portion of Year 3. (Figure 5)
- Every site offered peer tutoring in Year 2 and Year 3, and there was no change in how many used SSA funding to support this activity (12 out of 15 both years). (Figure 5)

Figure 4. Academic Advising Year 2 & Year 3 with and without SSA funding (sites, n=15)

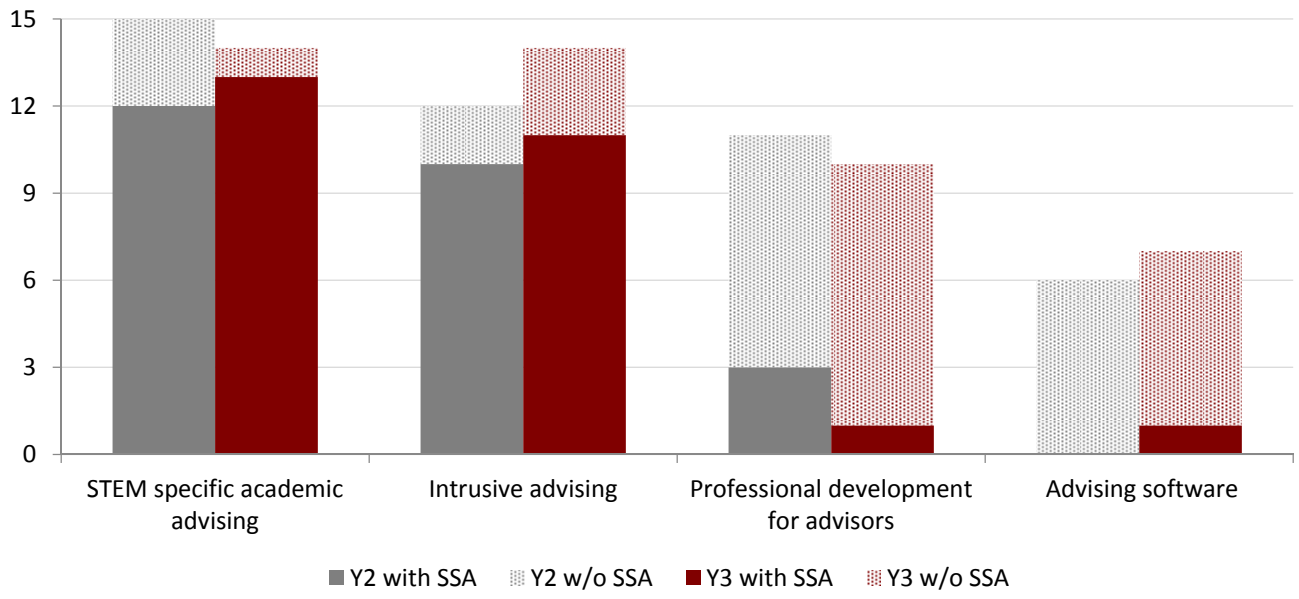


Figure 5. Academic Support Year 2 & Year 3 with and without SSA funding (sites, n=15)

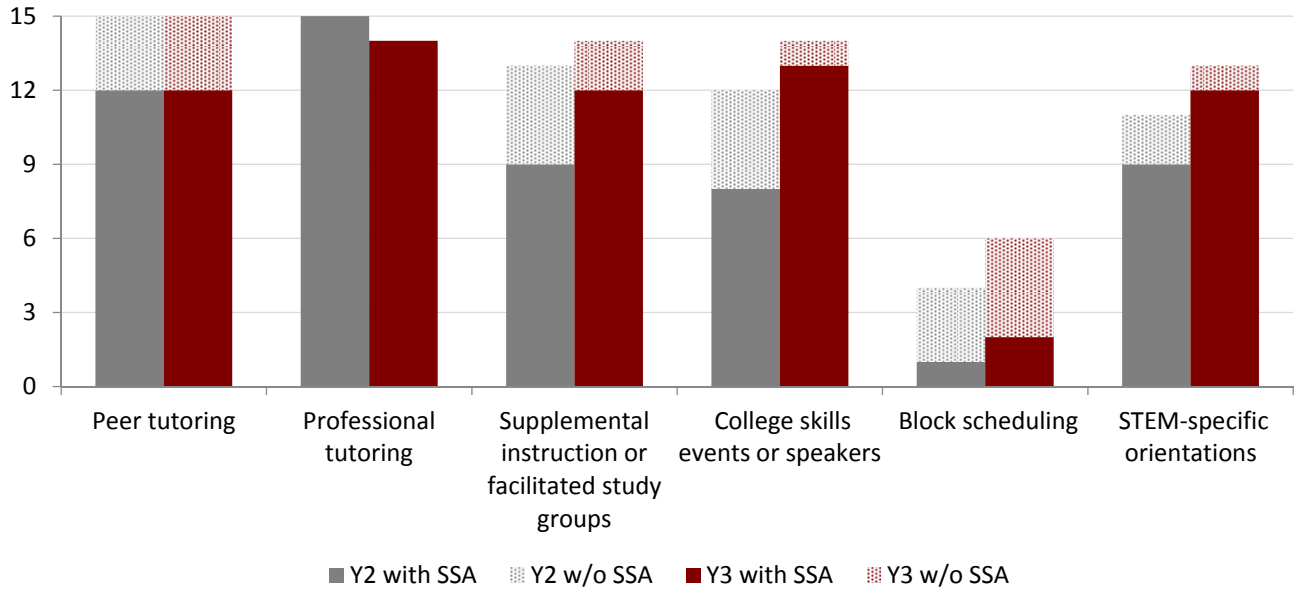


Table 5: Academic Advising Activities Funded With or Without SSA Funding, By Site, Year 3

	Total	Berkshire	Bristol	Bunker Hill	Cape Cod	GCC	Holyoke	Mass Bay	Massasoit	Middlesex	Mt. Wachusett	North Shore	Northern Essex	QCC	Roxbury	STCC
Academic Year 2015-2016																
STEM specific academic advising	13		w/SSA	w/SSA	w/SSA	w/o SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA		w/SSA	w/o SSA	w/SSA
Intrusive advising	12	w/SSA	w/SSA		w/SSA		w/SSA	w/o SSA	w/SSA	w/SSA	w/o SSA	w/SSA		w/SSA	w/o SSA	w/o SSA
Professional development for advisors	8	w/o SSA			w/o SSA	w/o SSA		w/o SSA			w/o SSA	w/o SSA		w/o SSA	w/o SSA	
Advising software	7	w/SSA	w/o SSA		w/o SSA				w/o SSA	w/o SSA				w/o SSA	w/o SSA	
Summer 2016																
STEM specific academic advising	14	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA		w/SSA	w/o SSA	w/o SSA
Intrusive advising	11		w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/o SSA		w/SSA	w/SSA	w/SSA		w/SSA	w/o SSA	
Professional development for advisors	8	w/o SSA	w/o SSA		w/o SSA			w/o SSA		w/SSA	w/o SSA	w/o SSA			w/o SSA	
Advising software	6	w/SSA	w/o SSA		w/o SSA				w/o SSA	w/o SSA					w/o SSA	
Early College Fall 2015 - Summer 2016*																
STEM specific academic advising	9		w/SSA		w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA				
Intrusive advising	6				w/SSA	w/o SSA	w/SSA			w/SSA	w/SSA	w/SSA				
Professional development for advisors	3				w/o SSA					w/SSA				w/SSA		
Advising software	2				w/o SSA				w/o SSA							

*SSA Early College Activities were reported from Fall 2015-Summer 2016. Early College Activities include those designed to prepare high school students for college and career as well as engage them in a path to and through college.

w/SSA Funding w/o SSA Funding

Social support (Table 6, Figure 6)

- Every site offered some form of social support through SSA during Year 3, including cohort-based meetings and activities, peer mentors, coaching or support from SSA coordinators, and providing studying or gathering space for SSA/STEM students.
- Social support activities were common across sites and were largely funded through SSA both in Year 2 and Year 3. These activities were offered by two thirds or more of sites in both years. Notably, however, while one fewer school offered a study or gathering space for SSA/STEM students in Year 3, a greater proportion of sites supported these spaces without SSA funding in Year 3 (50%, 6 of 12) than in Year 2 (31%, 9 of 13).
- With the exception of studying or gathering spaces, the majority of implementing sites used SSA funding to support these activities.
- Social support activities were also common elements of SSA Early College activities. Twelve sites supported cohort meetings/activities or peer mentors for their Early College programming through SSA. Sites have reported using social support elements to help students forge connections with their colleges and SSA programs, and to create continuity between summer and the academic year.
- The only social support activity in which the number of implementing sites increased between Year 2 and Year 3 was peer mentorship. 13 sites provided peer mentors in Year 3 as compared to 11 sites in Year 2. Of these 13 sites, 10 sites (77%) used SSA funding for these mentors in Year 3, which is a decrease in SSA funding usage from Year 2 (9 of 11 sites, 82%).

Financial support (Table 7, Figure 7)

- Every SSA site offered some form of financial support in Year 3 (including scholarships, participation stipends, textbook lending, book vouchers, or paid internships), with more support offered during the summer. Between 10-12 sites offered scholarships, participation stipends, book vouchers, or textbook lending in Year 3; this is similar to Year 2. Seven sites offered paid internships in Year 3, while only four had offered such internships in Year 2. Of the sites offering each of these types of financial support, the majority used SSA funding.
- Participation stipends and paid internships were entirely funded through SSA, and both activities increased between Year 2 and Year 3. Paid internships showed the largest growth of any of the financial support activities, with the number of sites nearly doubling from 4 to 7 between Year 2 and Year 3—all supported with SSA funding. One additional site offered participation stipends in Year 3, bringing the total to 10 sites—again, all funded through SSA.
- While the number of colleges that offered scholarships remained the same (12), the number of sites that used SSA funding for scholarships increased from 8 in Year 2 (67%) to 10 in Year 3 (83%).
- With the exception of book vouchers, the number of sites offering various forms of financial support remained level or increased between Year 2 and Year 3.
- Although the same number of colleges offered textbook lending in Year 2 and Year 3, fewer used SSA funding in Year 3.

Table 6: Social Support Activities Funded With or Without SSA Funding, By Site, Year 3

	Total	Berkshire	Bristol	Bunker Hill	Cape Cod	GCC	Holyoke	Mass Bay	Massasoit	Middlesex	Mt. Wachusett	North Shore	Northern Essex	QCC	Roxbury	STCC
Academic Year 2015-2016																
Cohort meetings	10															
Cohort activities	13															
Peer mentors	11															
Coaching/support from SSA coordinator	14															
Study or gathering space for SSA/STEM students	12															
Summer 2016																
Cohort meetings	9															
Cohort activities	13															
Peer mentors	12															
Coaching/support from SSA coordinator	14															
Study or gathering space for SSA/STEM students	12															
Early College Fall 2015 - Summer 2016*																
Cohort meetings	7															
Cohort activities	11															
Peer mentors	8															
Coaching/support from SSA coordinator	9															
Study or gathering space for SSA/STEM students	9															

*SSA Early College Activities were reported from Fall 2015-Summer 2016. Early College Activities include those designed to prepare high school students for college and career as well as engage them in a path to and through college.

w/SSA Funding w/o SSA Funding

Table 7: Financial Support Funded With or Without SSA Funding, By Site, Year 3

	Total	Berkshire	Bristol	Bunker Hill	Cape Cod	GCC	Holyoke	Mass Bay	Massasoit	Middlesex	Mt. Wachusett	North Shore	Northern Essex	QCC	Roxbury	STCC
Academic Year 2015-2016																
Scholarships	11	■	■		■	■	■	□		■	□	■	■		□	
Participation stipends	5				■			■	■	■			■			
Book vouchers	7	■	■			□	■			■	■				□	
Textbook lending	7	■			□	□				■	■		■		□	
Paid internships	8	□			□	■		■	■	■		■			□	
Summer 2016																
Scholarships	12	■	■	■	■	■	■	□		■	■	■	■		□	
Participation stipends	9	■		■	■			■		■	■		■		■	■
Book vouchers	10	■	■	■		■	■			■	■	■	■		□	
Textbook lending	10	■	■		□	■				■	■	■	■	□	□	
Paid internships	10	■			□	■		■	■	■		■		□	□	■
Early College Fall 2015 - Summer 2016*																
Scholarships	7		■		□	■	■			■	■	■				
Participation stipends	7	■			□			■		■				■	■	■
Book vouchers	6		■		□	■	■				■	■				
Textbook lending	5				□	■					■	■			■	
Paid internships	0															

*SSA Early College Activities were reported from Fall 2015-Summer 2016. Early College Activities include those designed to prepare high school students for college and career as well as engage them in a path to and through college.

■ w/SSA Funding □ w/o SSA Funding

Figure 6. Social Support Year 2 & Year 3 with and without SSA funding (sites, n=15)

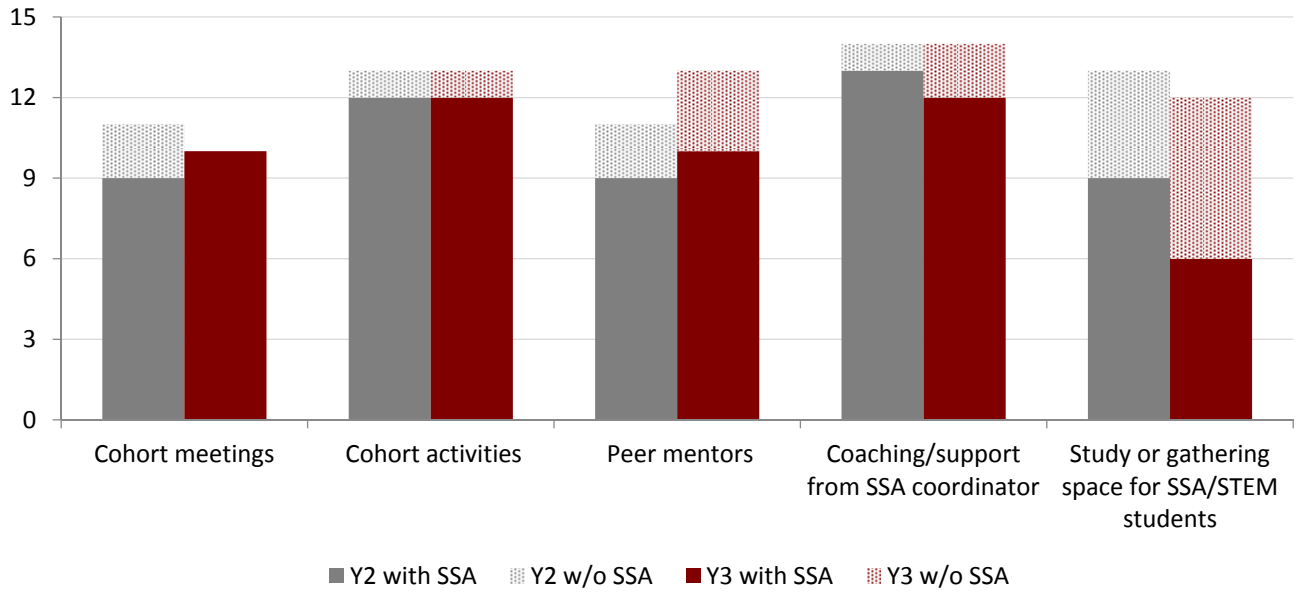
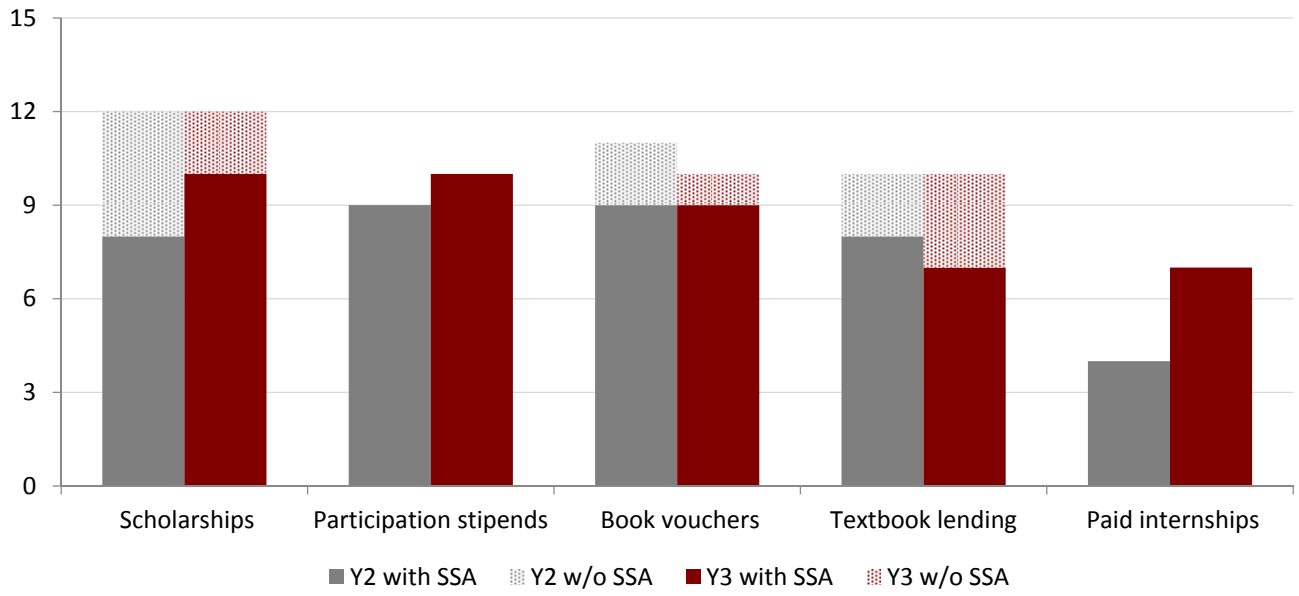


Figure 7. Financial Support Year 2 & Year 3 with and without SSA funding (sites, n=15)



Supporting and improving coursework (Table 8, Figure 8)

- In Year 3, 13 out of 15 sites provided professional development for faculty who teach STEM courses, and supported STEM curriculum revision or development. This is a modest increase from the number of sites providing these supports in Year 2. These efforts often aimed to create more engaging and better-aligned courses to prepare, retain, and transition students into STEM careers.
    - The proportion of sites that used SSA funding to support professional development for faculty who teach STEM courses increased from 4 out of 12 sites (33%) in Year 2 to 9 out of 13 sites (69%) in Year 3.
    - The proportion of sites that used SSA funding to support STEM curriculum revision or development increased from 5 out of 12 sites (42%) in Year 2 to 7 out of 13 sites (54%) in Year 3.
- Four additional sites offered professional development for STEM students in Year 3 as compared to Year 2 (a 44% increase), bringing the total to 13 sites in Year 3. 10 out of 13 sites (77%) used SSA funding for these activities in Year 3, whereas 8 out of 9 sites (89%) did so in Year 2.
- Fewer sites offered professional development for advising staff in Year 3 (9 sites in Year 3 as compared to 12 sites in Year 2). All reported professional development for advising staff in Year 3 was accomplished without the use of SSA funding, which is similar to Year 2.

Figure 8. Professional Development Year 2 & Year 3 with and without SSA funding (sites, n=15)

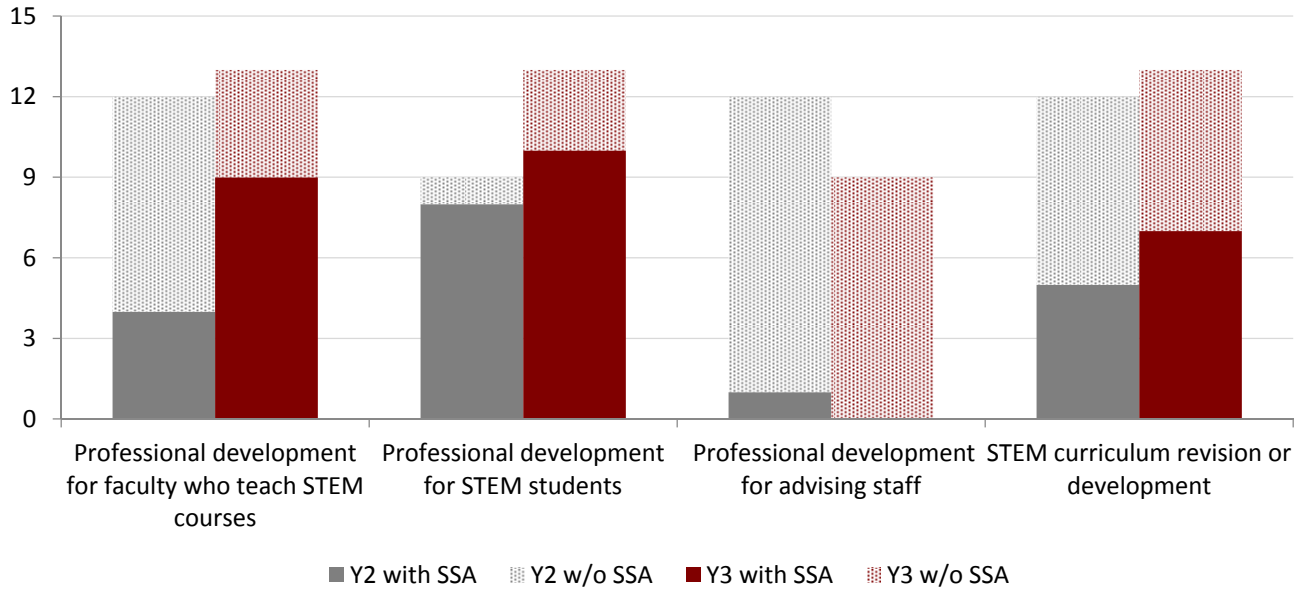


Table 8: Professional Development Activities Funded With or Without SSA Funding, By Site, Year 3

	Total	Berkshire	Bristol	Bunker Hill	Cape Cod	GCC	Holyoke	Mass Bay	Massasoit	Middlesex	Mt. Wachusett	North Shore	Northern Essex	QCC	Roxbury	STCC
Academic Year 2015-2016																
Professional development for faculty who teach STEM courses	11															
Professional development for STEM students	12															
Professional development for advising staff	8															
STEM curriculum revision or development	13															
Summer 2016																
Professional development for faculty who teach STEM courses	9															
Professional development for STEM students	7															
Professional development for advising staff	7															
STEM curriculum revision or development	8															
Early College Fall 2015 - Summer 2016*																
Professional development for faculty who teach STEM courses	4															
Professional development for STEM students	3															
Professional development for advising staff	3															
STEM curriculum revision or development	3															

*SSA Early College Activities were reported from Fall 2015-Summer 2016. Early College Activities include those designed to prepare high school students for college and career as well as engage them in a path to and through college.

w/SSA Funding w/o SSA Funding

Infrastructure investments (Table 9, Figure 9)

- Slightly fewer sites invested in classroom technology and laboratory equipment in Year 3 than in Year 2, although more than two thirds of sites continued to make these investments. The vast majority of these sites used SSA funding, and the number of sites doing so remained the same in Year 2 and Year 3.
- There was a slight increase in the number of sites that invested in software in Year 3. Again, this was largely supported with SSA funding.

Figure 9. Equipment Investments Year 2 & Year 3 with and without SSA funding (sites, n=15)

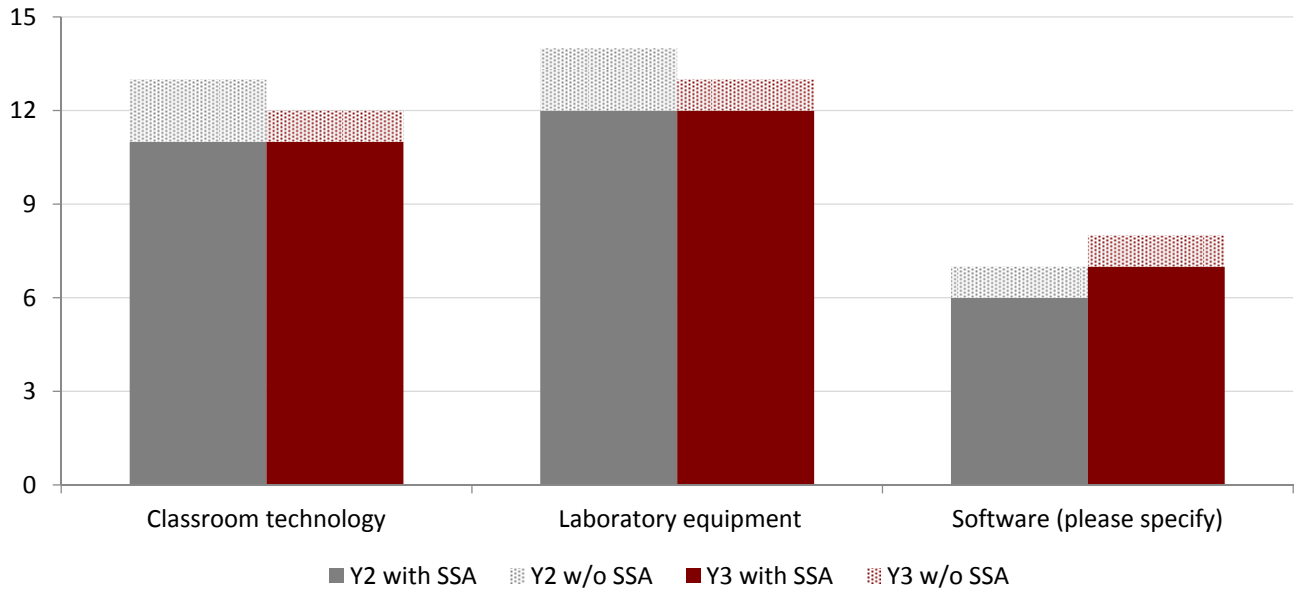


Table 9: Equipment Funded With or Without SSA Funding By Site, Year 3

	Total	Berkshire	Bristol	Bunker Hill	Cape Cod	GCC	Holyoke	Mass Bay	Massasoit	Middlesex	Mt. Wachusett	North Shore	Northern Essex	QCC	Roxbury	STCC
Academic Year 2015-2016																
Classroom technology	11	w/o		w/	w/o	w/	w/			w/	w/o	w/	w/	w/	w/o	
Laboratory equipment	10	w/			w/o	w/	w/	w/o	w/		w/o	w/		w/	w/	
Software	6	w/			w/o		w/			w/	w/				w/	
Summer 2016																
Classroom technology	10	w/			w/o	w/o	w/			w/	w/	w/		w/	w/	w/
Laboratory equipment	12			w/	w/	w/	w/	w/o	w/	w/	w/	w/		w/	w/	w/
Software	7	w/			w/o		w/	w/		w/		w/			w/o	
Early College Fall 2015 - Summer 2016*																
Classroom technology	2					w/o				w/						
Laboratory equipment	4					w/o			w/	w/					w/	
Software	3							w/		w/		w/				

*SSA Early College Activities were reported from Fall 2015-Summer 2016. Early College Activities include those designed to prepare high school students for college and career as well as engage them in a path to and through college.

w/SSA Funding w/o SSA Funding

Completion Strategies

Career exploration (Table 10, Figure 10)

- Career exploration activities were widely implemented in Year 3. SSA funding supported some of these activities at every site (although proportions varied by activity). Two thirds of sites included SSA-funded career exploration activities as part of their Early College High School programs.
- Every career exploration activity was offered by either the same number or more sites in Year 3 than in Year 2. There was a small to moderate increase between Year 2 and Year 3 in the number of sites offering career advising, career exploration speakers or events, and professional mentorship.
- More than two thirds of sites offered career advising; career exploration speakers, events, or field trips; or internships. With the exception of internships, the majority of sites supported these activities with SSA funds.
- 100% of the sites offered career advising and career exploration speakers or events targeted to current students in Year 3. This is a small (1 site) increase from Year 2.
- The number of sites providing internships for career exploration (13) remained stable between Year 2 and Year 3. There was a small increase in the number and proportion of sites using SSA funding to support these internships from 4 of 13 (30%) in Year 2 to 6 of 13 (46%) in Year 3.
- The same number of sites offered research opportunities in Year 3 and Year 2 (10); however, the number and proportion of sites that used SSA funding for these research opportunities decreased from 8 (80%) in Year 2 to 5 (50%) in Year 3.
- More colleges offered professional mentorships in Year 3 (9) than in Year 2 (7), largely without SSA funding (7 without SSA funding in Year 3).

Figure 10. Career Exploration Year 2 & Year 3 with and without SSA funding (sites, n=15)

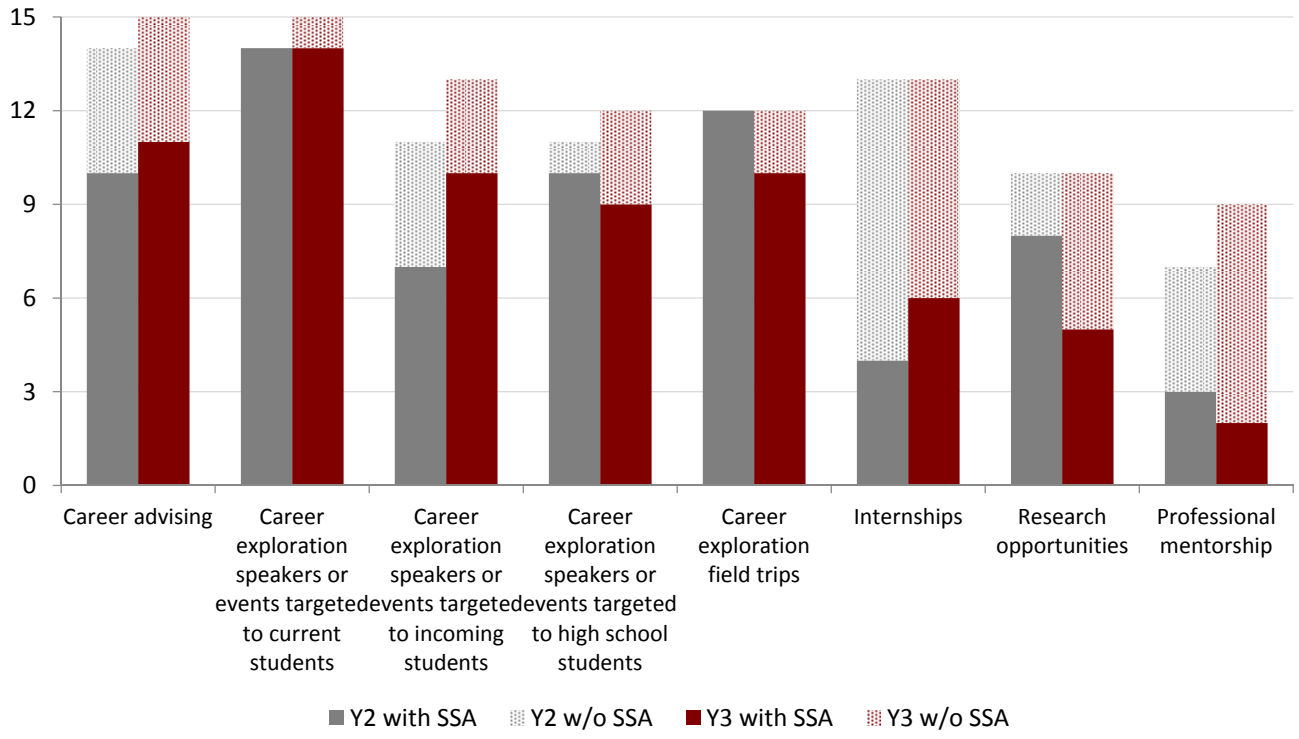


Table 10: Career Exploration Activities Funded With or Without SSA Funding, By Site, Year 3

	Total	Berkshire	Bristol	Bunker Hill	Cape Cod	GCC	Holyoke	Mass Bay	Massasoit	Middlesex	Mt. Wachusett	North Shore	Northern Essex	QCC	Roxbury	STCC
Academic Year 2015-2016																
Career advising	15		■				■	■	■	■		■		■		■
Career exploration speakers or events targeted to current students	15	■	■	■	■		■	■	■	■	■	■	■	■		■
Career exploration speakers or events targeted to incoming students	8		■		■		■	■			■					
Career exploration speakers or events targeted to high school students	10	■	■		■	■		■					■			
Career exploration field trips	11	■	■				■	■	■	■		■		■		
Internships	12					■		■	■	■		■				
Research opportunities	7					■		■	■	■						
Professional mentorship	8							■				■				
Summer 2016																
Career advising	12	■	■			■	■	■	■	■	■	■				■
Career exploration speakers or events targeted to current students	11		■			■	■	■	■	■	■	■				■
Career exploration speakers or events targeted to incoming students	10	■	■				■	■	■	■		■				■
Career exploration speakers or events targeted to high school students	10		■					■		■		■	■			■
Career exploration field trips	7	■	■				■		■		■					■
Internships	9	■				■		■		■						
Research opportunities	9					■		■	■	■						■
Professional mentorship	7							■				■				
Early College Fall 2015 - Summer 2016*																
Career advising	11		■	■		■		■	■	■	■	■			■	■
Career exploration speakers or events targeted to current students	5						■	■		■					■	
Career exploration speakers or events targeted to incoming students	8					■	■	■	■	■		■			■	
Career exploration speakers or events targeted to high school students	10		■			■		■	■	■	■	■			■	■
Career exploration field trips	6					■	■		■		■				■	■
Internships	0															
Research opportunities	3					■			■						■	
Professional mentorship	2											■				

*SSA Early College Activities were reported from Fall 2015-Summer 2016. Early College Activities include those designed to prepare high school students for college and career as well as engage them in a path to and through college.

■ w/SSA Funding ■ w/o SSA Funding

Transfer exploration (Table 11, Figure 11)

- All sites offered some form of transfer-focused events, activities (including field trips), or speakers, and about half used SSA funding to support these activities. This is consistent with Year 2 results.
- In Year 2, every site offered transfer-specific advising for STEM fields. In Year 3, the number of sites incorporating this advising dropped to 13 sites. However, the number and proportion of sites using SSA funding to support this advising increased from 9 of 15 (60%) in Year 2 to 11 of 13 (85%) in Year 3.
- The number of sites offering transfer-focused field trips fell from 14 in Year 2 to 12 in Year 3, with about half of sites supporting these trips with SSA funding each year.

Figure 11. Transfer Exploration Year 2 & Year 3 with and without SSA funding (sites, n=15)

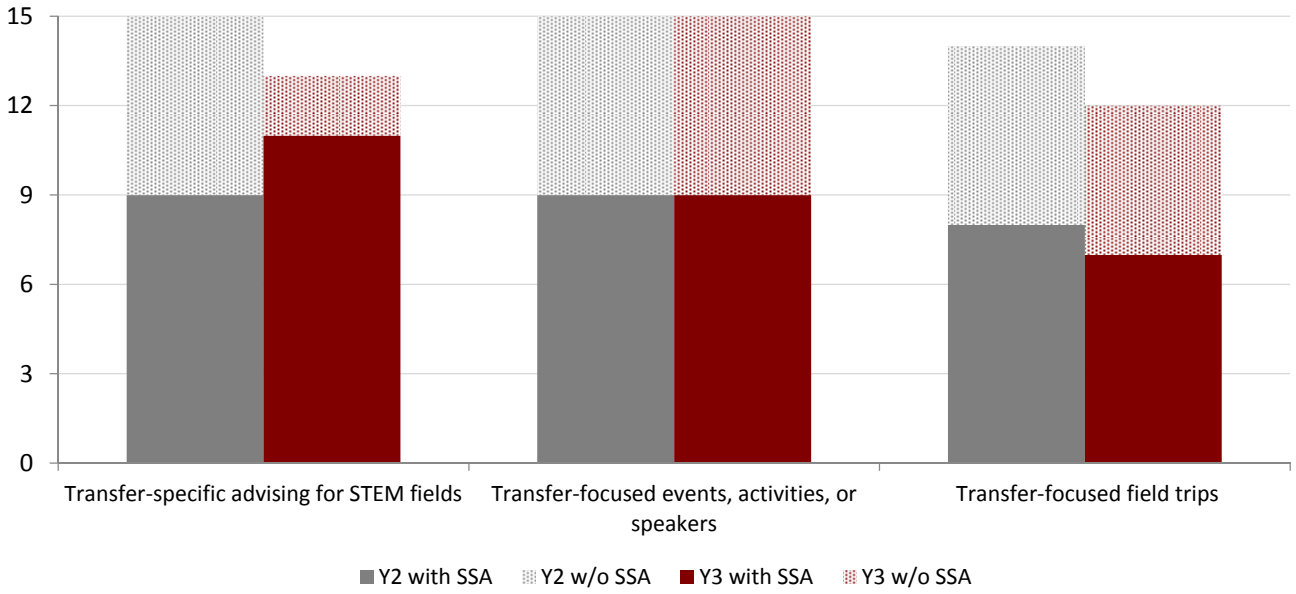


Table 11: Transfer Exploration Activities Funded With or Without SSA Funding, By Site, Year 3

	Total	Berkshire	Bristol	Bunker Hill	Cape Cod	GCC	Holyoke	Mass Bay	Massasoit	Middlesex	Mt. Wachusett	North Shore	Northern Essex	QCC	Roxbury	STCC
Academic Year 2015-2016																
Transfer-specific advising for STEM fields	13	w/o	w/SSA		w/o	w/o		w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/SSA	w/o	w/SSA
Transfer-focused events, activities, or speakers	14	w/o	w/o	w/SSA	w/o	w/o	w/SSA	w/SSA	w/SSA	w/o	w/SSA	w/SSA	w/SSA	w/SSA	w/o	
Transfer-focused field trips	10	w/SSA	w/o	w/SSA	w/SSA			w/SSA	w/SSA		w/o	w/o		w/o	w/o	
Summer 2016																
Transfer-specific advising for STEM fields	12	w/SSA	w/SSA		w/o	w/SSA		w/SSA	w/SSA	w/SSA	w/SSA	w/SSA		w/SSA	w/o	w/SSA
Transfer-focused events, activities, or speakers	11	w/o	w/o		w/o	w/o	w/SSA		w/SSA	w/o	w/SSA	w/SSA			w/o	w/SSA
Transfer-focused field trips	7		w/o		w/SSA	w/o			w/SSA		w/SSA				w/o	w/SSA
Early College Fall 2015 - Summer 2016*																
Transfer-specific advising for STEM fields	6		w/SSA			w/o			w/SSA			w/SSA			w/SSA	w/SSA
Transfer-focused events, activities, or speakers	5					w/o			w/SSA			w/SSA			w/SSA	w/SSA
Transfer-focused field trips	6		w/o			w/o			w/SSA		w/SSA				w/SSA	w/SSA

*SSA Early College Activities were reported from Fall 2015-Summer 2016. Early College Activities include those designed to prepare high school students for college and career as well as engage them in a path to and through college.

w/SSA Funding w/o SSA Funding

Industry Engagement (Table 12, Figure 12)

- Engagement with industry was fairly widespread among SSA sites, and was largely carried out without SSA funding. Every site implemented at least one form of industry engagement (e.g., speakers, curriculum development, advisory boards, and internships) in Year 3. This is a modest increase from Year 2.
- Every site hosted industry speakers or engaged instructors from industry in Year 3, which is a modest increase from the 13 sites that did so in Year 2. The number of sites funding these activities through SSA remained the same, thereby lowering the proportion of implementing sites from 85% (11 of 13) in Year 2 to 73% (11 of 15) in Year 3.
- At least two thirds of sites offered other industry-engagement activities (industry-aligned curriculum development, industry advisory boards, and industry-based internships), the majority without SSA funding. The number of sites using SSA funding to support each of these activities grew slightly between Year 2 and Year 3. Most notably, the number of sites supporting industry-based internships with SSA funding grew from 2 in Year 2 to 5 in Year 3.

Figure 12. Industry Engagement Year 2 & Year 3 with and without SSA funding (sites, n=15)

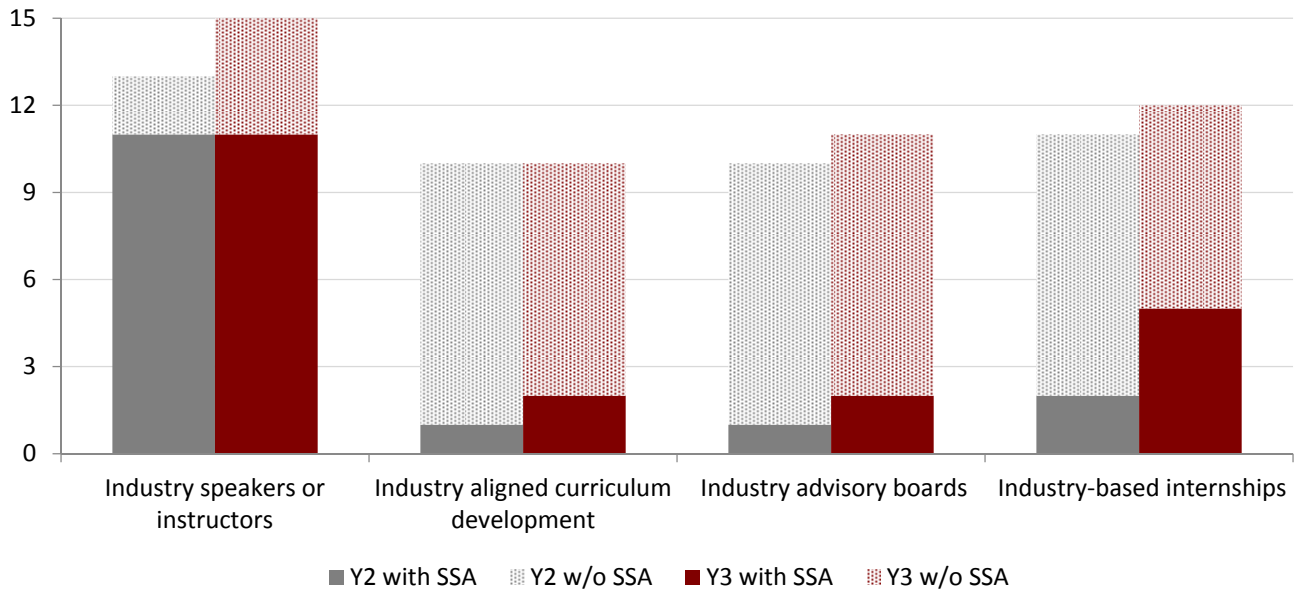


Table 12: Industry Engagement Activities Funded With or Without SSA Funding, By Site, Year 3

	Total	Berkshire	Bristol	Bunker Hill	Cape Cod	GCC	Holyoke	Mass Bay	Massasoit	Middlesex	Mt. Wachusett	North Shore	Northern Essex	QCC	Roxbury	STCC
Academic Year 2015-2016																
Industry speakers or instructors	15	w/o	w/	w/o	w/	w/o	w/	w/	w/	w/	w/o	w/	w/	w/o	w/o	w/
Industry aligned curriculum development	10	w/o			w/o	w/o		w/		w/o	w/o	w/	w/o	w/o	w/o	
Industry advisory boards	11	w/o	w/o		w/o	w/o		w/o		w/	w/o	w/	w/o	w/o	w/o	
Industry-based internships	12	w/o	w/o	w/o	w/o	w/		w/		w/	w/o	w/	w/o	w/o	w/o	
Summer 2016																
Industry speakers or instructors	13	w/	w/		w/o	w/o	w/	w/	w/	w/	w/	w/		w/o	w/o	w/
Industry aligned curriculum development	7				w/o	w/o		w/o		w/o	w/o	w/o			w/o	
Industry advisory boards	5	w/o				w/o		w/o				w/			w/o	
Industry-based internships	8	w/	w/o	w/o	w/o	w/		w/		w/					w/o	
Early College Fall 2015- Summer 2016*																
Industry speakers or instructors	9		w/			w/o		w/	w/	w/		w/		w/	w/	w/
Industry aligned curriculum development	3					w/o		w/o						w/		
Industry advisory boards	1					w/o										
Industry-based internships	0															

*SSA Early College Activities were reported from Fall 2015-Summer 2016. Early College Activities include those designed to prepare high school students for college and career as well as engage them in a path to and through college.

w/SSA Funding w/o SSA Funding

STEM Starter Academy - Year 3 Site Report Narrative for *[College]*

The purpose of the STEM Starter Academy Year 3 report is to review your institution's work with SSA in Year 3 (September 2015 – August 2016). **SSA Year 3 work includes all work done with the entire $300,000 FY16 budget, including the $50,000 early college supplement.**

We hope this opportunity to reflect will inform your site-specific evaluation efforts. As part of this reflection process, we encourage sites to review their Year 2 site reports and the Year 3 planning documents sent to DHE.

Year 3 site reports will contribute valuable information to DHE's report to the Massachusetts Legislature in March 2017, and will also help inform the technical assistance strategy and evaluation efforts of the initiative as a whole.

This Year 3 Site Report Narrative will be combined with your site's responses to the Year 3 Site Report Survey. The two parts together will comprise your site's STEM Starter Academy Year 3 Report.

REPORT SUBMISSION INSTRUCTIONS:

Please complete the information requested below and **submit your reports by email to Allison Scheff Little at alittle@bhe.mass.edu (with CC to Jackie Stein at jstein@donahue.umassp.edu) by the end of the day November 4, 2016.**

RESPONDENT INFORMATION:

Community College:

SSA Staff Contact Information:

SSA Role	First Name	Last Name	Email Address	Phone Number

Please provide contact information for IR personnel who manage SSA data at your institution:

Title	First Name	Last Name	Email Address	Phone Number

STEM Starter Academy - Year 3 Site Report Narrative for *[College]*

YEAR 3 REVIEW (September 2015 – August 2016)

In your review of Year 3, please report on the entirety of your SSA programs, including any work involving Early College programming.[1]

1. Participation

a. Please use the following table to describe participation in your SSA activities during Year 3. If activities were offered as part of a larger whole (for example: two different courses offered as part of a summer bridge program), please indicate this. Please add extra rows to this table, as needed.

		How many individuals…							
Activity Name	**Term(s)** (e.g., Fall 2015)	**Applied**	**Were accepted**	**Enrolled or participated**	**Completed the activity**	**Brief description of activity**	**Early College activity?** (Yes or No)	**Type of participants** (e.g., current community college students, high school students)	**Recorded as primary or secondary participants?** (please indicate how many participants in each category)

[1] Early College activities include any SSA funded activities designed to prepare high school students for college and career and engage them in a path to and through college (regardless of whether the activity was funded through the supplemental $50,000).

STEM Starter Academy - Year 3 Site Report Narrative for *[College]*

2. Overview

a. As you reflect on SSA implementation at your institution over the past three years, what elements have emerged as the key or main components of your institution's SSA program?

b. What are the practices or strategies that have most contributed to the success of SSA at your institution?

c. In Year 3, what was the message you shared with stakeholders to define or describe SSA at your site?

3. Year 3 implementation – Successes and Challenges

a. What were the main successes with the implementation of your STEM Starter Academy grant during Year 3?

b. What were the main challenges with the implementation of your STEM Starter Academy grant during Year 3?

c. Describe the most significant benefits for your institution as a result of STEM Starter Academy activities during Year 3.

d. In Year 3, what were the most notable changes in your institution's SSA programming from previous years? What led to those changes?

4. Recruitment

a. What SSA outreach or recruiting activities have been most successful? How do you know?

b. In Year 3, did you target underrepresented or non-traditional students through your outreach or recruitment activities? If so, how were these groups targeted? Were these strategies successful?

c. How were participants selected from among those who applied for SSA programs in Year 3?

5. Readiness

a. What strategies did your college implement through SSA in Year 3 to ready students for college or STEM fields? Which were most successful? What evidence suggests the success of these strategies?

b. Did your college run a summer program through SSA in Year3? If so, please briefly describe the elements of that/those program(s).

c. Did your college offer any STEM Starter Academy-sponsored developmental math interventions (e.g., developmental math courses, non-credit workshops) in Year 3? If so, please briefly describe the intervention(s) and any progress or outcomes you tracked.

6. Retention

a. What strategies to retain students did your college implement through SSA in Year 3? Which were most successful? What evidence suggests the success of these strategies?

7. Completion (graduation, transfer, job placement)

a. What strategies to move students toward completion (graduation, transfer, job placement) did your college implement through SSA in Year 3? Which were most successful? What evidence suggests the success of these strategies?

STEM Starter Academy - Year 3 Site Report Narrative for *[College]*

b. Please describe how SSA at your institution is supporting a pipeline to entry into the STEM workforce.

8. Sustainability

a. Please describe your institution's efforts to make SSA programs and activities sustainable beyond the period of grant funding.

   i. Which efforts have been the most successful?

   ii. What have been the biggest challenges?

   iii. If not addressed above, please specifically discuss the sustainability of any stipends, scholarships, or in-kind incentives; and the sustainability of coordinator or support positions.

b. In what ways and to what extent have SSA activities been integrated into ongoing campus endeavors or other grant funded initiatives in Year 3?

c. Please describe any challenges your institution has faced in integrating STEM Starter Academy activities into your college's other initiatives and programs.

9. Data and Tracking

a. What strategies did you use in Year 3, if any, to track SSA students for your own internal purposes?

b. What evidence have you collected, if any, that suggests student success in your institution's SSA programs? (If your site collected specific information about your SSA participants [e.g., passing rates], please provide a summary of your findings.)

c. Does your site have any measurement priorities or plans beyond what DHE and UMDI are measuring at the state-wide initiative level? Please describe.

d. Are there compelling stories of student experiences or successes with your SSA programs or activities that you would be willing to share with stakeholders? Please describe.

10. Early College

a. If you did not already discuss any SSA-related Early College activities or programming at your institution in the sections above, please describe these activities here.

11. Technical Assistance and Other Comments

a. Please describe any technical assistance or support needs you have from DHE.

b. Do you have other comments about your Year 3 SSA activities that would inform the evaluation of this initiative?

DHE Reflections on Progress to Date and Future Considerations

This section presents findings from two interviews with DHE personnel who guide the STEM Starter Academy Initiative at the statewide level.[1] In January and October 2016, the UMDI project manager conducted an hour-long telephone interview with the Associate Commissioner for Economic and Workforce Development and the Executive Director of STEM. The first interview took place about a third of the way into Year 3. It explored the interviewees' perspectives on the implementation of SSA during Year 3 and their vision for the initiative moving forward. The interview also included some closing reflections on Year 2 that were summarized in the Year 2 Evaluation Report. A summary of this interview was provided in the September 2016 Evaluation Report Supplement. The second interview took place at the start of Year 4 and captured additional reflections on the project to date as well as considerations moving forward.

The interview protocol is provided in Appendix T. Key findings that are relevant to Year 3 and that may guide future implementation and planning for next steps are summarized here.

Successes to date

In January, DHE identified several successes of early Year 3 activities. Successes included improved expenditure reporting from sites (which gave DHE a better understanding of the sustainability and institutionalization status of SSA), campus engagement in a working group on students' post-SSA experiences, and emerging conversations at the state level about SSA's role in a larger continuum of activities that support students from high school through four-year programs. In October, DHE noted that some campuses were beginning to appreciate and implement ideas from other campuses, citing examples such as the establishment of physical centers and more targeted recruitment efforts. It was also noted that campuses are beginning to shift their allocation of resources, suggesting a growing attention to sustainability. The Executive Director cited examples such as declining equipment purchases and the establishment of a STEM coordinator role: that is, someone responsible for thinking about STEM work in broad terms rather than SSA specifically.

DHE representatives also acknowledged the campuses' commitment to participating in the SSA evaluation. They indicated that the development and implementation of three new measures (i.e., the Participant Exit Survey, the Student Experience Survey, and the "low-dose" measure) reflect the maturation of the grant and the evaluation as well as a focus on learning, although DHE awaits the results of these measures before identifying them as clear successes.

In terms of DHE facilitation of the initiative, DHE representatives stated in October that campus input through the working groups has been important, allowing the department to hear a consistent message from a few campuses and apply those messages to the system. They felt as well that the development of the model and campus adoption of it was helpful in facilitating conversations across campuses. Additionally, the Associate Commissioner found that the two-person leadership structure of the initiative was effective, enabling him to step back from current implementation and instead focus on forward-looking issues such as how to communicate the story of SSA.

[1] Please note that a third interview was conducted on Feb. 14, 2017. Highlights from that interview are included in the body of the report

Preliminary dialogue about the future of SSA work and the rolling out of Year 4 as planned were also cited in the October interview as evidence of success.

Reflections on sites

In January, DHE staff expressed appreciation that sites' plans for Year 3 reflected clear movement toward the program model that had been developed during Year 2. They felt that SSA sites had begun to attend more to strategies to help place students into jobs, expose them to careers, and help them transfer to four-year schools—strategies which had previously received less attention as campuses focused on recruiting, enrolling, and supporting students. With clearer definitions of SSA's target populations and goals, DHE staff felt that they were better able to "negotiate" with campuses about bringing their programs into alignment with the model.

In October, DHE staff noted that while career and transfer strategies figured more prominently in Year 3 plans than before, they now recognized that campuses may not necessarily have known how to implement them. They reflected that the Spring 2016 retreat offered some recommended strategies (e.g., a resource person to find internships, mock interviews, resume reviews), and that those strategies appeared in Year 4 plans. Asked to reflect on the practices that appeared to be most promising at the end of Year 3, the interviewees highlighted the centralization of STEM-related efforts ("all things STEM"), summer bridge programs, and a cohort-based model. They emphasized factors such as students knowing when and where to access STEM resources and having access to a support network.

DHE staff described reaching out to campuses early in Year 3 to facilitate conversations about Year 4 planning. They believed that the conversations were helpful to campuses and indicated that several campuses had actually requested conversations. At the time of the October interview, the department was planning to meet with one site to explore how the influence of SSA could be spread across the entire campus. The DHE representatives believe that these meetings and conversations are useful in that they expose campuses to varying approaches to carrying out SSA work.

Challenges and areas for continued attention

Challenges to DHE's facilitation of SSA early in Year 3 included helping campuses understand and manage data collection for SSA, and communicating the value of the initiative to a broader community beyond the limited group of those already deeply invested.

In the fall, interviewees reported that these challenges were being addressed, but that they still required ongoing attention. Interviewees indicated the effectiveness of UMDI's role in managing data collection processes and noted that campus SSA coordinators understood the purpose of the evaluation instruments and their relevance to their work. DHE representatives concurred that "getting the message out" and "telling the story"—communicating the value of SSA and the lessons learned—continue to be a work in progress. The department aims to engage with a broader audience, including moving beyond a subset of campus representatives and engaging with presidents and additional stakeholders, especially with an eye toward the completion of Year 4 and planning for the next steps.

In terms of integrating SSA with other initiatives, the department found over the course of Year 3 that work to connect SSA to other programs both on and off campus was helping to "break down silos" and demonstrate the alignment of SSA practices with a larger continuum of activities that support students from high school through four-year programs. One interviewee described a shift in orientation at the

departmental level, moving from a view that attempts to fit multiple programs into SSA toward one that instead takes into account a broad base of work, asking what the SSA lens is for that work. This speaker indicated that a next step would be to help ensure that campuses also adopt this understanding.

A few challenges specific to sites' implementation of the initiative were also identified, including:

- *The timeframe for spending grant money* – Some campuses were challenged to spend grant money according to the grant's timeline. However, the state's fiscal calendar may not align with campuses' fiscal calendars, therefore posing pressure on those campuses to execute expenditures in a relatively short time period. Additionally, campuses cannot know in September, when they are planning their budgets, what level of summer program enrollments they will actually have, and so, if those programs are ultimately under-enrolled, staff then need to spend those resources in a relatively short period of time over the summer.
- *Varying levels of innovation and change across the sites* – DHE staff observed that differing levels of knowledge and/or "empowerment" to implement recommended changes, including best practices, may account for differing implementation across sites.
- *Sense of fatigue and/or waning excitement from campuses* – DHE staff perceived that the working groups demonstrated somewhat less excitement this summer than in the past. They acknowledge that this may in part reflect a natural evolution of the grant cycle, and they are thinking about how to excite campuses again and considering that future planning may offer some leverage in that regard.

Looking forward

In January, DHE staff intended to continue their efforts to be "supporters and collaborators" with SSA sites in managing the initiative. As part of this effort, they added a second, in-person, annual retreat because campuses' positive response to these events felt like a "powerful statement of collaboration and success."

Asked if their perspectives had changed on the prospect of sustainability for SSA, DHE staff said in January that they felt that they had identified core elements of SSA that were likely sustainable. They wanted to continue conversations with sites and with the Sustainability Working Group to get feedback on what elements might need continued external funding (including staff and tuition support or stipends). They felt that improved communication between DHE and campuses in the latter part of Year 2 and early part of Year 3 had helped to improve sites' understandings of the program's goals, and thus their abilities to work toward sustainability.

Also in January, DHE staff expressed interest in a new approach to measuring SSA impact by introducing an element of "dosage" to measure students' participation in and exposure to SSA programming and supports.

Year 4 work had just begun at the time of the October interview, and DHE staff planned their facilitation with a future-looking focus. They intended to continue improving communication between DHE and the sites (including about data and reporting) as well as helping to connect and integrate SSA programs with other initiatives (including the regional PKAL network and Early College initiatives). At an upcoming Project Kaleidoscope (PKAL) meeting, for example, the department planned to co-facilitate—with SSA sites—sessions on 2-year/4-year college transfer. The intent is to support sustainability of STEM efforts

by demonstrating the important role that community colleges play. One speaker commented, "We want to show that, in the long term, the community colleges are part of this network and belong here regardless if SSA continues or not. These are STEM community college transfer efforts." An additional consideration for Year 4 and beyond is that the working groups may again be involved in facilitation. Overall, though, as another speaker commented, there was not much change underway in Year 4, which was viewed as a positive characteristic reflecting the "necessary stability in implementation of the program."

Asked whether patterns emerged across sites' Year 4 plans (which had been submitted in mid-August 2016), one speaker identified the following trends:

- variability across sites in the level of detail they provide about what SSA model practices they are implementing and which are working
- an acknowledgment of decreasing financial supports and consequently more thinking about sustainability
- expanded ("beefing up") staffing, which was a recommendation from the spring retreat
- centralization of the work, connecting with offices on campus
- connection to other DHE strategies

Reflecting on sites' plans, DHE staff identified a need for the department to continue to engage with campuses and encourage them to think about how to do certain activities (e.g., co-requisite model of developmental math, approaches to placement). They commented that the requirement for campuses to draft year-long plans in advance has been valuable, and that the department's role is to help campuses reflect on those plans and consider whether the plans engage best practices and/or whether alternatives may be warranted. They noted that campuses are endeavoring to put into place the practices they have heard about from other campuses, and that some plans incorporate these strategies (e.g., targeted recruitment for students coming to campus, and supplemental instruction).

Asked to identify lessons that they would carry forward either in SSA or more broadly, the interviewees identified positive experiences of:

- feedback between the campuses and the department
- the department having a vision "to solidify a common movement"
- working groups and extensive campus participation during the first three years

Entering Year 4 and moving forward, the department is focused on helping campuses think about institutionalizing certain SSA elements and figuring out which elements campuses should own in terms of budget. One speaker commented that it is "an important transition across three years that is happening in this moment." The Associate Commissioner remarked that DHE's work has been "the design of the project, particularly the last two years, and the development of the model." He noted that he currently observes somewhat of a shift in the work in terms of thinking about "what should be codified in campus budgets and practices," but that, overall, the department plays a facilitation role and that his sense is that the facilitation is effective. The Associate Commissioner anticipates continued conversation with the Executive Director in order to focus on future planning and implementation.

The Executive Director commented that the role of the state in supporting student work is a key question and will be considered as the initiative moves forward. Additionally, DHE staff is working to identify the appropriate level of funding and, in particular, is reflecting on whether each campus needs equal funding. The department is also interested in exploring better funding models for campus staffing, noting that campuses that have enjoyed relatively stable staffing demonstrate more consistent programming. The department is interested in whether a staffing model that includes one full-time position leads to better implementation and enhanced sustainability than a model that employs several part-time staff.

Interviewees expressed appreciation for the collaborative relationship with the evaluators and the thoughtful approach to evaluation. The Associate Commissioner signaled a need to balance process and outcomes orientations moving forward, noting that in the current environment outcomes will be increasingly important, and that resources will need to be allocated in order to achieve the right mix.

Quantitative Methods

Differences in treatment and comparison group students were assessed using a quasi-experimental matched comparison group design. Multi-level mixed-effect logistic regression analyses were conducted to assess the impact of participation on two outcomes—any positive educational outcome (i.e., graduation, retention, transfer), and STEM graduation/program completion status—where students were nested within sites. Carefully selected covariates were included in each analysis to minimize the potential for bias. These covariates included gender, race/ethnicity, STEM status at time of admission, and college math ready status at time of admission. This design enabled strong inferences about the performance of students who participated in the intervention as compared to the expected level of student performance in the absence of the intervention.

Students were not randomly assigned to the intervention. Each site applied their own criteria to assign students to treatment. Therefore, it is likely that there were pre-intervention differences between participating students and non-participating students. These differences could have represented a significant threat (i.e., selection bias) to the validity of the study's findings. To reduce these differences substantially, propensity score weighting procedures were used, thereby improving the validity of the estimates of program impacts.

In total, 9 models comparing SSA participants to non-participants were analyzed. For all of the models assessed in this study, propensity score weighting results were within the parameters specified in the U.S. Department of Education's What Works Clearinghouse "Procedures and Standards Handbook" (2014). To analyze program impacts one year after joining data were pooled across years, reflecting an assumption that the effects of participation in SSA were similar across years of the study.

Sample selection

Effects of participation were assessed one year after initial participation and two years after initial participation. Depending on the time period and outcome indicator, different groups of students were included in the analyses. Specifically:

1. Positive educational outcomes (i.e., graduation, retained at same institution, transferred) were assessed one and two years after initial entry into SSA. Outcomes for students who joined SSA in the fall of 2014 or the fall of 2015 as first-time, full-time freshman were compared to similar students who did not participate in the intervention. Only students who joined SSA as first-time, full-time freshmen in the fall of 2014 were included in the sample used to determine outcomes two years after joining SSA.
2. The STEM program completion status of students who joined SSA in the fall of 2014 as first-time, full-time freshmen was assessed two years after their initial entry into the program. We compared outcomes of SSA participants to similar non-participants who joined a community college as a first-time, full-time freshmen during the fall of 2014.

Analyses included 568 students from 9 institutions who joined SSA as first-time, full-time freshmen in the fall of 2014, and 331 students from 13 institutions who joined SSA as first-time, full-time freshmen in the fall of 2015. The comparison sample included all 16,389 students who were first-time, full-time freshmen at the same institutions during the fall of 2014 and 2015 that did not participate in SSA.

A subset of analyses were conducted by the type of intervention support received by the participatns (i.e., extra support, financial aid, counseling support). These analyses were limited to participants who were identified by sites as having received those specific types of support.

Description of modeling procedures

Mixed-effects logistic regression models were developed to assess the impact of the intervention on the likelihood of achieving a positive educational outcome (graduation/completion, retained, transferred). Mixed-effects logistic regression contains both fixed effects and random effects. The following equation represents the general modeling procedure:

$$Y_{ij} = \beta_0 + \beta_1(Participant_{ij}) + \beta_2(\text{Asian}_{ij}) + \beta_3(Black_{ij}) + \beta_5(Hispanic_{ij}) + \beta_6(White_{ij}) + \beta_7(Male_{ij}) + \beta_8(STEM\_at\_time\_of\_admin_{ij}) + \beta_9(College\_math\_ready_{ij}) + u_{0j} + e_{ij}$$

For $i = 1, \ldots, n_j$ students, and $j = 1, \ldots, 13$ sites.

Random effects were included to account for site and individual student effects by adding a random error term for each site (u_i), and individual observations (e_{ij}). β_0 represents the intercept. The coefficients β_1 through β_9 represent the fixed effects of a given covariate on the outcome (Y_{ij}).

For this study, the coefficient of greatest interest was β_1, which represents the estimated impact of program participation on students' performance on the outcome of interest. Outcomes of interest included any positive educational outcome (i.e., graduation, retention, transfer) one and two years after joining SSA, and STEM graduation status two years after joining SSA.

Outcomes (i.e., values for Y_{ij}) were binary, and multi-level logistic regression analyses were conducted.

DATA DICTIONARY:
STEM Starter Academy Activity

LIST OF DATA ELEMENTS

STM001 College ID

An institutional identification code, as assigned by the DHE

STM002 Year (Calendar Year)

The calendar year in which the activity was offered

STM003 Term

The academic term in which the activity was offered

STM004 Student's Social Security Number

The student's social security number

STM005 Student ID

Identification code assigned to the student by the institution

STM006 STEM Starter Academy Aid

Indicates whether or not the student received direct STEM Starter Academy support

STM007 Extra Support

Indicates whether or not the student received SSA-related extra support

STM008 STEM Pathway or STEM Career Counseling

Indicates whether or not the student received SSA-related targeted STEM pathway and/or STEM career counseling

STM009 Previously Secondary Participant

Indicates whether or not the student was previously reported as a secondary STEM Starter Academy participant

STM010 Developmental Math Intervention Participant

Indicates whether or not the student participated in a STEM Starter Academy-sponsored developmental math intervention (e.g., developmental math course, non-credit workshop) during the current reporting period (summer 2016).

STM011 Developmental Math Completer

Indicates whether or not the student participated in a STEM Starter Academy-sponsored developmental math intervention (e.g., developmental math course, non-credit workshop) during the current reporting period (summer 2016) and fulfilled all developmental math requirements for your institution by the end of the current reporting period (summer 2016).

STM001 College ID

An institutional identification code assigned by the Data Dictionary Appendix A: Institution Codes

Data Type: Numeric **Length** Minimum 3 Maximum 3 **Format Example** 000

Code Descriptions

See **Data Dictionary Appendix A: Institution Codes**

Definition

Code used to identify each college or university in the Commonwealth of Massachusetts

---

Instructions

Business Rules	Dependency
Mandatory entry	Must match College's ID as specified in Data Dictionary Appendix A – Institution codes. Every record submitted must be the correct college ID and be the same college ID throughout the entire file.

STM002 Year (Calendar)

The calendar year in which the student participated in any primary STEM Starter Academy activity/event

Data Type: Numeric **Length** Minimum 4 Maximum 4 **Format Example** YYYY

Code Descriptions

Definition

Instructions

Business Rules	Dependency
Mandatory entry	Each record must be the correct year as chosen when the file is submitted, not be a year previously submitted, and each record must have this same year.

STM003 Term

The term in which the events took place

Data Type: Numeric **Length** Minimum 1 Maximum 1 **Format Example** 0

---

1 Fall
2 Winter
3 Spring
4 Summer

Definition

Select **"Fall"** for STEM Starter Academy activities/events from September through the end of the Fall term.

Select **"Winter"** for STEM Starter Academy activities/events that occur during winter term (or intersession).

Select **"Spring"** for STEM Starter Academy activities/events that occur during the spring term.

Select **"Summer"** for STEM Starter Academy activities/events that occur during the summer. These events/activities typically have a start date of May or June and end in July or August (for a 12-week course). Summer activities may cross over summer sessions.

Instructions

Business Rules	Dependency
Mandatory entry	Must be one of the above values. Each record must be the correct term as chosen when the file is submitted, not be a term/year combination previously submitted, and each record must have this same term.

STM004 Student's Social Security Number

The student's social security number

Data Type: Numeric (Must include leading zeros) **Length** Minimum 9 Maximum 9 **Format Example** 000000000

Code Descriptions

Definition

Unique identification number assigned by the Federal government to each citizen and permanent resident of the United States

Instructions

Business Rules	Dependency
Mandatory entry If the student does not have a Social Security number, enter 000000000. **DO NOT** enter an identification code assigned by the institution for this item. Institutionally assigned identifiers should only be reported in the Student ID data element.	First three digits must be between 001 and 899 (excluding 666), middle two digits must be between 01 and 99, and last four digits must be 0001 and 9999. .

STM005 Student ID

Identification code assigned to the student by the institution

Data Type: Alphanumeric **Length** Minimum 1 Maximum 15 **Format Example** 000000000000000

Code Descriptions

Definition

Unique code used by the institution to identify students. Institutions may either use social security numbers for this purpose or an institutionally assigned identifier. Although this practice is allowed, it is not recommended.

Instructions

Business Rules	Dependency
Mandatory entry	Must be unique for each student submitted. Must be > 0 digits and <= 15 digits.

STM006 STEM Starter Academy Aid

Indicates whether or not the student received direct STEM Starter Academy support during the current reporting period (summer 2016).

Data Type: Alphanumeric **Length** Minimum 1 Maximum 1 **Format Example** N

Code Descriptions

Y Yes
N No

Definition

Did the student receive direct (STEM Starter Academy grant subsidized) financial support (e.g., grant, stipend, tuition or fee waiver, etc.) during the current reporting period (summer 2016)?

Instructions

Business Rules	Dependency
Mandatory	Must be one of the values above

STM007 Extra Support

Indicates whether or not the student received SSA-related extra support during the current reporting period (summer 2016).

Data Type: Alphanumeric **Length** Minimum 1 Maximum 1 **Format Example** N

Code Descriptions

Y Yes
N No

Definition

Did the student receive SSA-related extra or targeted supports (e.g., academic tutoring, peer mentoring, etc.) during the current reporting period (summer 2016)?

Note: To be SSA-related, the extra support should either be:

a) Funded at least in part by the SSA grant, or
b) Received by students as part of their participation in an SSA program or activity (regardless of whether the support itself was SSA-funded).

Instructions

Business Rules	Dependency
Mandatory	Must be one of the values above

STM008 STEM Pathway and/or STEM Career Counseling

Indicates whether or not the student received SSA-related targeted STEM pathway and/or STEM career counseling during the current reporting period (summer 2016).

Data Type: Alphanumeric **Length** Minimum 1 Maximum 1 **Format Example** N

Code Descriptions

Y Yes
N No

Definition

Did the student receive SSA-related targeted STEM pathway and/or STEM career counseling during the current reporting period (summer 2016)?

Note: To be SSA-related, this support should either be:

a) Funded at least in part by the SSA grant, or
b) Received by students as part of their participation in an SSA program or activity (regardless of whether the support itself was SSA-funded).

Instructions

Business Rules	Dependency
Mandatory	Must be one of the values above

STM009 Previously Secondary Participant

Indicates whether or not the student was previously included in the count of *secondary* STEM Starter Academy participants reported by your college (in spring, summer, or fall of 2014; spring, summer, or fall of 2015; or spring 2016), and not previously reported as a *primary* participant.

Data Type: Numeric **Length** Minimum 1 Maximum 1 **Format Example** 1

Code Descriptions

1 Yes
2 No
3 Unknown

Definition

Was the student previously included in the count of secondary STEM Starter Academy participants reported by your college (spring, summer, or fall of 2014; spring, summer, or fall of 2015; or spring 2016), and not previously reported as a primary participant?

Instructions

Business Rules	Dependency
Mandatory	Must be one of the values above

STM010 Developmental Math Intervention Participant

Indicates whether or not the student participated in a STEM Starter Academy-sponsored developmental math intervention (e.g., developmental math course, non-credit workshop) during the current reporting period (summer 2016).

Data Type: Numeric **Length** Minimum 1 Maximum 1 **Format Example** 1

Code Descriptions

Y Yes
N No

Definition

Did the student participate in a STEM Starter Academy-sponsored developmental math intervention (e.g., developmental math course, non-credit workshop) during the current reporting period (summer 2016)?

Instructions

Business Rules	Dependency
Mandatory	Must be one of the values above

STM011 Developmental Math Completer

Indicates whether or not the student participated in a STEM Starter Academy-sponsored developmental math intervention (e.g., developmental math course, non-credit workshop) during the current reporting period (summer 2016) and fulfilled all developmental math requirements for your institution by the end of the current reporting period (summer 2016).

Data Type: Numeric **Length** Minimum 1 Maximum 1 **Format Example** 1

Code Descriptions

Y Yes
N No

Definition

Did the student participate in one or more STEM Starter Academy-sponsored developmental math interventions (e.g., developmental math course, non-credit workshop) during the current reporting period (summer 2016) and fulfill all developmental math requirements for your institution by the end of the current reporting period (summer 2016)?

A student who has fulfilled all developmental math requirements for your institution is eligible to participate in degree-credit-bearing math courses.

Instructions

Business Rules	Dependency
Mandatory	Must be one of the values above

College Level Data	
Name of your Community College:	

Secondary STEM Starter Academy Activities/Events and Participants:	
Secondary events/activities target potential students who are not currently enrolled at a community college.	
How many TOTAL secondary STEM Starter Academy grant supported events/activities* were held [e.g., recruiting at local high schools or community centers, organized campus programs or recruiting visits] from the end of spring term, 2016 to the end of summer term, 2016 ?	
How many TOTAL participants* took part in secondary STEM Starter Academy events/activities from the end of spring term, 2016 to the end of summer term, 2016?	

* Activities such as emails or paper mailings should be counted as "events/activities" but the recipients should not be counted under "participants."

Interview Protocol for SSA Coordinators and/or Administrators – Spring 2016 (30 minutes)

General Information

Interviewee: **Position:**

Community College: **Date/Time:**

Phone Number:

Introduction [5 minutes]

- Thank you for taking the time to speak with me today. The purpose of this interview is to learn more about what you see as the most promising practices emerging from your institution's SSA programming and activities. I'll also ask you about challenges you have faced and facilitators of successful program implementation.
- Just to confirm: we're scheduled from ____ to ____ today – does that still work for you?
- As with all of our interviews so far, we will be sharing the findings from this interview with DHE and possibly other higher education institutions, in addition to including the findings in our reports. Since there are a limited number of SSA sites, we will be unable to report information about your program in a completely confidential manner. However, in the event that you would prefer for a particular response to remain confidential, please let me know, and I will honor your preference for confidentiality.
- (Ask for permission to use recorder before starting the recorder and after.)

INTERVIEW QUESTIONS

Promising Practices [15 minutes]

1. We're now in Year 3 of SSA implementation. When you look back on the SSA implementation at your institution so far, and reflecting on the recruitment, readiness, retention, and completion goals of the SSA model, what do you see as the main promising practices that are emerging as particular strengths at your site?

2. What kind of data have you or will you be collecting that you think will help to demonstrate these strengths? (This might include data that you are submitting to DHE or UMDI as part of the evaluation.)

3. What lessons have you learned developing these practices that you could share with other sites interested in implementing these kinds of strategies?

    a. Are there any particular factors that have facilitated your success?

Challenges [5 minutes]

4. What challenges are you facing in implementing or coordinating SSA programs and activities in Year 3?
    a. Are these challenges different from those you have faced in the past? How so?
    b. How have you or what are your plans for addressing these challenges?

Reflections on DHE facilitation [5 minutes]

5. David and Allison are interested in getting your feedback about DHE's facilitation of this grant. We will report answers to this question only in the aggregate. How do you feel about DHE's support and facilitation of the SSA initiative so far?

    a. Are there ways you would like to see support or facilitation from DHE happen differently? How so?
    b. Are there ways that DHE supports and facilitates the initiative that you think are particularly effective and would like to see continue?
    c. From your institution's perspective, has DHE been a supporter and collaborator in this project or primarily a manager of the initiative?

6. Is there anything else you would like to add about the SSA implementation in general or about this evaluation process?

Thank you for taking the time to talk with me today.

Reflections on SSA Implementation in Year 3

The findings here are based on brief (30 minute) phone interviews conducted with SSA administrators at 14 SSA sites in Spring 2016.[1] Unlike interviews conducted in previous years that aimed to capture both descriptive detail about site-specific implementation and administrators' reflections on program implementation, the interviews conducted in the spring of 2016 focused on capturing site administrators' reflections on their institution's most promising SSA practices, as well as their feedback on implementation challenges and the facilitation of the initiative by DHE. The interview protocol included six questions, and is included in Appendix I for reference. The interviews were intended to provide a snapshot of administrators' reflections on their SSA program implementations at the midpoint of Year 3. Findings from these interviews, summarized below, are not intended to be cumulative or comprehensive, but rather summarize administrator reflections at a particular point in time.

Data from these Spring 2016 interviews are part of limited qualitative data collected from SSA sites during Year 3 and thus provide an important complement to the Year 3 quantitative data and findings that will be presented in the Year 3 Evaluation Report.

Promising Practices

Site administrators were asked about the practices implemented at their institutions through SSA that they felt were showing the most promise in terms of contributing to the achievement of the initiative's goals. Administrators were not specifically asked about programmatic practices in each area of the SSA model; however, their responses have been grouped here under the four model areas of recruitment, readiness, retention, and completion. Despite this grouping, any single practice (e.g., academic counseling) can be important during multiple stages of students' progression through community college. Administrators' answers are summarized below, and a more comprehensive analysis of promising practices discussed during these interviews is provided in Appendix J1.

One commonly mentioned practice spanned multiple model areas: Administrators at nine sites emphasized the promise of coordination and communication practices that crossed boundaries within institutions. Sometimes discussed as "getting outside of silos," these practices included working across campus to communicate about STEM initiatives, collaborating and leveraging resources across offices and grants, and creating or integrating a STEM focus into admissions, advising, and career services. These practices were mentioned by respondents in multiple sections of the interview as promising practices, as lessons learned, and sometimes (when there was a lack of communication) as challenges. Administrators felt that SSA had fueled many of these practices, which they felt had resulted in more efficient outreach and recruiting, and better integration of services provided to students.

Recruitment: Building relationships with high schools

Various strategies for building relationships with high schools were noted by site administrators at six sites for their potential or actual success at boosting recruitment for SSA or other STEM programs. Practices included offering stipends to recruiters embedded in high schools, hosting events that benefit or engage high school faculty (e.g., professional development) or showcase community college STEM programs (e.g., student research symposium), and offering programming for high schoolers (e.g., early college activities, summer activities).

[1] One site did not respond to evaluator's requests to schedule a spring 2016 phone interview.

Readiness: Creating intensive experiences to build skill, relationships, and familiarity

Six campuses emphasized practices that readied students for college, putting them on a path to persistence and completion. Sites that offered intensive experiences during the summer felt that these experiences prepared students to succeed by teaching skills, building connections (both among students and between students and support services), and familiarizing students with college life.

Two sites that offered intensive mathematics preparation through SSA felt that these efforts were leading to success. Bunker Hill administrators said that their model of intensive, tutor-supported developmental mathematics courses combined with coaching around non-academic life issues facilitated higher passing rates.[2] Massasoit administrators reported that participants in their summer bridge program (which focused on self-paced developmental mathematics) were more likely to have attempted a college-level mathematics class than students who expressed interest but had not participated in the summer bridge.

Retention: Providing integrated support systems, peer connections, and academic support

Many sites identified retention strategies that administrators felt were promising or effective. Retention-focused practices named by site administrators fell into three broad, related categories.

1. Creating integrated and articulated supports: Seven sites discussed practices that involved creating supports that are integrated into various dimensions of students' lives (e.g., academic, social, financial) and are also linked physically in some central location, through a central person, or through a system of shared information. Site administrators also emphasized that these supports were most effective when "personalized" and STEM-focused. According to interviewees, students benefit from having "go-to" people or spaces that create a "holistic" support system that is "continuous" from entry to exit. These spaces and systems foster connections among students as well as between students and support resources.
2. Building connections among students: Eight sites described practices that involved promoting peer connections through intensive cohort experiences (e.g., bridge programs that require concentrated time and effort), peer mentoring/tutoring or other peer leadership, or ongoing events such as clubs or social activities.
3. Providing academic support: Five sites embedded academic support into classrooms (e.g., using supplemental instructors) and three expanded STEM-focused tutoring with SSA resources. Some administrators reported that increasing these types of academic supports resulted in reductions in withdrawals from these courses.

Completion: Offering proactive advising and coaching, clarified pathways, experiential learning and mentorship

A longer-term goal of most readiness and retention strategies is to help students complete their programs of study. Beyond readiness and retention strategies, eight sites described promising practices that specifically aimed to ease students' pathways to and beyond completing their program of study. Strategies included proactively advising students to think about their completion goals (e.g., during academic advising or other non-career-specific "coaching"), clarifying or aligning academic pathways to those goals (e.g., developing transfer articulations with 4-year institutions or creating STEM-specific

[2] Data from the Year 2 Evaluation Report show that in Summer 2015, 93% of Bunker Hill primary participants who were enrolled in their SSA-sponsored accelerated developmental mathematics "clusters" fulfilled all developmental mathematics requirements by the end of that term, and 79% of those students went on to enroll in a college-credit-level mathematics course.

degree pathways), and providing experiences that help students develop professional "soft skills" (e.g., through internships, leadership opportunities, or mentorship).

Facilitators of Success

When asked if any particular factors facilitated success with SSA, the most common responses were related to relationships (five sites) and people (eight sites). Relationships included those between recruiters and prospective participants, between faculty and students, between the college and high school partners or the community, and between departments or divisions within an institution. Administrators commented that the additional staffing made possible by SSA allowed them to fill gaps in support services for students. Most felt that the commitment and dedication of the faculty and staff who worked with students through SSA were major contributors to the success of their programs.

Challenges

While beginning to see the successes of their efforts with SSA in Year 3, sites also continued to face challenges in implementation. Some of these challenges have been ongoing (e.g., recruiting) and others are more specific to this particular stage in the initiative's trajectory (e.g., difficulties balancing services for multiple cohorts of students at once). Most of the challenges mentioned by site administrators fell under the following five broad themes, summarized below.

Data collection and reporting

- Five sites reported feeling that they had insufficient capacity to collect, report, and analyze SSA data. Administrators said that collecting and reporting data to UMDI and DHE was time-consuming and they felt they did not have enough staff capacity to reasonably manage these demands. Some administrators indicated that they lacked systems that would allow internal tracking and monitoring of SSA participants without extensive work or greater expertise.
- Administrators at two sites indicated that they felt that they did not yet have enough data to draw definitive conclusions, but were nevertheless in a position of needing to make programmatic decisions. According to interviewees, specific challenges included trying to identify meaningful trends over a short period of implementation and understanding the impact of recruitment efforts without data on high school students.
- Interviewees at two sites indicated that they felt that existing SSA data do not reflect their institutional strengths. For example, administrators noted that private school transfers have a long delay before they can be accurately reported, and primary and secondary participant distinctions do not reflect the ways SSA participation happens at some sites.

Timing and timelines

- Four sites reported that the uncertainty of funding from year to year created planning challenges and made it difficult to attract qualified personnel. Despite feeling the need for additional staff to manage the SSA workload, administrators were both reluctant to hire people into a position they felt they could not sustain and challenged to find qualified people willing to take on a position with such uncertainty.
- Two sites commented that the timeline was short for planning and using the additional funding for engagement with high schools in Summer 2016. According to interviewees, the introduction of the new element felt "sudden" and deadlines for submission and implementation were challenging due to both academic timelines around breaks and standardized testing, and the quick turnaround requested by DHE.

- Sites whose SSA activities concentrate on summer programming reported struggling with a misalignment between the close of the fiscal year and the academic year. Summer program enrollment often is not known until mid to late June, and funding typically cannot be carried over into the fall. According to administrators, this creates a need to hastily spend money over the summer when they would rather save the money to serve students in the fall.

Recruiting

- Three sites indicated that it was difficult to build relationships with high schools that would result in successful recruiting of high school students into SSA programs. According to interviewees, some high school administrators do not understand the academic and financial value of community college STEM programs. Thus, it was often a struggle to get program materials and ideas in front of potential participants and their parents.
- Administrators at two sites indicated that they faced challenges in recruiting students to attend one-time SSA workshops and events. According to one interviewee, students "don't always realize the benefit to coming" and are busy with work and family.

Resource limitations – staffing

- Interviewees indicated that personnel resources felt stretched thin as the initiative progresses to engage students from entry to exit. Administrators reported being challenged to divide their time between supporting current participants, engaging with new participants, and recruiting prospective participants.
- According to administrators, promising practices for student engagement and retention are labor intensive; however sustaining the positions that support these practices will be a challenge given budget limitations and competing institutional priorities.

Midcourse changes

- Though administrators at four sites commented that they appreciated the value of establishing a common program model and metrics as was done late in Year 2, they reported finding it challenging to pivot their programs toward these metrics "midstream" after more than a year of implementation. According to interviewees, they appreciated the early flexibility and sense of "carte blanche" in terms of programming strategy, but that made the process of coalescing on a more common set of metrics particularly challenging. Administrators said that starting with common metrics then being given flexibility in how to meet those metrics (as DHE is doing now, according to interviewees) might have been an easier progression.
- At four sites, administrators reported feeling that their SSA programs were less established at the midpoint of Year 3 than they would have expected. According to interviewees, challenges that led to mid-implementation reconfigurations of their plans interfered with programmatic "momentum." These challenges included budget issues such as 9c cuts in Year 2 or delayed funding disbursements, programmatic changes needed to better align with the emerging model (as noted above), staff turnover, and a sense of "still figuring out" what works. One administrator commented, "It feels like we're only just having our second full year." Another said, "Year 3 feels like Year 1."

Lessons Learned

By midway through Year 3 of SSA implementation, site administrators felt they had learned many lessons worth sharing with each other. Many of these lessons were captured in the promising practices section above—notably the importance and benefits of campus communication and coordination. This section includes some of the lessons that were not summarized there.

Participating populations: Homogeneity and heterogeneity

Two sites discussed how including students from different backgrounds and at different stages of life can affect a program. The SSA program at Berkshire focused on recent high school graduates, because administrators felt that those students had more time and flexibility in their schedules to meet the intensive expectations of SSA (e.g., a full course load, mandatory extracurricular activities). The relative homogeneity of the group, according to administrators, facilitated the forming of peer connections and made managing the logistics of the program easier. At Mount Wachusett, administrators felt that a mix of ages and backgrounds (recent high school graduates, adult returners, recent immigrants, etc.) contributed to successful outcomes as a diverse group of students came together around their "love of STEM."

Program organization and timing: Adjusting to meet participant needs and realities

Four sites commented on lessons learned regarding the structure and organization of their SSA programs. Three sites (Bristol, STCC, and Northern Essex) said they had made adjustments to their program schedules based on participant feedback. Bristol's SSA administrator checked in with drop-in tutors early in the semester about attendance at tutoring sessions and then adjusted the schedule accordingly to increase participation. STCC's SSA administrators changed their summer bridge program from a full-day to a half-day schedule based on participant feedback and felt that helped with their recruiting. Northern Essex found that offering their calculus boot camps during intersession and breaks made it easier for students to attend.

Berkshire adjusted their fall support program requirements to make them more organized and easier to track, and found that these changes facilitated participation and eased program administration. The college also found that providing "second chances" in subsequent semesters to students who had not fulfilled the requirements to earn an SSA scholarship created a way to reengage and retain students. STCC tried a more focused recruitment strategy and application process that targeted STEM-interested students and found that they recruited students who seemed to be a better fit for their program than in previous recruitment efforts.

Mount Wachusett found that their students who were doing well in STEM pathways were often transferring to 4-year institutions without graduating from the community college. Student feedback indicated that MWCC's STEM pathways—as concentrations under liberal arts—were heavy in credits and often included credits that would not transfer. Wanting their students to complete credentials before transferring, MWCC administrators have made changes to STEM degree pathways that reduce the number of credits required to graduate from STEM programs.

Increasing participation: Welcoming spaces, linked events, and positive experiences

Three sites recounted lessons learned about increasing participation in SSA events or activities on campus. Focusing on its STEM center, Middlesex increased traffic by making the space more welcoming to students, both in its physical configuration and in the ways staff interact with students. North Shore, to increase attendance at their larger STEM-focused events, created smaller-scale events leading up to a

larger event to capture students' interest. Bunker Hill has found that positive student experiences in their accelerated developmental mathematics "clusters" helped to sell the courses. Because students have been willing to pay to take these courses during the academic year, these "clusters" have now been sustainably institutionalized and are receiving steady enrollments.

Providing support: Available, personalized, and attuned to non-academic needs

Regarding student persistence, administrators at four sites reported learning lessons about the importance of personalized support that is available where students are and that addresses non-academic as well as academic needs. Two sites (Bunker Hill and North Shore) embedded tutors in classrooms and provided support outside class hours; they found that this model led to increased persistence and passing rates. Holyoke emphasized the importance of one-on-one supports, commenting that knowing students helps to fully support them. The college also found that having readily available touch points—so students know to whom they can turn in any situation—was key to persistence. Similarly, Bunker Hill administrators found that having faculty and staff attuned to students' non-academic needs (e.g., discussing financial needs, providing information about free meals) was critical for student success.

Retention strategies: Engagement, peer leadership, and financial support

Three sites shared lessons they learned about strategies to support student retention. Cape Cod found that the most effective retention strategies—personal engagement with students through regular contact, advising, and events—were also the most labor intensive and required "around the clock" dedication from staff. Cape Cod and Massasoit found that creating opportunities for student leadership benefitted not only the student leaders, but also the peers they mentored. Northern Essex offered two kinds of financial support to their students—scholarships and a textbook lending library—that they found helped students cover financial "gaps" and persist in their studies.

Data Collection Systems and Preliminary Outcomes

When asked about what kind of data they had collected or planned to collect to demonstrate the strengths of their programs, site administrators commonly named retention rates, GPA, enrollment, transfer, and passing rates. A couple sites had tracking systems where students signed in when they received services (e.g., tutoring). A few sites used an early warning system that created continuity by sharing alerts and information about students between multiple service providers (e.g., faculty and advisors). A few sites used SSA funds to support a person who performed data analysis or linked SSA operations with their institution's IR office. A couple sites constructed comparison groups against which they could evaluate their SSA participants (e.g., individuals who expressed interest in a summer bridge program, did not attend, but enrolled in the college).

Administrators from four sites discussed preliminary outcomes. These included a reduction in withdrawals from a course with embedded tutors, significantly higher rates of attempting a college-level mathematics course among SSA participants, increased retention of summer bridge participants compared with entering peers, and high passing rates of students in SSA-supported accelerated developmental mathematics courses.

Feedback for DHE

Positive feedback

Across sites, SSA administrators expressed appreciation for the organization and responsiveness of DHE during Year 3. They also appreciated the level of flexibility they felt they had been given to experiment and tailor the SSA initiative to their institution's and population's needs. In particular, positive feedback about DHE's facilitation of the initiative included the following.

- **Effectively organized and run.** Sites felt that DHE has been effective in keeping the initiative organized and institutions "on track." Administrators felt that meetings were well run, useful, and a good balance between phone and in-person. Working groups were seen as useful for facilitating collaboration (e.g., by providing a smaller forum) as well as for pursuing topics of interest (e.g., sustainability, intervention "dosage").
- **Responsive, open, accessible.** Site administrators appreciated DHE personnel's responsiveness, approachability, and maintenance of open communication both among sites and between sites and DHE.
- **Flexibility and freedom.** Site administrators appreciated DHE's flexibility in allowing individual campuses to adapt SSA to address their particular needs. Interviewees reported they valued the ability to regionalize program implementation and to experiment with various strategies and practices. Administrators also commented that budgetary flexibility—which allowed sites to quickly pivot to take advantage of opportunities as they arose—was a positive distinction between SSA and other grant-funded initiatives.
- **Clarified guidance.** Several site administrators said it was helpful to have clear metrics to guide their SSA programming strategy, despite the challenges in developing those metrics. They also felt that DHE continues to provide welcome flexibility to sites in terms of the strategies sites might use to achieve those metrics.
- **State-level communication and collaboration.** Some site administrators felt that statewide collaboration had raised the profile of STEM programs at their institutions by tying their SSA programs to a larger statewide impact that garnered the attention of campus administration. Some administrators appreciated DHE's efforts to communicate and collaborate with stakeholders statewide regarding SSA and STEM programs in general.

Constructive feedback

The challenges section (above) presents some of the constructive feedback sites provided for DHE. Additional feedback specifically related to facilitation of the initiative is presented below.

- **More opportunities to learn from each other.** Sites are glad to have the all-campus meetings and glad to have them be twice per year rather than once per year. Administrators were interested in more opportunities to learn from one another, potentially through campus visits or through facilitated conversations about what is working.
- **Additional DHE advocacy to address recruitment challenges and institutional support.** Administrators described a few areas where additional DHE advocacy might help them address challenges they faced on their campuses.
    - Interviewees from sites that struggled with high school recruitment thought that additional state-level promotion of SSA by DHE might ease recruitment challenges. These administrators also felt that their college's collaboration with K–12 institutions

might be facilitated by DHE engagement with the Department of Elementary and Secondary Education (ESE).

- Other interviewees said they would appreciate more DHE leadership around recruiting non-traditional students, given the declining pool of potential 18- to 22-year-old students in the state (K–12 enrollment is on a slightly declining trajectory).
- Administrators who sought institutional support for their SSA programs thought that DHE might facilitate further communication about the importance and impact of SSA with high-level administrators.
- According to interviewees, managing and navigating multiple related initiatives coming out of DHE has been challenging. They appreciated the investment of resources that SSA provided and said that some additional coordination or efforts to streamline similar initiatives by DHE would be welcome.

STEM Starter Academy Year 3 – Promising Practices – Examples and Lessons Learned

The following is an expanded excerpt of the findings from brief (30 minute) phone interviews conducted with SSA administrators at 14 SSA sites in Spring 2016. Unlike interviews conducted in previous years that aimed to capture both descriptive detail about site-specific implementation and administrators' reflections on program implementation, the interviews conducted in the spring of 2016 focused on capturing site administrators' reflections on their institution's most promising SSA practices, as well as their feedback on implementation challenges and the facilitation of the initiative by DHE. The interviews were intended to provide a snapshot of administrators' reflections on their SSA program implementations at the midpoint of Year 3.

This document focuses on interviewees' responses regarding the practices implemented at their institutions through SSA that they felt were showing the most promise in terms of the initiative's goals. The major findings from their answers are summarized below, followed by brief illustrative examples. These findings are not intended to be cumulative or comprehensive, but rather summarize administrator reflections at this particular point in time.

Administrators were not specifically asked about programmatic practices in each area of the SSA model; however, their responses have been grouped here under the four model areas of recruitment, readiness, retention, and completion. Despite this grouping, any single practice (e.g., academic counseling) can be important during multiple stages of students' progression through community college. The first section summarizes practices mentioned by several sites that span these model areas.

Coordination and communication on campus

Administrators at nine sites emphasized the promise of coordination and communication practices that crossed boundaries within institutions. Sometimes discussed as "getting outside of silos," these practices included working across campus to communicate about STEM initiatives, to collaborate and leverage resources across offices and grants, and to create or integrate a STEM focus into admissions, advising, and career services. These practices were discussed in multiple sections of the interview as promising practices, as lessons learned, and sometimes (when there was a lack of communication) as challenges. Administrators felt that SSA had fueled many of these practices, which they felt had resulted in more efficient outreach and recruiting, and better integration of services provided to students.

Examples and lessons learned

- SSA administrators at Bristol worked across departments and with other grants to coordinate and leverage resources to support industry engagement. They created a "business engagement task force" that includes Academic Affairs, the college foundation, the communications office, workforce development, faculty, and personnel funded through other grants to coordinate outreach to employers. They also leveraged resources from a variety of sources to create and recruit for a series of industry panel discussions.
- Recruitment to SSA programs at Greenfield improved through a process of informing and collaborating broadly with admissions, transfer, academic advising, and marketing personnel, as well as department chairs (including chairs of non-STEM departments). According to

administrators, these collaborations elevated the knowledge that students and advisors had about GCC's STEM programs and led to greater student interest and engagement.

- At MassBay, staff funded through SSA were able to fill gaps in support services across offices while adding a STEM focus. In addition to working directly with students, they collaborated with admissions, advising, marketing, and career services personnel, and also provided administrative support for STEM faculty.
- Middlesex supports their STEM center ("Pathways Center") with SSA funding. This center houses STEM-focused services including tutoring, advising, and career counseling, and also maintains relationships with those campus offices. Students are referred to relevant offices, and the Pathways Center space is used to host tutoring sessions that are coordinated by the tutoring and academic support center.
- Quinsigamond used SSA funds to support STEM-focused part-time staffing within the existing admissions, advising, and career and transfer areas. SSA funds were also used to support an expansion of the tutoring center to meet the increasing needs of students in STEM courses.
- At Northern Essex, strong relationships between SSA administrators and faculty led to successful recruiting for SSA events. Faculty sometimes brought their classes, and students used information from events to complete course assignments.

Recruitment: Building relationships with high schools

Various strategies for building relationships with high schools were noted by site administrators at six sites for their potential or actual success at boosting recruitment for SSA or STEM programs. Practices included offering stipends to recruiters embedded in high schools, hosting events that benefit or engage high school faculty (e.g., professional development) or showcase community college STEM programs (e.g., student research symposium), and offering programming for high schoolers (e.g., early college activities, summer activities).

Examples and lessons learned

- Berkshire has had recruiting success by offering stipends to high school staff (often teachers) who act as BCC liaisons to recruit for SSA. Because they know both the SSA program and the students well, liaisons can often find students who would be a good fit and reach out to them directly.
- Cape Cod enriched their relationships with local high schools and districts through their work to develop a Regional STEM Network. Through that network, the SSA director facilitates professional development workshops on science curriculum development for high school teachers. CCCC also established relationships with employers through the network. Both of these pieces build connection and interest with high school faculty who see the community college as serving their interests and having something valuable to offer their students.
- Students who are part of Massasoit's SSA-funded research internship program presented posters at a research symposium, which staff and administrators from area high schools had been invited to. SSA administrators reported receiving positive feedback from attendees, which they anticipate will contribute to increasing awareness among K–12 educators of what a community college has to offer their students in STEM fields.

- Holyoke administrators reported having a strong relationship with the city's public schools in part because of summer programs on college readiness they offer in local high schools.
- In communicating with high school students, Mount Wachusett interviewees described success focusing on two key messages: the caliber of courses at the college is on par with the first two years of a four-year institution, and the college supports students' individual journeys, whether that goal is to transfer or graduate and join the workforce.

Readiness: Creating intensive experiences to build skill, relationships, and familiarity

Six campuses emphasized practices that readied students for college, putting them on a path to persistence and completion. Sites that offered intensive experiences during the summer felt that these experiences prepared students to succeed by teaching skills, building connections (both among students and between students and support services), and familiarizing students with college life. Sites that offered intensive mathematics preparation through SSA felt that these efforts were leading to higher passing rates or greater engagement with higher-level mathematics.

Examples and lessons learned

- Berkshire created a first year experience program for STEM students that combines a three-week summer bridge program (encompassing STEM exploration, mathematics remediation, and college readiness) with a "fall support program" that helps students remain connected to one another and apply what they learned over the summer (tied to an opportunity to earn a scholarship for the spring). Interviewees report that the program has been well received by college administrators who are considering replicating the model outside of STEM.
- Students in Quinsigamond's SSA summer bridge program participated in a mathematics boot camp and a mix of STEM-field exploration and college readiness workshops. They were also introduced to a particular STEM advisor who became their identified touch point as they moved into the fall (in addition to remaining in contact with the SSA coordinator). SSA administrators reported that 100% of summer bridge participants retained into the fall and 79% into the spring.
- Administrators at Mount Wachusett focused on creating a summer experience that would prepare students for the "pace and intensity" of college life. They reported that students emerged from the six-and-a-half-week (M–F, 9–3) experience with skills, confidence, and connections to a cohort of peers to which they continued to turn as they merged into the fall semester. It is a "true start," according to administrators, that keeps students from being overwhelmed once the fall semester begins.
- Administrators at Springfield Technical reported that students built connections with one another over their five-and-a-half-week summer intensive and that the program's curriculum explicitly encouraged these affiliations. Interviewees cited positive feedback from students who said they valued these connections to peers with similar goals. Administrators reported intending to create a sense of belonging that would help students persist as they transition into the regular academic term. This sense of belonging fostered by the cohort model, according to interviewees, allows the program to attract and retain a more diverse group of students than would otherwise be the case.

- Students in Bunker Hill's summer mathematics "clusters" were in class together four days a week, three hours per day for eight weeks. They were then invited back to campus to take a three-day science workshop together right before the fall term begins. According to administrators, this model of intensive, tutor-supported developmental mathematics courses combined with coaching around non-academic life issues facilitated high passing rates (e.g., in summer 2015, 93% of enrolled participants completed).
- Analyzing data from a comparison group, Massasoit administrators reported that participants in their summer bridge program (which focused on developmental self-paced mathematics) were more likely to have attempted a college-level mathematics class than students who had expressed interest, but not participated in the summer bridge.

Retention: Providing integrated support systems, peer connections, and academic support

Many sites identified retention strategies that administrators felt were promising or effective. Retention-focused practices named by site administrators fell into three broad, and related, categories.

1. **Create integrated and articulated supports:** These practices involved creating supports that are integrated into various dimensions of students' lives (e.g., academic, social, financial) and also linked physically in some central location, through a central person, or through a system of shared information. Site administrators also emphasized that these supports were most effective when "personalized" and STEM-focused. According to interviewees, students benefit from "go-to" people or spaces that create a "holistic" support system that is "continuous" from entry to exit. These spaces and systems foster connections among students as well as between students and support resources.

   Examples and lessons learned

   - Berkshire has boosted retention through a fall support program for students who completed their SSA summer bridge program. Program requirements include social and academic support (e.g., cohort lunches, mandatory check-ins with their professors), STEM exploration, and academic skill building. Students who successfully meet all requirements, including a minimum GPA, are awarded a scholarship for the spring. The SSA coordinator serves as the central contact person for participants and has found that specific, clear, written documents help students and administrators manage and track progress.
   - Bunker Hill has helped students complete their developmental mathematics requirements and transition into STEM majors by combining tutor-supported accelerated mathematics courses, workshops to help students prepare for STEM coursework, and supportive advising and counseling to help students address life issues that interfere with their academic pursuits. Both faculty and the coordinator built strong relationships with students and often helped students navigate housing, childcare, and financial issues. A counselor visited classes during the summer to talk about free services for students facing financial hardship, including such topics as free food on campus, applying for food stamps, and free tax prep services.
   - SSA administrators at Cape Cod described their approach to student support as a "case study" approach. Students were proactively advised—that is, they were regularly contacted

by the SSA coordinator, STEM advisor, or STEM career counselor and advising was often a requirement of SSA scholarships or other financial support—and support staff shared notes on students' status through an electronic early warning and tracking system. Support services for STEM students were also physically centralized. In one location, students had access to a hangout or study space, and a place to seek tutoring or advice about classes, schedules, career paths, or life challenges.

- SSA administrators at MassBay described their approach to student support as one of "continuous student engagement." SSA staff contacted all STEM students every week, offered STEM-themed programming once or twice a month, and established themselves as the STEM contacts for students and others at the college. SSA staff regularly worked with career services, academic support, admissions, and advising personnel, and even offered administrative support to STEM faculty.
- Middlesex coordinated its support for STEM students through a STEM center that was partly supported through SSA. At the Pathways Center, students could join a group study session, receive tutoring, participate in career counseling or advising, talk with a peer mentor, or use available computers. The "holistic" approach taken to supporting students included creating a welcoming environment focused on personalized "customer service." The coordinators and career counselor supported students with targeted one-on-one help with both academic and non-academic needs. According to administrators, conversations with students were ongoing, and encouraged students to look beyond the immediate future and consider their academic trajectory as "a whole process." Advising sessions might include helping a student make an appointment with a tutor, talking to them about transfer options, picking classes or majors, advising about study skills, or connecting them with other resources on campus.
- At North Shore, SSA supported efforts to engage students "on a more personal level." Administrators reported reducing withdrawals in courses that typically had high rates of withdrawal or failure by embedding peer tutors who attended lectures and hosted review sessions outside of class. They gathered STEM-interested students with regular STEM events and a STEM student club. A staff coordinator, STEM advisor (supported in collaboration with TAACCCT4), and SSA-supported peer mentors helped students build personal connections with support providers.
- Quinsigamond used SSA resources to provide STEM-specific staffing across a continuum of student support services, including admissions, advising, and career placement and transfer personnel. Students who participated in QCC's summer bridge program met with a STEM advisor to establish a clearly identified contact person before beginning the fall term. The STEM advisor is explicitly tasked with supporting students in career, academic, and personal success. The SSA coordinator also remained in regular contact with students and periodically held "reunions" to check in and facilitate social connection.

2. **Build connections among students:** These practices involved promoting peer connections through intensive cohort experiences (e.g., bridge programs that require concentrated time and effort), peer mentoring/tutoring or other peer leadership, or ongoing events such as clubs or social activities.

Examples and lessons learned

- Students built strong connections through Bunker Hill's intensive, accelerated summer developmental mathematics courses and were also invited to a three-day workshop to prepare for STEM coursework before the beginning of the academic year. During these workshops students reconnected with their peers from the summer program. SSA continued to create opportunities and spaces for students to connect during the academic year, including STEM-specific study spaces, group tutoring, and learning communities.
- Springfield Technical's SSA program placed a strong emphasis on cohort, creating opportunities and actively encouraging students to connect and support one another (as noted above). Peer connections formed during STCC's intensive summer bridge program often carried into the school year. Administrators reported that students' sense of connection and belonging counteracted the social isolation that can sometimes trigger students in STEM fields to abandon their studies.
- Bristol worked to create a sense of community by using peer tutors, both for STEM drop-in tutoring and for course-linked supplemental instruction.
- The STEM advisor at Cape Cod regularly hosted community-building, just-for-fun events for STEM students to help them connect to each other and connect to the campus (e.g., ugly sweater day, pizza days, movies). As noted above, the college created a centralized space where STEM students can gather and get support, promoting peer connections and community building. They also facilitated peer-based tutoring and supplemental instruction.
- Massasoit created a peer leadership program through SSA that has helped to build connections among students. Some students who participated in MCC's research internship program applied to be group leaders who served as mentors and role models for their peers while learning "middle management" skills. These peer leaders helped to run a STEM engagement program for students who completed the summer bridge program or expressed interest in STEM careers. Massasoit administrators noted that building relationships with peer role models was a "powerful practice" in terms of engaging the newer participants.
- The Pathways Center at Middlesex supported opportunities for peer connections through SSA. The center facilitated a peer mentoring program, hosted peer-based tutoring and group study sessions, and provided a physical space where STEM-interested students could congregate and connect.
- Mount Wachusett's intensive summer bridge program created an environment where students built strong connections to a cohort. Administrators reported seeing summer bridge students continuing to do things together in the fall, after official cohort-based activities had ended. Building a cohort with a mix of students from different backgrounds, according to administrators, helped bring different perspectives that motivated students and also solidified the group's connection to a STEM identity.
- As described above, North Shore's combination of peer mentorship, peer tutoring, and STEM club activities helped students build connections with one another that eased their navigation of community college STEM pathways.

3. **Provide academic support:** Several sites embedded academic support into classrooms (e.g., using supplemental instructors) and a few sites expanded STEM-focused tutoring. Some

administrators reported that increasing these resources resulted in reductions in withdrawals from these courses.

Examples and lessons learned

- Bristol, Bunker Hill, Cape Cod, MassBay, and North Shore all embedded tutors into a variety of STEM classrooms. With the exception of MassBay, these embedded tutors were all fellow students (at MassBay, they were professional "learning specialists"). At North Shore, Bristol and Cape Cod, classroom-embedded peer tutors also hosted course-linked study/tutoring sessions.
- Bristol, Greenfield, and Quinsigamond all used SSA funding to expand the availability of STEM tutoring through existing tutoring centers. Greenfield used a "studio" model to offer mathematics tutoring in a collaborative and non-stigmatizing atmosphere. Quinsigamond expanded the availability of STEM tutors in their tutoring center. Bristol provided peer tutoring linked to upper-level STEM courses.

Completion: Offering proactive advising and coaching, clarified pathways, experiential learning, and mentorship

A longer-term goal of most readiness and retention strategies is to help students complete their programs of study. Beyond readiness and retention strategies, eight sites noted promising practices that specifically aimed to ease students' pathways to and beyond completing their program of study. Strategies included proactively advising students to think about their completion goals, clarifying or aligning academic pathways to those goals, and providing experiences that help students develop professional "soft skills."

Examples and lessons learned

- Administrators at Cape Cod, Middlesex, and Quinsigamond all discussed proactively advising students about career and transfer options during general advising sessions, encouraging students to look toward longer-term goals as part of their community college path. These sites, along with MassBay, also used SSA funding to provide STEM-targeted career and transfer advising/support.
- At Cape Cod, Greenfield, and Mount Wachusett, SSA administrators described work their colleges had undertaken to streamline and clarify STEM degree and transfer pathways in order to ease completion and transfer, and to help students and advisors better understand students' options. Holyoke noted that they had a strong relationship with the transfer office at UMass Amherst and other 4-year schools, and they have had extensive conversations to ensure that HCC STEM classes are transferrable.
- Bristol and Cape Cod both hosted STEM industry panels and discussions to build students' knowledge and awareness, and to introduce them to a local network of STEM professionals.
- Massasoit and Middlesex offered career-oriented experiential learning opportunities in the form of paid STEM-field research internships. At Massasoit, these internships were facilitated on campus by adjunct faculty, staff, and peer leaders in a research program built with SSA funding. At Middlesex, students interned off campus, often in research labs at

UMass Lowell, working with graduate students and faculty on specific pieces of ongoing projects.

- MassBay Community College continued to run a well-received industry mentor program, connecting STEM students with STEM professionals who offer academic, career, and life advice.

SSA Student Experience Survey

Name of Community College is interested in hearing from students about their experiences in science, technology, engineering, and mathematics (STEM) professional or degree programs. **The survey will take about 10 minutes to complete.**

Your participation is completely voluntary and your responses will be anonymous. Your choice to participate or not will not impact your grades or your status with the college.

Your responses will be used to help inform administrators at Name of Community College about the climate of its STEM programs as well as to inform state-level administrators about Massachusetts community college STEM programs more generally.

We thank you for taking time out of your busy schedule to complete this survey. If you have any questions about this research project, please feel free to contact us either by e-mail [email] or telephone [phone].

Sincerely,

[Name of contact]

If you DO want to participate, please sign at the bottom of this page, then complete the survey.

If you DO NOT want to participate, please stop now and do not complete the survey.

I have read and understood the above information and agree to participate in this survey.

PARTICIPANT'S SIGNATURE	*PRINTED NAME*	*DATE*

1. Impacts of participation

Please indicate to what extent you agree the following aspects of your student experience were impacted by participation in Name of Community College's STEM-related activities.

My participation in Name of SSA Program or Intervention at Name of Community College *resulted in …*	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Stronger connections with faculty	❍	❍	❍	❍	❍
Stronger connections with other students	❍	❍	❍	❍	❍
Better knowledge of available academic supports resources	❍	❍	❍	❍	❍
Improved performance and/or achievement in courses	❍	❍	❍	❍	❍
Expanded knowledge of transfer process and transfer options	❍	❍	❍	❍	❍
Expanded knowledge of STEM majors	❍	❍	❍	❍	❍
Expanded knowledge of STEM fields and careers	❍	❍	❍	❍	❍
Improved employability in desired career or field	❍	❍	❍	❍	❍
More contacts with industry professionals	❍	❍	❍	❍	❍
Greater knowledge about job openings and employment opportunities	❍	❍	❍	❍	❍

2. STEM self-efficacy

Please indicate to what extent you agree or disagree with the following statements.

After having participated in *Name of SSA Program or Intervention* at Name of Community College …	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
I can better understand the content in a STEM course.	❍	❍	❍	❍	❍
I feel more confident about asking questions in my STEM courses.	❍	❍	❍	❍	❍
I am more confident that I can give a correct answer during a STEM course.	❍	❍	❍	❍	❍
I am more likely to do well on a test in a STEM course.	❍	❍	❍	❍	❍
I am more likely to get an "A" when I am in a STEM course.	❍	❍	❍	❍	❍
I feel more confident that I will be able to use STEM-related knowledge and skills in my future career when needed.	❍	❍	❍	❍	❍
I feel more confident when using STEM knowledge and skills outside of school.	❍	❍	❍	❍	❍
I feel more confident that I can think like a mathematician, scientist, engineer, and/or other STEM professional.	❍	❍	❍	❍	❍

3. Use and helpfulness of supports

Please indicate whether you received the following STEM-related supports. If you did receive the support, please indicate how helpful the support was during your time in Name of Community College's STEM program.

Did you receive the following STEM-related supports?				How helpful was this support during your time at Name of Community College?			
	Yes	No	Don't know	Not at all helpful	Somewhat helpful	Very helpful	Not applicable
Advising	❍	❍	❍	❍	❍	❍	❍
Tutoring	❍	❍	❍	❍	❍	❍	❍
Peer mentoring	❍	❍	❍	❍	❍	❍	❍
Math prep program or boot camp	❍	❍	❍	❍	❍	❍	❍
Developmental math course	❍	❍	❍	❍	❍	❍	❍
College-readiness workshop or course	❍	❍	❍	❍	❍	❍	❍
Free textbooks or access codes	❍	❍	❍	❍	❍	❍	❍
Stipend	❍	❍	❍	❍	❍	❍	❍
Scholarship	❍	❍	❍	❍	❍	❍	❍
Assistance with finding internships	❍	❍	❍	❍	❍	❍	❍

4. Participation in STEM activities

Please indicate whether you participated in each of the STEM-related activities. If you did participate in the activity, please indicate how helpful the activity was during your time in Name of Community College's STEM program?

Did you participate in the following STEM-related activities?				How helpful was this activity during your time at Name of Community College?			
	Yes	No	Don't know	Not at all helpful	Somewhat helpful	Very helpful	Not applicable
Internships	❍	❍	❍	❍	❍	❍	❍
Research	❍	❍	❍	❍	❍	❍	❍
Speakers and presentations	❍	❍	❍	❍	❍	❍	❍
Field trips	❍	❍	❍	❍	❍	❍	❍
Career fairs	❍	❍	❍	❍	❍	❍	❍
Career development (e.g. mock interviews, resume writing, etc.)	❍	❍	❍	❍	❍	❍	❍
Mentorship program	❍	❍	❍	❍	❍	❍	❍

5. Connections with peers

To what extent were you able to form connections with other students in the *SSA/STEM program* at Name of Community College?

❍Not at all ❍To some extent ❍To a great extent

6. Strengths of the program

a. Please list the top three strengths of the *STEM/SSA program*.

7. Needed improvements for the program

a. Please list the top three ways in which you believe Name of Community College could improve the *STEM/SSA program*.

STEM Starter Academy – Summer 2016 Student Experience Survey Analysis

The Student Experience Survey was developed in Year 3 to provide a student perspective on SSA programs and initiatives that is comparable across campuses. The instrument consists of seven questions and was administered by SSA campus representatives either online or on paper. Two closed-ended questions ask students about their participation in various STEM-related supports and activities and the perceived helpfulness of these supports and activities. Another closed-ended question gauges students' perceptions of the impact of participation in an SSA program or intervention on their sense of self-efficacy related to STEM. A fourth closed-ended question asks students to assess how their experience as a student was shaped by their participation in SSA/STEM-related activities, and a fifth closed-ended question asks students about their ability to form connections with their SSA/STEM peers. Two open-ended questions solicit student perspectives on the strengths of their programs and recommended improvements.

The survey was administered by each of the 15 community colleges, and results were sent to UMDI. In the interest of protecting student identities and encouraging participation in the survey, UMDI, DHE, and site representatives decided that data would only be reported in the aggregate: that is, individual student-level responses were not made available to UMDI. While this strategy may have enhanced the response rate, as was intended, data analysis is limited in certain ways, as noted in the discussion below. UMDI will revisit survey design, administration, and analysis issues when planning a Year 4 student survey.

This section presents information from all survey respondents (n=504). It should be noted that the number of students, the supports they received, and the types of activities in which they participated vary substantially across sites.

The discussion below is organized by survey question. Not every student participant answered each question. However, each question was answered by at least 80% of the respondents.
In the figures that follow, results are color coded. Anything in red or pink represents a relatively positive opinion or experience. Anything in the shades of grey represents a lack of participation in a certain activity, or a neutral or relatively negative opinion or experience.

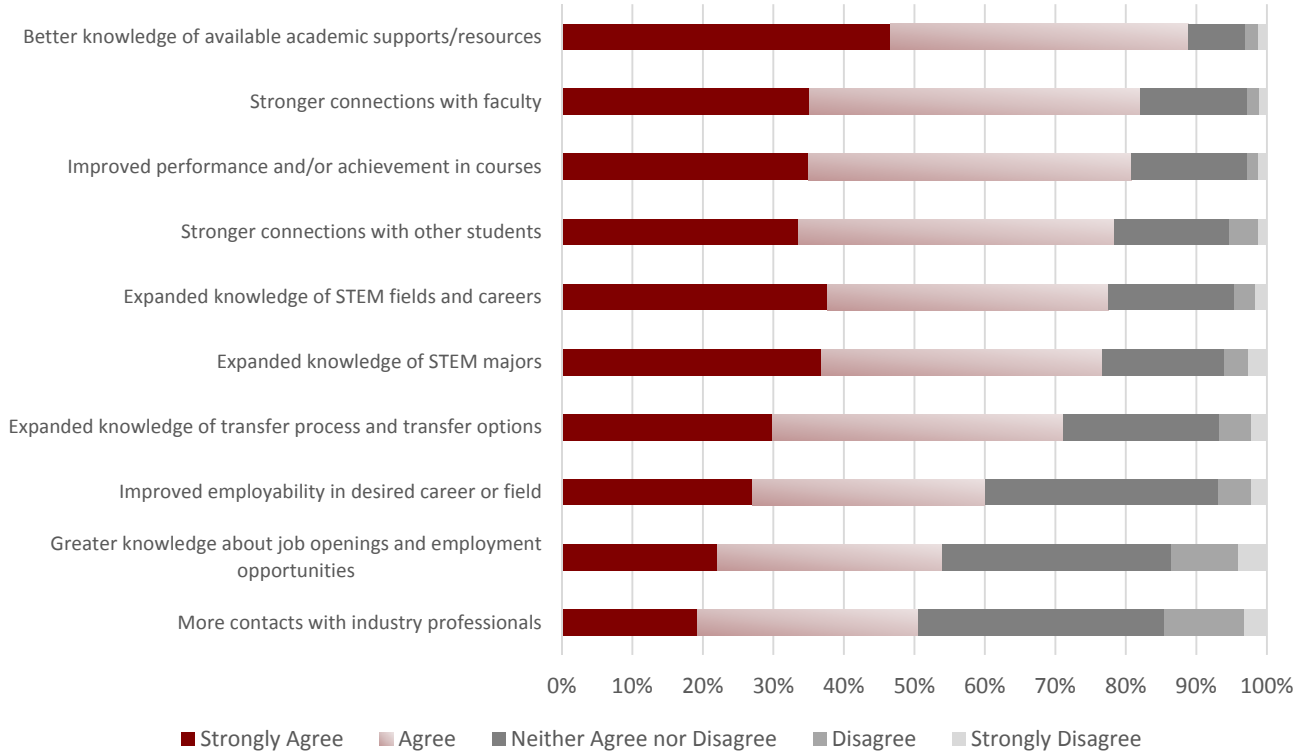
Respondents perceive participation in SSA activities to positively impact their experiences as students

Figure 1 presents respondents' perceptions of how their experiences as students were shaped by participation in an SSA program. At least half of the respondents strongly agreed or agreed that the program positively impacted each of the areas listed (connections with faculty and students; knowledge of academic supports, resources, and STEM fields and majors; academic performance; and industry and employment).

Notably, almost 90% of the respondents strongly agreed or agreed that through their participation in SSA activities, they now have a better knowledge of available academic supports/resources. Over 80% of students reported that their performance or achievement in courses improved as a result of participation in SSA activities. About three-quarters of respondents (77%) strongly agreed or agreed that their knowledge of STEM majors was expanded, and a similar percentage (71%) reported an expanded knowledge of the transfer process and of transfer options. These results highlight students' beliefs that

participation in SSA contributes to their academic success and equips them to further their pursuit of STEM learning.

Figure 1: Student Perceptions of Impacts Associated with Participation in SSA-Related Activities



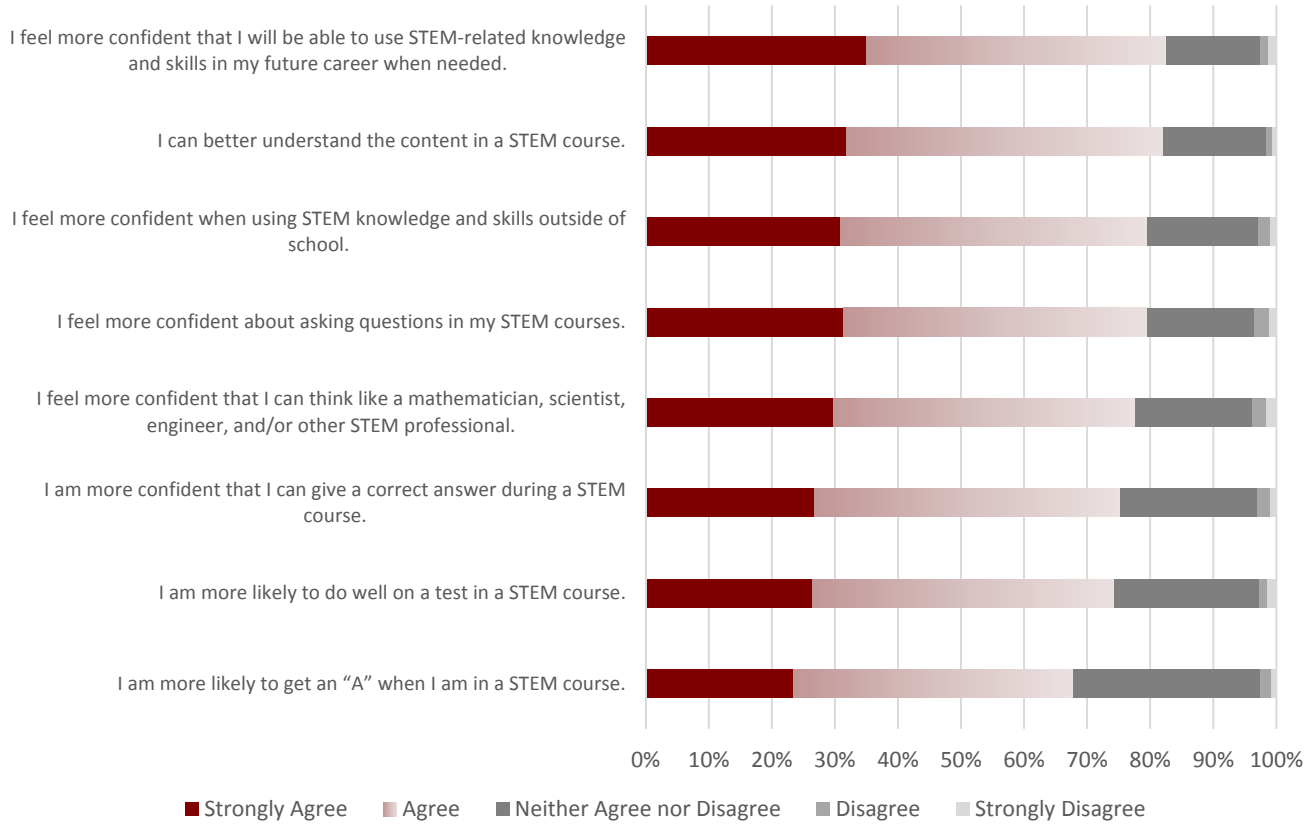
About 80% of respondents either strongly agreed or agreed that participation in SSA activities resulted in **stronger connections with faculty and other students.**

While their connections within the community college were perceived by large percentage of students to have improved, fewer students similarly assessed their connections to industry and employment. Only 50% of respondents strongly agreed or agreed that they had more contacts with industry professionals after participating in SSA activities. Just over half of the respondents (54%) strongly agreed or agreed that they gained a greater knowledge about job openings and employment opportunities, and 60% strongly agreed or agreed that participation in SSA activities improved their employability within a desired career or field.

Students perceive positive changes in STEM self-efficacy after participating in SSA activities

Figure 2 illustrates students' reports of self-efficacy gained through their participation in SSA activities. Overall, more than 65% of respondents agreed to some extent that participation in the program led to increased self-efficacy in each of the areas probed. Notably, about 80% of the respondents strongly agreed or agreed that they are now better able to understand content in a STEM course, feel more confident when using STEM knowledge and skills outside of school, and are now more confident that they will be able to use STEM-related knowledge and skills in their future careers.

Figure 2. Student Perceptions of Changes in STEM Self-Efficacy after Participation in SSA Activities



Students rate STEM supports and activities as helpful

Figure 3 reflects the ratings of respondents that participated in various types of STEM support. To put these ratings in context, the figure also includes the proportion of respondents who indicated that they did not participate in these activities, and therefore did not rate their helpfulness.[1] Overall, of the respondents who provided a helpfulness rating, the majority found the supports somewhat or very helpful. Advising was the most highly assessed by those who rated the helpfulness of the supports (98% chose very helpful or somewhat helpful), followed closely by college readiness workshops or courses (97% very helpful or somewhat helpful). 93–95% of those who rated helpfulness assessed several other supports as very helpful or somewhat helpful: tutoring, peer mentoring, math preparation programs or boot camps, free textbooks and access codes, stipends, and developmental math courses. Scholarships and assistance with finding internships had the highest proportions of respondents who chose "not at all helpful" (about 10% and 12%, respectively). However, like all other support services included in this item, a majority of students that rated these supports found them either somewhat very helpful.

[1] Data were reported in the aggregate and therefore we were unable to determine whether or not the students who rated the helpfulness of the given support had indicated that they had received the support. Therefore, it is possible that some students who had not received a given support nevertheless rated its helpfulness. The evaluation team, DHE, and the sites will revisit data collection and analysis strategies prior to a Year 4 survey administration.

Figure 3. Helpfulness of STEM-related Supports *

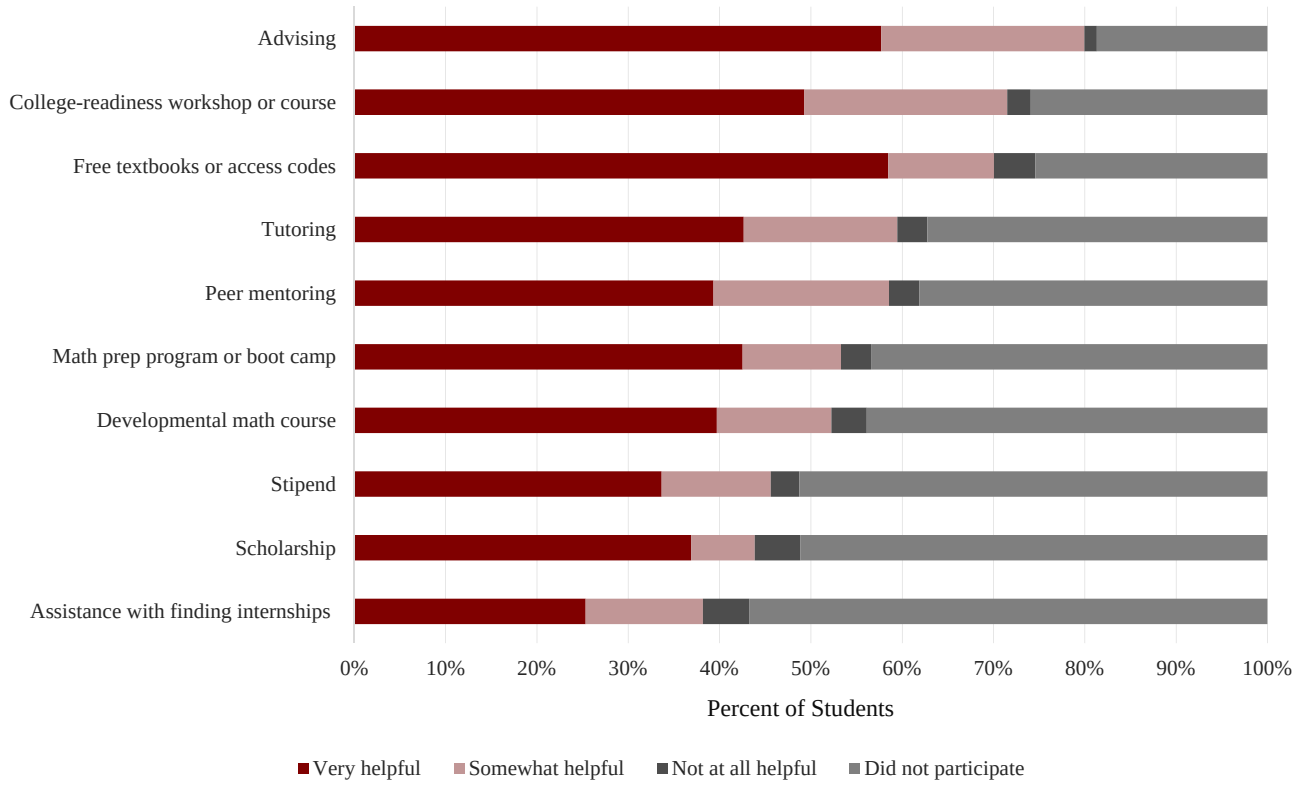
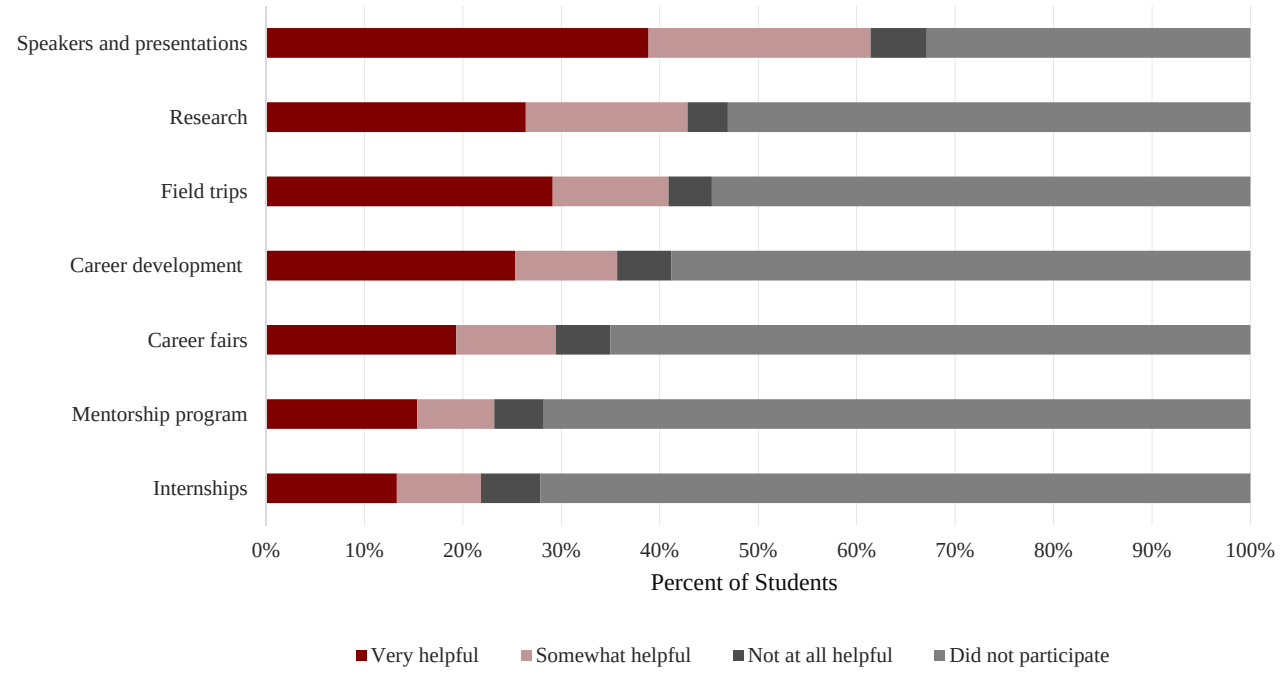


Figure 4. Helpfulness of STEM-related Activities *



*The category "not applicable" was used in the survey instrument, and is replaced in this figure by the phrase "did not participate".

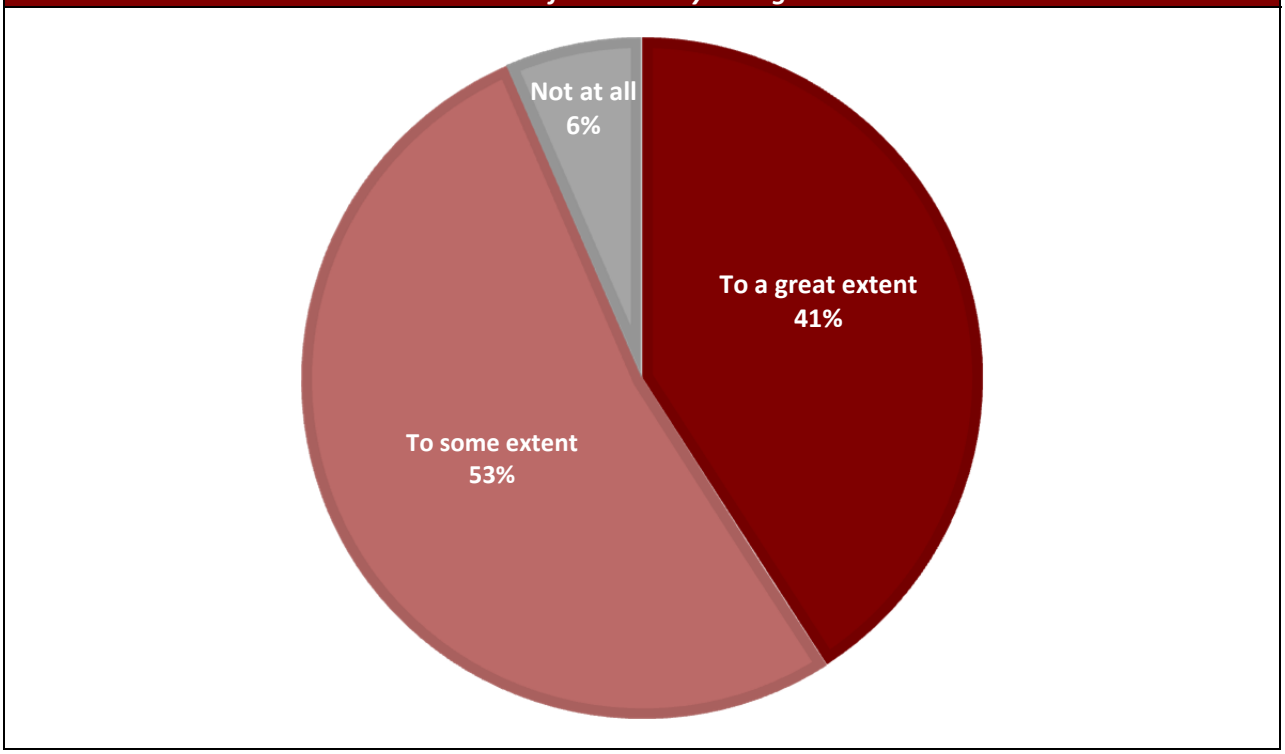
Figure 4 reflects the ratings of respondents that participated in various types of STEM activities. The figure also includes respondents that did not participate in these activities, and therefore did not rate their helpfulness.[2] Mirroring the perceptions of STEM-related supports (Figure 3), a much greater proportion of students who rated the helpfulness of these activities found them somewhat or very helpful than found them not helpful.

Students report connecting with SSA/STEM peers

Over 90% of respondents reported that they were able to form connections with other students in their SSA/STEM program either to some extent (53%) or to a great extent (41%). These results suggest that SSA/STEM programs are helping to foster community among participants.

Figure 5. Student Perceptions of Ability to Form Connections with Other Students in SSA/STEM Programs at their Community College

"To what extent were you able to form connections with other students in the SSA/STEM program at *Name of Community College*?"



[2] As previously noted, data were reported in the aggregate and therefore we were unable to determine whether or not the students who rated the helpfulness of the given activity had indicated that they had participated in the activity. Therefore, it is possible that some students who had not participated in a given activity nevertheless rated its helpfulness. The evaluation team, DHE, and the sites will revisit data collection and analysis strategies prior to a Year 4 survey administration.

Perceived strengths include connections (to faculty, mentors, and peers) and readiness programming

Open-ended questions probed students' perceptions of the strengths of their programs (see Figure 6) and ways in which programs could improve.

Overall, students cited professors and mentors as strong components of their programs, remarking on the instructors' abilities to break down material in a way that increased their understanding as well as the general support provided by instructors. Students commented:

- "The professors were good. The mentors were amazing [and] very helpful."
- "[Having a] mentor is an amazing idea; [I] love that. She was able to help with everything."
- "The mentors were amazing, very helpful."

Students also highlighted aspects of their programs that contributed to their increased readiness for the fall college semester (e.g., learning to map out classes, learning how to organize time, E-portfolios). Additionally, students appreciated the connections they were able to make with different instructors (contributing to their preparation for the fall) as well as the connections with other students, which contributed to their motivation and confidence. They identified program strengths that contributed to their college success as follows:

- "Having students engage with one another and also with the advising leader of the program."
- "Hav[ing] a motivated group of individuals who want to do well. Hav[ing] kind staff who are willing to help students."
- "The math booster helped in many ways; [for] me it helped my confidence. I wasn't stressed like I would be in a regular classroom. It was challenging but great."

Students also identified aspects of their programs that contributed to career readiness (e.g., learning about different careers, how to interview, email etiquette, and networking skills). Comments related to increased knowledge of and preparation for future careers include:

- "Getting the chance to speak with the advisors, guest speakers, having excellent resources and showing examples of opportunities."
- "STEM is helpful with giving you a crash course [in] what a major or job may be like."
- "The STEM program is accessible for most people. The STEM program is affordable. The STEM program opens opportunities to new careers for people who partake in it."
- "The program provided me with the confidence I needed and also it made me more comfortable. I know for certain I want to pursue a career in engineering."

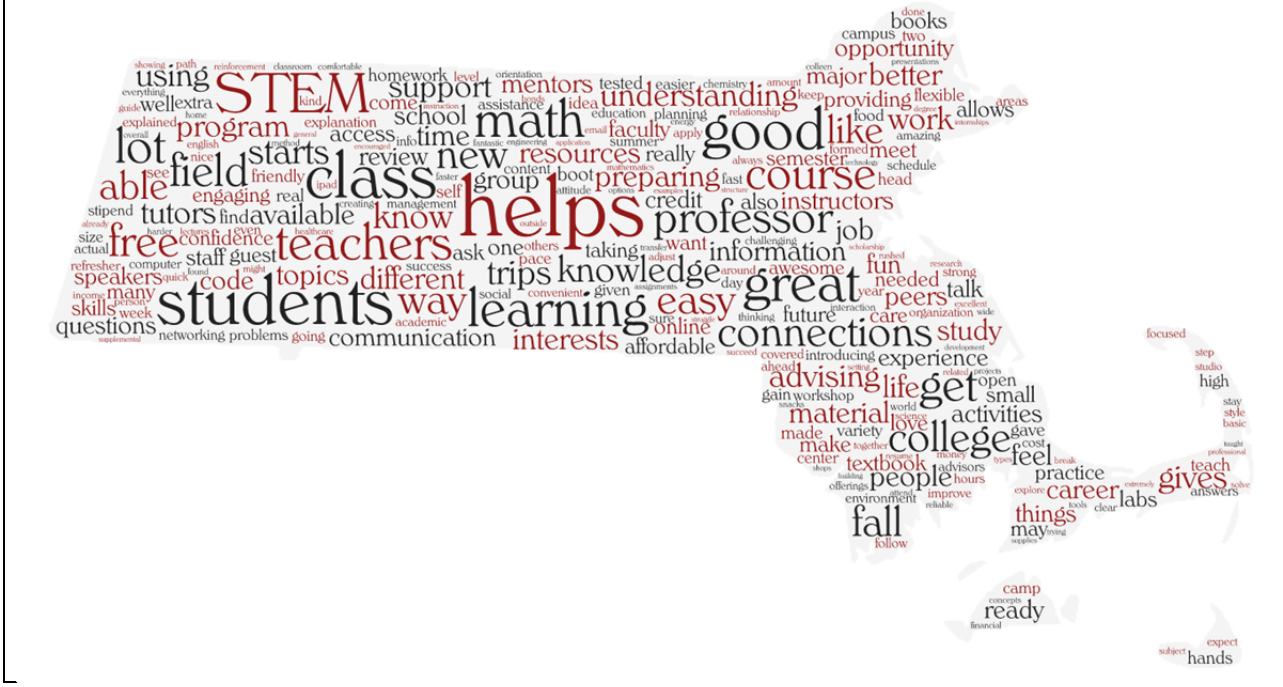
Recommended improvements focus on scaling up existing programming

Respondents suggested three categories of recommended improvements: more time, more staff, and more STEM programs overall. Students noted that additional time would have been helpful to fully understand the concepts that were being taught, to complete assignments, or to allow for more field trips or activities (i.e., research projects, group projects, hands-on activities).

A number of students identified a need to increase the number of tutors or decrease the number of participants in the program in order to improve the quality and availability of extra help.

Some students articulated a wish for more SSA programs like the ones offered in the summer, either during the fall and spring semester or even during weekends or evenings. This suggests that although changes to the summer programs' structures may be warranted, students find the experience helpful and productive.

Figure 6: Word Cloud of Student Experience Survey Feedback on Program Strengths
(Most commonly used words – size reflects frequency of use)



STEM Starter Academy Participant Exit Survey

Name of Community College is interested in hearing from students about their experiences in science, technology, engineering, and mathematics (STEM) professional or degree programs. **The online survey will take about 5 minutes to complete.**

Your participation is completely voluntary and you may refuse to participate without penalty. Your choice to participate or not will not impact your grades or your status with the college.

Your responses will be used to help inform administrators at Name of Community College about the climate of its STEM programs as well as to inform state-level administrators about Massachusetts community college STEM programs more generally.

Any data you provide in this survey will be kept confidential unless disclosure is required by law. Your answers to the questions in this survey will not impact your grades or your status with the college. In any report we publish, we will not include information that will make it possible to identify you or any individual participant. The responses you provide will be kept by either the SSA coordinator or by the Institutional Research office at your campus.

We thank you for taking time out of your busy schedule to complete this survey. If you have any questions about this project, please feel free to contact us either by e-mail [email] or telephone [phone].

Sincerely,

Name of contact

If you DO want to participate, please sign at the bottom of this page, then complete the survey.

If you DO NOT want to participate, please stop now and do not complete the survey.

I have read and understood the above information and agree to participate in this survey.

_____ _____

PARTICIPANT'S SIGNATURE *PRINTED NAME* *DATE*

1. Why did you leave Name of Community College? (Check all that apply.)

Academic

- ☐ Completed or graduated from my program
- ☐ Change of interest or goals
- ☐ Challenging academic workload
- ☐ Grades below my expectations
- ☐ Grades below Name of Community College's expectations
- ☐ Transferred to another college or university (please specify):

Personal/Financial

- ☐ Financial concerns
- ☐ Personal/family concerns
- ☐ Moved out of the area
- ☐ Conflict between job and studies
- ☐ Accepted a job

Scheduling/Logistics

- ☐ Transportation concerns
- ☐ Scheduling concerns

Other

- ☐ Other (please specify):

2. What are you doing or plan to do now that you have left Name of Community College? (Check all that apply.)

- ☐ Start/return to work in a STEM field
- ☐ Start/return to work in a non-STEM field
- ☐ Transfer to another community college as a STEM major
- ☐ Transfer to another community college as a non-STEM major
- ☐ Transfer to a four-year college or university as a STEM major
- ☐ Transfer to a four-year college or university as a non-STEM major
- ☐ Return to Name of Community College at a later date as a STEM major
- ☐ Return to Name of Community College at a later date as a non-STEM major
- ☐ Go into military service
- ☐ Other (please specify):

3. Name: _____ Student ID #: _____

We are collecting your name and your student ID number so that we can link your responses to your academic experiences while at Name of Community College. Your individual responses to this survey will not be shared with teachers or administrators and will not impact your grades or your status with the college in any way.

Thank you for taking the time to complete this survey. The information you have provided will be used to help guide the college and the state as they seek to improve STEM educational experiences for all students. If you have any questions about this survey, you can contact Name of contact, [email; phone].

Exit Survey Findings

During Year 3, sites were asked to administer an exit survey to STEM Starter Academy students that left or were planning to leave the institution. The Exit Survey was designed to gather common information from SSA primary participants about their reasons for leaving the community college and their post-community college plans. The Exit Survey is currently our only means of collecting cross-site data on rates of student job placement (an important outcome measure for the SSA model).

The initial data collection occurred during summer 2016, and data were submitted in Fall 2016 (after campuses had confirmed that Exit Survey respondents had not returned to the campus for the fall term). This report summarizes responses for this initial collection. Response rates were low (58 responses from 7 campuses) and of the submitted responses, 45% were from one site (Roxbury). Given the disproportionate representation of one campus, the fact that less than half of sites submitted responses, and that those sites had relatively few respondents, the findings presented below should be interpreted with caution. It was anticipated that campuses would need time to determine best practices for administering exit surveys to students and submitting those data to DHE, and we anticipate that future Exit Survey data administrations and data collections will provide better data.

The Exit Survey included two close-ended questions. The first question asked participants to indicate the reason(s) they left their institution. The second question asked participants to indicate their current and/or future plans.

Table 1 summarizes responses to question 1, regarding participants' reasons for leaving their college. Most students cited only one reason. Overall, 53% of respondents indicated that they left their institution because they graduated or completed their program of study. 26% of respondents indicated that they left because they were high school students and planned to return to their highs school. A low number of students 7% of respondents reported that they transferred to another institution. 31% of respondents reported 'other' reasons for leaving.

Table 1: Primary participant's reasons for leaving the college (n=58)		
	Students	**%**
Completed/graduated	31	53%
Other reason for leaving	18	31%
Scheduling concerns	6	10%
Transferred	4	7%
Transportation concerns	3	5%
Change of interest goals	2	3%
Financial concerns	2	3%
Grades below college expectations	2	3%
Job studies conflict	2	3%
Accepted job	1	2%
Challenging workload	1	2%
Moved out	1	2%
Personal concerns	1	2%
Grades below expectations	0	0%

Table 2 summarizes short- and long-term plans for students that left their institution. 17% of respondents indicated that they plan to return to the same institution as a STEM major and 10% reported plans to return to the same institution as a non-STEM major. 10% of respondents indicated that they planned to start work in a STEM field, and 10% indicted that they planned to start work in a non-STEM field. 10% of respondents indicated that they planned to attend a 4-year college as a STEM major. 36% of respondents indicated they had 'other' plans.

Table 2: Current and/or future plans for primary participants that left the college (n=58)		
	Students	**%**
Other plans	21	36%
Return to same college in a STEM major	10	17%
Return to same college in a non-STEM major	6	10%
Start work in a non-STEM field	6	10%
Start work in a STEM field	6	10%
Transfer to 4 year college in a STEM major	6	10%
Enter military	2	3%
Transfer to 4 year college in a non-STEM major	1	2%
Transfer to community college non-STEM major	0	0%
Transfer to community college STEM major	0	0%

STEM Starter Academy Year 3 Site Report Survey

This survey is being conducted by the UMass Donahue Institute on behalf of the Massachusetts Department of Higher Education. Responses to this survey are considered a part of the Year 3 site report for your campus. The Year 3 site report is divided into two parts -- this survey (which consists of several close-ended items), and a site narrative (which includes several open-ended items). The narrative portion of the report will be distributed as a Word document.

The purpose of the STEM Starter Academy Year 3 site report is to review your institution's work with SSA during Year 3 (September 2015 - August 2016). We hope this opportunity to reflect will inform your site-specific evaluation efforts.

Year 3 site reports will contribute valuable information to DHE's report to the Massachusetts Legislature in March 2017, and will also help inform the technical assistance strategy and evaluation efforts of the initiative as a whole.

****

Instructions for completing this survey

*****Please complete by November 4, 2016*****

The survey link you were sent is unique to your institution and references a single institutional copy of the survey. We encourage collaboration among SSA colleagues at your institution to answer the questions as fully as possible. This invitation and link you were sent can be shared. However, the link is to a single live copy of your institution's survey and multiple users will have access via that link. Click here for a PDF version of the survey to facilitate sharing and collaboration.

You do not need to complete this survey all at one time. Your progress in the survey is saved automatically when you close the browser window. To return to where you left off, use the link to this survey that was emailed to you.

If you have questions about this survey, please contact Jackie Stein (jstein@donahue.umassp.edu). Please direct questions about the SSA evaluation to Jeremiah Johnson (jjohnson@donahue.umassp.edu).

Thank you for completing this survey and for your ongoing efforts to contribute to the STEM Starter Academy evaluation.

Respondent Information

- Name:
- SSA role:
- Email address:
- Phone number:

The person whose information is included above will receive an email containing the raw version of your responses after you submit this survey.

In the remaining questions, to the best of your ability please represent your institution's perspective rather than your personal opinion. Please feel free to consult with SSA colleagues from your college to answer the questions in this survey as fully as possible.

As a reminder: SSA Year 3 work includes all work done with the entire $300,000 FY16 budget, including the $50,000 early college supplement.

1. Target populations

a. Which populations did you recruit for your SSA activities in Year 3 (Fall 2015 through Summer 2016)? Please check all that apply.

- ❑ High school seniors (those who could matriculate in Fall 2016)
- ❑ Incoming students (those who had applied to or expressed interest in the community college)
- ❑ Current community college students
- ❑ Individuals in Adult Basic Education programs
- ❑ Veterans
- ❑ Community members
- ❑ Adults with high school equivalency (i.e. GED or HiSET)
- ❑ High school freshmen, sophomores, or juniors
- ❑ Other (please describe) _____

b. Which populations participated in your SSA activities in Year 3? Please check all that apply.

- ❑ High school seniors (those who could matriculate in Fall 2016)
- ❑ Incoming students (those who had applied to or expressed interest in the community college)
- ❑ Current community college students
- ❑ Individuals in Adult Basic Education programs
- ❑ Veterans
- ❑ Community members
- ❑ Adults with high school equivalency (i.e. GED or HiSET)
- ❑ High school freshmen, sophomores, or juniors
- ❑ Other (please describe) _____

For the remaining questions about your institution's Year 3 activities, please select the most appropriate answers for each academic year or summer activity.

For early college activity, please report for the whole year, from Fall 2015 through Summer 2016.

Note: some early college activities will likely be included in your Year 3 Academic Year and Summer Activities, but only early college activities should be included in the Early College Activity section.

2. Recruitment

	Year 3 Academic Year* Activity			Year 3 Summer (2016) Activity			Early College (EC) Activity**		
	Yes, took place during the academic year **with** at least partial SSA support or funding	Yes, took place during the academic year **without** SSA support or funding	Did not take place during the academic year	Yes, took place during the summer **with** at least partial SSA support or funding	Yes, took place during the summer **without** SSA support or funding	Did not take place during the summer	Yes, was part of Year 3 EC activity **with** at least partial SSA support or funding	Yes, was part of Year 3 EC activity **without** SSA support or funding	Did not take place as part of EC during Year 3
a. Visits to high schools	❍	❍	❍	❍	❍	❍	❍	❍	❍
b. Events at your community college campus	❍	❍	❍	❍	❍	❍	❍	❍	❍
c. Events with high school staff and faculty	❍	❍	❍	❍	❍	❍	❍	❍	❍
d. Outreach by current community college students	❍	❍	❍	❍	❍	❍	❍	❍	❍
e. Outreach by or involving community college faculty	❍	❍	❍	❍	❍	❍	❍	❍	❍
f. Targeted email or letters	❍	❍	❍	❍	❍	❍	❍	❍	❍
g. Targeted phone calls	❍	❍	❍	❍	❍	❍	❍	❍	❍
h. Web presence and advertising	❍	❍	❍	❍	❍	❍	❍	❍	❍
i. Other (please describe)	❍	❍	❍	❍	❍	❍	❍	❍	❍

*Year 3 Academic Year = Fall 2015 through Spring 2016

**Please report on your early college activities across the whole year, from Fall 2015 through Summer 2016. Early College activities include those designed to prepare high school students for college and career and engage them in a path to and through college.

Use this space for notes or comments:

We know that you might need to skip forward and back as you complete this survey. Would you like a reminder at the end of the survey to return to this page?

❍ Yes, please remind me to return to this page.

❍ No, I've completed the information on this page.

3. Academic Advising

	Year 3 Academic Year* Activity			Year 3 Summer (2016) Activity			Early College (EC) Activity**		
	Yes, took place during the academic year **with** at least partial SSA support or funding	Yes, took place during the academic year **without** SSA support or funding	Did not take place during the academic year	Yes, took place during the summer **with** at least partial SSA support or funding	Yes, took place during the summer **without** SSA support or funding	Did not take place during the summer	Yes, was part of Year 3 EC activity **with** at least partial SSA support or funding	Yes, was part of Year 3 EC activity **without** SSA support or funding	Did not take place as part of EC during Year 3
a. STEM specific academic advising	❍	❍	❍	❍	❍	❍	❍	❍	❍
b. Intrusive advising	❍	❍	❍	❍	❍	❍	❍	❍	❍
c. Professional development for advisors	❍	❍	❍	❍	❍	❍	❍	❍	❍
d. Advising software	❍	❍	❍	❍	❍	❍	❍	❍	❍
e. Other (please describe)	❍	❍	❍	❍	❍	❍	❍	❍	❍

*Year 3 Academic Year = Fall 2015 through Spring 2016

**Please report on your early college activities across the whole year, from Fall 2015 through Summer 2016. Early College activities include those designed to prepare high school students for college and career and engage them in a path to and through college.

4. Academic Support

	Year 3 Academic Year* Activity			Year 3 Summer (2016) Activity			Early College (EC) Activity**		
	Yes, took place during the academic year **with** at least partial SSA support or funding	Yes, took place during the academic year **without** SSA support or funding	Did not take place during the academic year	Yes, took place during the summer **with** at least partial SSA support or funding	Yes, took place during the summer **without** SSA support or funding	Did not take place during the summer	Yes, was part of Year 3 EC activity **with** at least partial SSA support or funding	Yes, was part of Year 3 EC activity **without** SSA support or funding	Did not take place as part of EC during Year 3
a. Peer tutoring	❍	❍	❍	❍	❍	❍	❍	❍	❍
b. Professional tutoring	❍	❍	❍	❍	❍	❍	❍	❍	❍
c. Supplemental instruction or facilitated study groups	❍	❍	❍	❍	❍	❍	❍	❍	❍
d. College skills events or speakers	❍	❍	❍	❍	❍	❍	❍	❍	❍
e. Block scheduling	❍	❍	❍	❍	❍	❍	❍	❍	❍
f. STEM-specific orientations	❍	❍	❍	❍	❍	❍	❍	❍	❍
g. Other (please describe)	❍	❍	❍	❍	❍	❍	❍	❍	❍

*Year 3 Academic Year = Fall 2015 through Spring 2016

**Please report on your early college activities across the whole year, from Fall 2015 through Summer 2016. Early College activities include those designed to prepare high school students for college and career and engage them in a path to and through college.

Use this space for notes or comments:

Would you like a reminder at the end of the survey to return to this page?

❍ Yes, please remind me to return to this page.

❍ No, I've completed the information on this page.

5. Financial Support

	Year 3 Academic Year* Activity			Year 3 Summer (2016) Activity			Early College (EC) Activity**		
	Yes, took place during the academic year **with** at least partial SSA support or funding	Yes, took place during the academic year **without** SSA support or funding	Did not take place during the academic year	Yes, took place during the summer **with** at least partial SSA support or funding	Yes, took place during the summer **without** SSA support or funding	Did not take place during the summer	Yes, was part of Year 3 EC activity **with** at least partial SSA support or funding	Yes, was part of Year 3 EC activity **without** SSA support or funding	Did not take place as part of EC during Year 3
a. Scholarships	❍	❍	❍	❍	❍	❍	❍	❍	❍
b. Participation stipends	❍	❍	❍	❍	❍	❍	❍	❍	❍
c. Book vouchers	❍	❍	❍	❍	❍	❍	❍	❍	❍
d. Textbook lending	❍	❍	❍	❍	❍	❍	❍	❍	❍
e. Paid internships	❍	❍	❍	❍	❍	❍	❍	❍	❍
f. Other (please describe)	❍	❍	❍	❍	❍	❍	❍	❍	❍

*Year 3 Academic Year = Fall 2015 through Spring 2016

**Please report on your early college activities across the whole year, from Fall 2015 through Summer 2016. Early College activities include those designed to prepare high school students for college and career and engage them in a path to and through college.

Use this space for notes or comments

Would you like a reminder at the end of the survey to return to this page?

❍ Yes, please remind me to return to this page.

❍ No, I've completed the information on this page.

6. Social Support

	Year 3 Academic Year* Activity			Year 3 Summer (2016) Activity			Early College (EC) Activity**		
	Yes, took place during the academic year **with** at least partial SSA support or funding	Yes, took place during the academic year **without** SSA support or funding	Did not take place during the academic year	Yes, took place during the summer **with** at least partial SSA support or funding	Yes, took place during the summer **without** SSA support or funding	Did not take place during the summer	Yes, was part of Year 3 EC activity **with** at least partial SSA support or funding	Yes, was part of Year 3 EC activity **without** SSA support or funding	Did not take place as part of EC during Year 3
a. Cohort meetings	❍	❍	❍	❍	❍	❍	❍	❍	❍
b. Cohort activities	❍	❍	❍	❍	❍	❍	❍	❍	❍
c. Peer mentors	❍	❍	❍	❍	❍	❍	❍	❍	❍
d. Coaching/ support from SSA coordinator	❍	❍	❍	❍	❍	❍	❍	❍	❍
e. Study or gathering space for SSA/STEM students	❍	❍	❍	❍	❍	❍	❍	❍	❍
f. Other (please describe)	❍	❍	❍	❍	❍	❍	❍	❍	❍

*Year 3 Academic Year = Fall 2015 through Spring 2016

**Please report on your early college activities across the whole year, from Fall 2015 through Summer 2016. Early College activities include those designed to prepare high school students for college and career and engage them in a path to and through college.

Use this space for notes or comments

Would you like a reminder at the end of the survey to return to this page?

❍ Yes, please remind me to return to this page.

❍ No, I've completed the information on this page.

7. Coursework

	Year 3 Academic Year* Activity			Year 3 Summer (2016) Activity			Early College (EC) Activity**		
	Yes, took place during the academic year **with** at least partial SSA support or funding	Yes, took place during the academic year **without** SSA support or funding	Did not take place during the academic year	Yes, took place during the summer **with** at least partial SSA support or funding	Yes, took place during the summer **without** SSA support or funding	Did not take place during the summer	Yes, was part of Year 3 EC activity **with** at least partial SSA support or funding	Yes, was part of Year 3 EC activity **without** SSA support or funding	Did not take place as part of EC during Year 3
a. STEM introductory courses	❍	❍	❍	❍	❍	❍	❍	❍	❍
b. Advanced STEM courses	❍	❍	❍	❍	❍	❍	❍	❍	❍
c. Developmental math courses	❍	❍	❍	❍	❍	❍	❍	❍	❍
d. Accelerated or self-paced math courses	❍	❍	❍	❍	❍	❍	❍	❍	❍
e. STEM dual-enrollment courses	❍	❍	❍	❍	❍	❍	❍	❍	❍
f. Coursework offered at high schools	❍	❍	❍	❍	❍	❍	❍	❍	❍
g. College success courses	❍	❍	❍	❍	❍	❍	❍	❍	❍
h. Other (please describe)	❍	❍	❍	❍	❍	❍	❍	❍	❍

*Year 3 Academic Year = Fall 2015 through Spring 2016

**Please report on your early college activities across the whole year, from Fall 2015 through Summer 2016. Early College activities include those designed to prepare high school students for college and career and engage them in a path to and through college.

8. STEM Workshops, Prep, or Booster Programs (not coursework)

	Year 3 Academic Year* Activity			Year 3 Summer (2016) Activity			Early College (EC) Activity**		
	Yes, took place during the academic year **with** at least partial SSA support or funding	Yes, took place during the academic year **without** SSA support or funding	Did not take place during the academic year	Yes, took place during the summer **with** at least partial SSA support or funding	Yes, took place during the summer **without** SSA support or funding	Did not take place during the summer	Yes, was part of Year 3 EC activity **with** at least partial SSA support or funding	Yes, was part of Year 3 EC activity **without** SSA support or funding	Did not take place as part of EC during Year 3
a. Math placement test refresher or booster programs	❍	❍	❍	❍	❍	❍	❍	❍	❍
b. STEM exploratory workshops	❍	❍	❍	❍	❍	❍	❍	❍	❍
c. College-readiness programs	❍	❍	❍	❍	❍	❍	❍	❍	❍
d. Other (please describe)	❍	❍	❍	❍	❍	❍	❍	❍	❍

*Year 3 Academic Year = Fall 2015 through Spring 2016

**Please report on your early college activities across the whole year, from Fall 2015 through Summer 2016. Early College activities include those designed to prepare high school students for college and career and engage them in a path to and through college.

Use this space for notes or comments:

Would you like a reminder at the end of the survey to return to this page?

❍ Yes, please remind me to return to this page.

❍ No, I've completed the information on this page.

9. Transfer Exploration

	Year 3 Academic Year* Activity			Year 3 Summer (2016) Activity			Early College (EC) Activity**		
	Yes, took place during the academic year **with** at least partial SSA support or funding	Yes, took place during the academic year **without** SSA support or funding	Did not take place during the academic year	Yes, took place during the summer **with** at least partial SSA support or funding	Yes, took place during the summer **without** SSA support or funding	Did not take place during the summer	Yes, was part of Year 3 EC activity **with** at least partial SSA support or funding	Yes, was part of Year 3 EC activity **without** SSA support or funding	Did not take place as part of EC during Year 3
a. Transfer-specific advising for STEM fields	❍	❍	❍	❍	❍	❍	❍	❍	❍
b. Transfer-focused events, activities, or speakers	❍	❍	❍	❍	❍	❍	❍	❍	❍
c. Transfer-focused field trips	❍	❍	❍	❍	❍	❍	❍	❍	❍
d. Other (please describe)	❍	❍	❍	❍	❍	❍	❍	❍	❍

*Year 3 Academic Year = Fall 2015 through Spring 2016

**Please report on your early college activities across the whole year, from Fall 2015 through Summer 2016. Early College activities include those designed to prepare high school students for college and career and engage them in a path to and through college.

10. Career Exploration

	Year 3 Academic Year* Activity			Year 3 Summer (2016) Activity			Early College (EC) Activity**		
	Yes, took place during the academic year **with** at least partial SSA support or funding	Yes, took place during the academic year **without** SSA support or funding	Did not take place during the academic year	Yes, took place during the summer **with** at least partial SSA support or funding	Yes, took place during the summer **without** SSA support or funding	Did not take place during the summer	Yes, was part of Year 3 EC activity **with** at least partial SSA support or funding	Yes, was part of Year 3 EC activity **without** SSA support or funding	Did not take place as part of EC during Year 3
a. Career advising	❍	❍	❍	❍	❍	❍	❍	❍	❍
b. Career exploration speakers or events targeted to current students	❍	❍	❍	❍	❍	❍	❍	❍	❍
c. Career exploration speakers or events targeted to incoming students	❍	❍	❍	❍	❍	❍	❍	❍	❍
d. Career exploration speakers or events targeted to high school students	❍	❍	❍	❍	❍	❍	❍	❍	❍
e. Career exploration field trips	❍	❍	❍	❍	❍	❍	❍	❍	❍
f. Internships	❍	❍	❍	❍	❍	❍	❍	❍	❍
g. Research opportunities	❍	❍	❍	❍	❍	❍	❍	❍	❍
h. Professional mentorship	❍	❍	❍	❍	❍	❍	❍	❍	❍
i. Other (please describe)	❍	❍	❍	❍	❍	❍	❍	❍	❍

*Year 3 Academic Year = Fall 2015 through Spring 2016

**Please report on your early college activities across the whole year, from Fall 2015 through Summer 2016. Early College activities include those designed to prepare high school students for college and career and engage them in a path to and through college.

Use this space for notes or comments

Would you like a reminder at the end of the survey to return to this page?

❍ Yes, please remind me to return to this page.

❍ No, I've completed the information on this page.

11. Industry Engagement

	Year 3 Academic Year* Activity			Year 3 Summer (2016) Activity			Early College (EC) Activity**		
	Yes, took place during the academic year **with** at least partial SSA support or funding	Yes, took place during the academic year **without** SSA support or funding	Did not take place during the academic year	Yes, took place during the summer **with** at least partial SSA support or funding	Yes, took place during the summer **without** SSA support or funding	Did not take place during the summer	Yes, was part of Year 3 EC activity **with** at least partial SSA support or funding	Yes, was part of Year 3 EC activity **without** SSA support or funding	Did not take place as part of EC during Year 3
a. Industry speakers or instructors	❍	❍	❍	❍	❍	❍	❍	❍	❍
b. Industry aligned curriculum development	❍	❍	❍	❍	❍	❍	❍	❍	❍
c. Industry advisory boards	❍	❍	❍	❍	❍	❍	❍	❍	❍
d. Industry-based internships	❍	❍	❍	❍	❍	❍	❍	❍	❍
e. Other (please describe)	❍	❍	❍	❍	❍	❍	❍	❍	❍

*Year 3 Academic Year = Fall 2015 through Spring 2016

**Please report on your early college activities across the whole year, from Fall 2015 through Summer 2016. Early College activities include those designed to prepare high school students for college and career and engage them in a path to and through college.

Use this space for notes or comments

Would you like a reminder at the end of the survey to return to this page?

❍ Yes, please remind me to return to this page.

❍ No, I've completed the information on this page.

12. Professional Development

	Year 3 Academic Year* Activity			Year 3 Summer (2016) Activity			Early College (EC) Activity**		
	Yes, took place during the academic year **with** at least partial SSA support or funding	Yes, took place during the academic year **without** SSA support or funding	Did not take place during the academic year	Yes, took place during the summer **with** at least partial SSA support or funding	Yes, took place during the summer **without** SSA support or funding	Did not take place during the summer	Yes, was part of Year 3 EC activity **with** at least partial SSA support or funding	Yes, was part of Year 3 EC activity **without** SSA support or funding	Did not take place as part of EC during Year 3
a. Professional development for faculty who teach STEM courses	❍	❍	❍	❍	❍	❍	❍	❍	❍
b. Professional development for STEM students	❍	❍	❍	❍	❍	❍	❍	❍	❍
c. Professional development for advising staff	❍	❍	❍	❍	❍	❍	❍	❍	❍
d. STEM curriculum revision or development	❍	❍	❍	❍	❍	❍	❍	❍	❍
e. Other (please describe)	❍	❍	❍	❍	❍	❍	❍	❍	❍

*Year 3 Academic Year = Fall 2015 through Spring 2016

**Please report on your early college activities across the whole year, from Fall 2015 through Summer 2016. Early College activities include those designed to prepare high school students for college and career and engage them in a path to and through college.

13. Equipment or infrastructure investments

	Year 3 Academic Year* Activity			Year 3 Summer (2016) Activity			Early College (EC) Activity**		
	Yes, took place during the academic year **with** at least partial SSA support or funding	Yes, took place during the academic year **without** SSA support or funding	Did not take place during the academic year	Yes, took place during the summer **with** at least partial SSA support or funding	Yes, took place during the summer **without** SSA support or funding	Did not take place during the summer	Yes, was part of Year 3 EC activity **with** at least partial SSA support or funding	Yes, was part of Year 3 EC activity **without** SSA support or funding	Did not take place as part of EC during Year 3
a. Classroom technology	❍	❍	❍	❍	❍	❍	❍	❍	❍
b. Laboratory equipment	❍	❍	❍	❍	❍	❍	❍	❍	❍
c. Software (please specify)	❍	❍	❍	❍	❍	❍	❍	❍	❍
d. Other (please describe)	❍	❍	❍	❍	❍	❍	❍	❍	❍

*Year 3 Academic Year = Fall 2015 through Spring 2016

**Please report on your early college activities across the whole year, from Fall 2015 through Summer 2016. Early College activities include those designed to prepare high school students for college and career and engage them in a path to and through college.

Use this space for notes or comments

Would you like a reminder at the end of the survey to return to this page?

❍ Yes, please remind me to return to this page.

❍ No, I've completed the information on this page.

Thank you for completing this survey! Please take a few minutes to review the completeness of your responses before you submit.

Your colleges are doing important work through SSA and we would like to capture that work as completely as possible.

We provided you the option, earlier, to ask for a reminder to return to certain pages. If you chose that option, the questions about which you wanted reminders are listed below. Use the "Review My Answers" button at the bottom right if you would like to go back to review your responses.

- ❑ Question 2: Recruitment
- ❑ Questions 3 or 4: Academic Advising or Academic Support
- ❑ Question 5: Financial Support
- ❑ Question 6: Social Support
- ❑ Question 7 or 8: Coursework or Workshops
- ❑ Questions 9 or 10: Transfer or Career Advising
- ❑ Question 11: Industry Engagement
- ❑ Questions 12 or 13: Professional Development or Infrastructure Investments

To submit the survey, please click the "Submit" button at the bottom right. You will not be able to edit your responses once you submit.

The respondent whose email address was entered at the beginning of this survey:

Name, email address,

will receive an email containing the raw version of your responses after you submit. We will work to package your responses in a more readable format and send them back to your institution in a timely manner so you can use the data for your internal evaluation processes.

If you have any questions about the STEM Starter Academy evaluation, you can contact Jeremiah Johnson (jjohnson@donahue.umassp.edu or 774-455-7377) or Jackie Stein (jstein@donahue.umassp.edu, 413-587-2409).

Year 3 Site Report Narratives - Summary

Key Components

Site reporting on the key or main components of their institution's SSA program revealed fairly widespread agreement that building community around STEM and creating experiences that ready students for college and STEM fields were central to SSA programs across campuses. Two thirds of sites reported that the key components of SSA implementation at their site included variations on creating integrated, centralized, and positive experiences that help build STEM community. College and STEM readiness experiences—such as summer bridge programs, credit and non-credit mathematics, STEM exploration, and college readiness courses and workshops—were also reported by two thirds of sites as key components of their SSA implementations.

Career- and transfer-related initiatives, STEM exploration activities, STEM advising, and STEM tutoring were reported as key SSA components by 6-8 sites each. Other reported components include recruitment, mentoring, financial support, curriculum development, infrastructure, and early college initiatives.

Successful Strategies

When it came to naming particular strategies that most contributed to the success of SSA, there was less widespread agreement. Advising was the most commonly mentioned (by 7 sites). Cross-campus integration, cultivating community and group identity, outreach, academic support, and faculty involvement were each reported as successful strategies by five sites. Other successful strategies reported include cultivating curiosity about STEM, providing opportunities for student leadership, offering financial support, engaging in assessment for continuous improvement, and career and transfer activities.

Stakeholder Messages

Sites' messages to stakeholders about their SSA programs focused on two related themes: SSA as a springboard for entry into STEM, and SSA as the engine of a centralized STEM student support network. Nine sites emphasized engaging, preparing, and promoting student entry into STEM fields, including expanding and diversifying this pipeline of students. Eight sites reported focusing on supporting students through a network of linked services that encourage persistence and connection. Other stakeholder messages included emphases on preparation for careers and transfer, and increasing student engagement and connections to each other, to the college, and to STEM.

Main Successes of Year 3

Two thirds of sites reported outreach and participation among their main successes of Year 3. These successes include increased participation or enrollment, growing awareness of STEM fields or programs, and outreach by current and former SSA participants serving as leaders or program ambassadors. Seven sites reported academic achievement among their main successes—a difference from Year 2—noting high rates of developmental math completion, retention, and credit earning or general progress toward completion. A third of sites each reported as successes various forms of STEM integration on campus, increased opportunities for experiential learning or career and transfer activities, and positive outcomes from experiential learning opportunities such as student placements, strong relationships, and student preparedness.

Challenges

The main implementation challenges in Year 3 reported by sites were recruitment (8 sites); resource limitations, especially staffing (7 sites); and student tracking, data collection and reporting (6 sites). Recruitment challenges included populating summer bridge or early college programs and generating attendance at campus events and workshops (e.g., career-oriented activities). Of the sites that reported resource limitation challenges, four reported that the time-intensive nature of student support required more staff time than was available. A fifth had experienced turnover in program staff that had set them back. Two sites experienced higher levels of participation than in the past, which created challenging resource demands.

Benefits to Institution

Nine sites listed improved or expanded opportunities or supports for STEM students among the main benefits of SSA to their institutions. Improved or expanded opportunities included professional development, STEM career exposure, college success strategies, improved curriculum, and a "hackathon" activity. Supports included professional mentorship, career services, STEM-specific advising, tutoring, and improved community and culture around STEM.

Seven sites reported additional capacity to support STEM initiatives as a key benefit to their institutions through SSA. Additional capacity included resources for pilot testing, innovative approaches to increasing student success and persistence, and staff to support STEM-focused programming. Sites also noted expanded partnerships as a benefit of increased capacity; these included collaboration across departments on campus and with external partners such as community agencies. For example, one site reported that SSA supported the development of a strategic vision for STEM education on campus. Another site reported leveraging SSA success to obtain additional grant funding.
Nine sites reported that SSA had improved the visibility and reputation of their college as a STEM destination or had increased or diversified enrollments in STEM.

A third of sites reported that student successes—in college and career readiness, progress through their course of study, persistence, or engagement—were among the key benefits of SSA to their institutions.

Changes

In Year 3, sites continued to make adjustments to their SSA programming. Two thirds of sites reported adjusting or developing new programming. Six sites developed and implemented a range of new elements to their SSA programs; these included new summer bridge programs, career awareness programming, a computer science workshop, new events (e.g., a hackathon), and new elements for existing programming (a bilingual course component and a writing boot camp). Programming adjustments included adding a course option for participating in a STEM scholars program, reducing student stipends, streamlining event offerings, increasing programming related to transfer or focused on STEM student identity, and refocusing recruitment efforts on different populations.

Sites also reported that early college initiatives represented a significant change to their programming (6 sites), and that they had developed new collaborations and partnerships (5 sites) or had expanded existing programs (4 sites).

Recruitment Strategies

In Year 3, sites reported that their recruitment strategies balanced outreach to high school populations with outreach to admitted, incoming, and current student populations. Eight sites reported recruitment strategies that involved direct outreach to high school administrators, faculty, and students, with several reporting individual contacts, meetings and connections. Seven sites reported engaging in outreach to prospective, admitted, incoming, and current community college students. This recruiting included presence at campus orientation or registration events, inclusion of materials in admissions packets, and outreach via letters, phone, or email. Seven sites also reported engaging faculty in their recruitment efforts – some who visited high schools and some who made referrals or otherwise promoted SSA programs to their current students.

Participant Selection

Many sites have different criteria for different aspects of their SSA programs, with some being open access and others having more strict criteria. For programs with limited capacity (e.g., summer bridge programs), every site had an application process and most had some selection criteria. The most common criteria (reported by 8 sites) vetted prospective participants for their understanding and willingness to commit to the time and rigor of the program. The specifics varied and ranged from sites that simply indicated that students “had to commit” to sites that interviewed students to assess commitment to a site that required students to sign financially binding contracts. Other criteria for limited capacity programs included STEM interest/major, placement test scores, attendance at orientation sessions, or faculty recommendations. Only one site had a minimum high school GPA requirement for admission to summer bridge.

Outreach to Under-represented Populations

About half of sites reported efforts to recruit under-represented populations. Five sites reported coordinating recruitment with other campus programs or offices (e.g., LSAMP, disabilities office, Adult Basic Education). Four sites reported recruiting from high schools with high proportions of under-represented groups. Three sites each reported either engaging peer representatives from under-

represented groups in recruitment efforts or recruiting through community organizations that work with under-represented populations.

Readiness, Summer Programs, Developmental Math

When asked about their most successful SSA-related strategies to ready students for college or STEM fields in Year 3, sites most commonly listed summer bridge programs and mathematics preparation and support. Since most summer bridge programs explicitly include mathematics preparation or coursework, 11 sites in total reported that mathematics preparation, whether standalone or through a summer bridge program, was a key SSA readiness strategy at their site. Notably, the remaining four sites also supported mathematics preparation through SSA—whether through summer bridge, boot camps, embedded math tutors, or intensive accelerated coursework—but did not list these activities among the key strategies they used to ready students for college and STEM fields. This slight discrepancy may be due to the wording of the question and its place in the template.

Summer Programs

Nearly every SSA site offered summer programs that combined elements of STEM exploration, college readiness, and math preparation – often supported by tutoring and advising or coaching. Most of these sites (8) offered programs where at least one of these elements was a credit-bearing course. Five other sites offered 2-3 week non-credit (or 1 credit) programs that combined these elements. Mathematics preparation or coursework was part of most sites' SSA summer programs.

Five sites (the two remaining sites, plus three others) offered summer programs that focused primarily on either math preparation, STEM exploration, or both. Of the four sites that offered math-focused standalone programs, two offered accelerated, credit-bearing math courses and two offered non-credit refresher programs. The standalone STEM exploration programs at three sites included workshops to prepare students for their first college-level science course, hands-on laboratory workshops taught by 4-year college faculty at the 4-year campus, introductory interactive workshops for incoming community college students, and a workshop designed to teach students a new computer language.

Six sites reported that their early college activities were either integrated into their existing summer programming (i.e., high school students joined college students in the activities) or mirrored the elements of the college-level summer programming.

Developmental Math

Every site offered math preparation programs (non-credit), coursework, or math-focused tutoring as part of their SSA programming for incoming and current students. In addition to support for developmental math—offered by all sites—about half of sites also supported higher-level math through SSA, either by offering students tuition-free courses or scholarships, or by funding tutors who supported students across the spectrum of math options.

Math coursework or refresher programs were often part of SSA campuses' summer bridge programs, with five sites offering non-credit math refreshers and another four supporting math coursework as part of their summer bridge programs. Standalone math offerings were also common, with four sites

offering non-credit math refresher programs and another four sites offering math coursework for incoming and current students.

A third of sites included math preparation or coursework as part of their SSA Early College High School initiatives, with three offering non-credit programs, one offering a developmental math course, and one site that offered both options depending on students' placement.

Retention Strategies

Academic support, advising, and community building continued to be the top three retention strategies across SSA sites. Nine sites referenced support for a variety of tutoring and academic support strategies, including peer tutoring, faculty facilitated study groups, staffed math spaces, embedded classroom support, and math boot camps. Eight sites considered a variety of models of STEM-specific advising among their retention strategies, typically involving active progress checks and regular contact. Seven sites reported supporting student persistence through ongoing engagement. These strategies included STEM clubs and informal community-building activities, peer mentorship, STEM-specific space, and a slate of required activities tied to next-term scholarships.

Five sites worked to retain students through intensive engagement opportunities that often involved leadership roles. These opportunities included paid on-campus research internships, SSA support of a college robotics team, peer tutoring and mentorship, and a professional mentorship program.

Five sites reported that providing information about future STEM career and transfer opportunities helped motivate students to persist through completion.

Completion Strategies

The most commonly reported completion strategies across sites were building student and institutional connections to industry, transfer programming and alignment, and career workshops and fairs (each reported by 10 or more sites). Sites described two primary activities for building connections with industry: 1) student visits to local industries and/or industry representatives' visits to campus, and 2) cultivating relationships with employers through regular communication, course and skill alignment work, or advisory boards. MassBay continued its STEM mentorship program that connects students with STEM professionals.

Transfer programming was a bit more varied, and included campus visits to 4-year institutions, transfer workshops and fairs, transfer counseling/advising, and course alignment and degree transfer pathway development. Targeted workshops (e.g., resume and cover letter development, interviewing skills) were the most common career-oriented activity, but SSA also supported or hosted STEM-focused career fairs (or a STEM-focused section at such a fair) at a handful of sites, and a few sites also offered targeted networking opportunities between students and STEM professionals.

Two other strategies—support for placement in internships or research experiences and targeted STEM advising, coaching, or mentorship—were also commonly reported as SSA completion strategies (by 8 or 9 sites each). Support for internship placement ranged in intensity. Most of these sites offered counseling related to securing internships, and some placed students with employers or at 4-year institutions. A few sites supported students in on-campus internships. Massasoit, for example,

continued its intensive on-campus research internship program. As a completion strategy, sites reported a proactive practice of targeted STEM advising that included discussions of graduation and transfer as well as guidance around STEM-specific pathways or maps for degree completion.

Sustainability

Please describe your institution's efforts to make SSA programs and activities sustainable beyond the period of grant funding.

i. **Which efforts have been the most successful?**

ii. **What have been the biggest challenges?**

iii. **If not addressed above, please specifically discuss the sustainability of any stipends, scholarships, or in-kind incentives, and the sustainability of coordinator or support positions.**

Sites reported mixed progress toward sustaining SSA initiative elements at their campuses. Successes include seven sites where STEM student support staff (e.g., STEM advisor, STEM career specialist) have been or are anticipated to be institutionalized. Four sites reported program elements that have already been adopted by their institutions, including physical space, courses or workshops designed through SSA, and advising models. Five sites reported finding alternative sources of funding to support certain program elements, including external grants, in-kind donations of time from faculty and industry partners, work-study funds for students, and shared expenses with other campus programs and initiatives.

Many sites explained that sustaining the entirety of their SSA programs would be unlikely once grant funding ends. Instead, sites reported strategies to sustain particular SSA program elements. Seven sites reported collaborating with campus programs and offices to support SSA elements. Six sites reported pursuing outside funding, including several that were developing or had submitted NSF grant proposals. Five sites discussed building relationships with industry partners who might fund discrete elements of their SSA programs (e.g., career initiatives). Four sites were or had secured some foundation funding to provide STEM scholarships.

The challenges to sustaining SSA program elements reported by sites were varied. Nine sites referenced the challenge of limited resources, including not having the time to find and apply for external funding, difficulty selling current investment in resource-intensive elements of SSA programming for future sustainability, and overall declining enrollments and state funding to the colleges.

Sustainability – Integration and Integration Challenges

In what ways and to what extent have SSA activities been integrated into ongoing campus endeavors or other grant funded initiatives in Year 3? Please describe any challenges your institution has faced in integrating SSA activities into your college's other initiatives and programs.

Sites reported that SSA activities were well aligned with other campus endeavors or grant funded initiatives. Academic support, career readiness, and admissions and recruiting were the most common areas of collaboration. Eight sites reported partnerships between SSA and either college academic support centers or other grant funded initiatives to provide tutoring or academic coaching. Five sites provided other types of student supports through collaboration, including mentoring, infrastructure, and college readiness programming. Five sites reported collaborating on recruitment or admissions. Four sites reported supporting career and transfer readiness activities (including industry panels, internship placement, and workshops) through collaborative efforts. A few sites each reported other

ways that SSA had been integrated at their campuses, including the adoption of STEM or pathway-specific advising, participation by SSA students in campus service, the receipt of STEM scholarships by former SSA participants, development of new or more engaging STEM courses and curricula, and general alignment between SSA goals and those of other grant initiatives or campus strategic plans.

Sites mentioned a few challenges specific to the integration of SSA into other campus endeavors, including the time-intensive nature of building relationships and monitoring activities and challenges to communication and cohesion, such as friction over the singled out support of STEM.

Data Strategies

What strategies, if any, did you use in Year 3 to track SSA students for your own internal purposes?

SSA sites tracked a range of information about SSA participants for their internal purposes, including student participation in SSA activities, student experience data, and academic progress. Eight sites reported a variety of strategies to track student participation, including recording traffic via sign-in kiosks, gathering reports from service providers (tutors, career counselors, coaches), and developing ways of labeling SSA participants in campus-based databases. Seven sites reported gathering student experience data and program feedback. Seven sites reported tracking various indicators of students' academic progress, including GPA, progress in developmental math courses, and internship placements. Fewer sites reporting tracking impacts of SSA activities or students' plans/activities after leaving the program or community college. Five sites reported either tracking some kind of outcome data – retention or change in self-efficacy – or having plans to track impacts in Year 4.

Measurement Priorities

Does your site have any measurement priorities or plans beyond what DHE and UMDI are measuring at the state-wide initiative level? Please describe.

Two thirds of sites reported measurement priorities beyond the required statewide data collections. Most of these (8 sites) reported student outcomes at the site level, including retention, academic progress, graduation and transfer rates, and job placements. Three sites reported other measurement efforts, including the development of methods to measure the impact of workshops, club participation, and recruitment efforts; gauging participant satisfaction, programmatic effectiveness, and student interest; and understanding perceptions of the college's STEM programs by students, high school stakeholders, and employers.

Technical Assistance

Please describe any technical assistance or support needs you have from DHE.

Seven sites reported on technical assistance or support needs from DHE. Of these, most (5 sites) sought support for data collection and measurement, including assistance with designing measurement tools, clarifications on what and how data are to be reported, and financial assistance with data collection and reporting.

Early College Activities

If you did not already discuss any SSA-related Early College activities or programming at your institution in the sections above, please describe these activities here.

SSA Early College High School (ECHS) summer programs overwhelmingly reflected the same general patterns of activities that sites implemented with their new-to-college or new-to-STEM populations. These included social support, STEM exploration, career exploration, college skills, direct financial support, STEM coursework, academic support, and advising. The exception to this pattern was industry engagement and transfer programming, which fewer sites incorporated as part of their SSA ECHS programs. The details of local implementation varied. However, there was a relatively high degree of similarity in what elements sites reported including in their ECHS programs. Sites offered 1-6 week programs that combined elements of hands-on STEM exploration, career awareness, math preparation, and college readiness.

Year 4 STEM Starter Academy Site Visit Administrator Interview Protocol (1 hour)

Fall 2016 Site Visits

Draft 9/8/2016

General Information

Interviewee: Position:

Community College: Date/Time:

Pre-interview summary

(Based on previous data: Year 4 plans, Spring 2016 interviews, Year 2 site reports, Year 2 site visit data)

Brief description of SSA implementation at this site:

Key programmatic elements of implementation strategy at this school:

- Target populations and strategies for recruiting under-represented groups -
- Summer bridge program -
- Academic year programming and support -
- Experiential learning opportunities -
- Career exploration activities and support -
- Support for transition to 4-year institution -
- Faculty professional development -
- Cohort model? -
- Other -

Key successes:

Key challenges:

Unique features:

Site-specific follow-up questions:

Introduction [5 minutes]

- Thank you for taking the time to speak with me today.
- This interview will focus on your Year Four SSA activities. The purposes of this interview are
  - to understand the key elements of SSA at your institution in Year 4;
  - to capture your reflections on the successes and challenges of SSA implementation looking both backward; and, forward from the current moment; and,
  - to describe the SSA practices or strategies that are having the most success at your site.
- We understand that you are also in the process of preparing your Year 3 site report and there are some questions here that may seem to duplicate the questions in that instrument. However, we see this interview as providing a chance for you to reflect on those activities, and perhaps to explain or describe more than you can in a formal report. Along those lines, we will share findings from this interview with DHE and include what we learn in our reporting. Generally, we try to report on your reflections anonymously. Since there are a limited number of SSA sites, we will be unable to report information about your program in a completely confidential manner. However, in the event that you would prefer for a particular response to remain confidential, please let me know, and we will either not report on it publicly or work to maintain your anonymity in our reporting.
- Ask for permission to record the interview **both before and after turning on the recorder**.

INTERVIEW QUESTIONS

Year 4 Overview **[25 minutes]**

1. Based on your Year 4 plans, here is what we understand your SSA activities or programming will be in Year 4:

   Complete before interview.

   a. Am I missing anything? Or, are there things I need to adjust?

   Probes:
   b. Activities or services for *continuing* SSA students (Students who had started with SSA before Fall)
   c. Activities or services for *new* SSA students [new to SSA program(s)]
   d. Activities or services for Early College students
   e. Probe for activity in model areas;
      i. Recruitment
      ii. Readiness
      iii. Retention
      iv. Completion – both workforce and transfer.

2. We know that fall might not be a time of peak SSA activity at your campus, but would you please tell me which, if any, of those fall activities you consider to be **key elements** of your SSA programming?

3. Your Year 4 plans indicated that you've made the following changes to your SSA plans as you moved into Year 4: _____. Is there anything else you would like to add to that list? Why did you make those changes?

4. Our understanding is that your SSA programs and activities in Year 4 will focus on serving _____ populations. Is that correct? Why do you focus on those populations?

5. Our understanding of how you select your SSA participants is: _____. Is that about right or are we missing something?

a. What do you see as the characteristics of students who are most and least successful in your SSA programs?

b. Have your site's SSA activities had any unintended positive outcomes or negative consequences for students? Please describe.

6. We understand that your efforts to address the sustainability of your SSA programs include: _____. Are there other efforts you are making toward increasing the sustainability of your SSA programs that you want to add?
   a. What have been the greatest challenges to your work to enhance the sustainability of SSA programs and activities?
   b. What factors have supported your efforts to enhance the sustainability of SSA programs and activities?

Reflections **[25 minutes]**

7. Are there practices or strategies employed in your SSA programming that have become the signature practices for your SSA program – things you would like your SSA program to be known for? Why? What are they accomplishing?

8. Are there areas of the SSA model, whether recruitment, readiness, retention, or completion, where you feel you are having the most success? What are your most successful practices in those areas?

   a. Could you share a story or example of a student experience that illustrates that success?

9. What evidence would you say best demonstrates the success you are having in your SSA programs?

   Probe:
   a. What feedback about your SSA programs have you received from various stakeholders (including SSA participants, parents, campus administrators, community members, etc.)?

   b. Do you feel that you have sufficient institutional capacity to capture and analyze relevant SSA student performance data?

10. How would you characterize your institution's overall experience with *implementing* SSA at this point? Specifically:
    - What have been the most important facilitators of success? When we spoke in the spring, you mentioned X, X, and X. Is there anything you'd like to add to that list now??
    - What have been the biggest challenges? When we spoke in the spring, you mentioned X, X, and X. Is there anything else you'd like to add to that list now?

11. What, if anything, might you change about your implementation of SSA in the future?

12. What, if anything, about DHE's facilitation of this grant would you like to see done differently in the future?

About today's observations **[5 minutes]**

13. *Ask these questions if the interviewee is familiar with the activities (to be) observed during the visit.*

If interview takes place <u>prior to</u> observation:

Today, we plan to observe SSA in action. What specifically will we be observing?

   a. To help us understand the program and share its promising practices with DHE and other sites, what do you think are some of the most important things we should be looking for during our observation?

   b. Are there major components of your SSA program that we will not observe, or that are difficult to observe but important to understand?

If interview takes place <u>after</u> observation and interviewee was present or is familiar with the activity:

Today, we observed SSA in action here. [*Briefly describe observation*.]

a. To help us understand the program and share its promising practices with DHE and other sites, what do you think were some of the most important things we saw during our observation?

b. Are there additional major components of your SSA program that we did not observe but that you think are important for us to understand?

14. Is there anything else you'd like to add?

Thank you for your time.

SSA Site Visit: Student Interview or Focus Group Questions – Year 4, Fall 2016

Welcome: Thank you for coming to this focus group today. I know you are all busy and your time here is very much appreciated.

Evaluator's Introduction: I work for the UMass Donahue Institute – We are external evaluators who have been hired by the Department of Higher Education to help evaluate the STEM Starter Academy Initiative (which I will refer to as SSA). My goal is to get your feedback on SSA programs.

Explanation of focus group: I would like to hear from as many as you as possible. Don't feel like you have to answer all the questions, but do participate to the extent you are comfortable. It's okay to respond to one another, and it's okay to agree or disagree with one another. It is very likely that you have different experiences. The point here is to get as much of a complete story about SSA – from your unique perspective – as is possible.

Confidentiality: I will include a summary of this discussion in reports I write later this fall and winter. I won't use your names and will not identify you specifically, but I might quote you anonymously. For example, I might write something like, "one student found tutoring to be very helpful. She said, 'sometimes I just need a little bit of help when I'm really stuck. After that, I can usually figure it out.'"

Also, please respect people's privacy once we leave this group. During the group, we may mention faculty and other SSA students by name (their privacy will also be preserved in the report). Our discussion is confidential. Is that clear?

Recording: I will be recording the discussion because it would be impossible for me to accurately write the whole the thing down. I will be transcribing the recording, and one or two of my colleagues will also review the transcript. No other people will hear or see the whole discussion. Does everyone here agree to be recorded?

I will turn on the recorder now and let's start.

I am here with students from _____Community College. This is just a reminder that this conversation is being recorded.

Questions:

1. Let's first go around the room quickly [depending on group size]: tell me if you're participating in a STEM Starter Academy program now or if you have participated in the past, and which programs/activities you participated in.

2. What are the ways that being a part of SSA has helped you?

    a. How do you think your college experience would be different if you had not participated in SSA?

3. What are the best things about the STEM Starter Academy program? Can you give me an example?

4. What do you find the most difficult about the SSA program? Can you give me an example?

5. I'm interested in knowing if participating in SSA has changed any of your ideas about STEM:

    a. Did any of you switch into or switch between STEM majors because of SSA? Has being involved with SSA changed your ideas about STEM majors?

    b. Are any of you considering different job or career possibilities than you were before you participated in SSA? Tell me about that.

    c. Has SSA helped any of you prepare to move on in your career or academic plans? How so?

6. Do people who participate in SSA know each other here? Do you do anything together (e.g., study, have meetings, have classes, etc.)? In what ways is this helpful or not?

7. Some of you might feel that SSA is a good fit for you and some might think it isn't as good a fit – I'm interested in knowing why.

    a. First, for those of you who feel that SSA *is* a good fit for you – can you tell me why?

    b. For those of you who feel like SSA has *not* been a good fit for you – can you tell me why?

8. If you were in charge of this program, what would you change about it? Is there some kind of support that would make your experience better?

9. How do you feel about your access to help when you need it? Who do you turn to for help with career, transfer, or classes?

10. If you were going to tell one of your friends about the STEM Starter Academy program here – how would you describe it?

11. Is there anything else you think we should know about the STEM Starter Academy program here?

Specifics to follow up on if not mentioned:

STEM Starter Academy – Selected site visits – Year 4

Observation Protocol – Fall 2016

Cover Page – To Be Completed Before Observation

General information:

College _____ Date _____

Activities observed (*more than one might be observed simultaneously*):

- ☐ STEM credit courses
- ☐ Non-credit or student success courses
- ☐ Boot camps or prep workshops
- ☐ Interest workshops or activities
- ☐ Self-paced/computer-aided classes
- ☐ Cohort activities
- ☐ Students receiving support services
- ☐ Peer mentoring
- ☐ Study groups
- ☐ Enrichment activities (list)
- ☐ Research experiences
- ☐ Internships
- ☐ Online advising or mentoring systems
- ☐ Dual enrollment courses
- ☐ Faculty PD/meeting
- ☐ Clubs
- ☐ Other:

Pre-Observation Summary

- Brief description of SSA program at this site.

SSA Model Areas

- Recruitment:
- Readiness:
- Retention:
- Completion:

Strategies

- Intensive Experiences
- Summer bridge program description, schedule, elements
- STEM engagement
- Integrated support systems
  - Advising, tutoring, financial support
- Building student connections/cohort
- Academic Support
- Career Exploration
- Completion support
  - Transfer focused
  - Workforce focused
- Faculty professional development?
- Academic-year programming and support
  - STEM-specific intrusive advising
  - STEM tutoring

- Financial support

Site-specific things to look for during the observation:

STEM Starter Academy – Selected Site Visits – Year 4
Observation Protocol – Fall 2016

Notes:

- The goals of this observation are to:
  - Develop a deeper understanding of how SSA programs are impacting students
  - Gather the perspectives of campus stakeholders about SSA
  - Collect information about promising programs and practices
  - Capture the character and details of site-specific program implementation in order to offer illustrative examples of the impact of SSA on students in a way that is translatable to external project stakeholders

General

- Briefly summarize the observation in general.
  - What activities were observed (identified on page 1)? For how long was each type of activity observed?
  - What was the purpose of the event being observed?
  - How many people were involved?
    - # of students _____
      - Characteristics (if available) such as grade levels, demographics, etc.?
      - If time allows, ask instructor how many students should have been in attendance.
    - # of staff/administrators _____
      - What were the roles of the staff/administrators observed (e.g. instructor, tutor, advisor, mentor, coach, speaker, administrator, etc.?)
  - In general, what was the level of engagement of the people involved?
  - What was unique and/or particularly interesting about what was observed?
  - What was observed that would be helpful to others who wanted to create a similar program?
  - Did your observations give you any insight into program sustainability? Describe.

Program Dimensions

Describe your observations related to SSA Model elements:

- Target populations/student selection –
- Experiential learning opportunities (including research experiences, experiential curriculum design)
- Career exploration activities and support
  - Support for transition to industry/career
- Support for transition to 4-year colleges
- Cohort model? What is the common experience for SSA students at this institution?

- Faculty professional development?
- Academic-year programming and support
    - STEM-specific intrusive advising
    - STEM tutoring
    - Financial support
    - Other student support services

Activities and Support

- In what ways does this SSA program provide:
    - Specific or targeted support for student retention?
    - A specific or targeted emphasis on college readiness?
    - A specific or targeted emphasis on STEM career awareness?
    - A specific or targeted emphasis on options for completion (transfer to 4-year colleges, transfer to career with 2-year degree or certificate)?
- What learning activities are observed?
    - What pedagogical strategies are used?
    - Describe participants' engagement in the activities.
    - Approximately how many students/staff are in attendance?
- What enrichment or retention-related activities are observed?
    - Describe the activities
    - Approximately how many students/staff are in attendance?
    - Describe participants' engagement in the activities.
- What student supports are observed?
    - Describe the activities
    - Approximately how many students/staff are in attendance
    - Describe participants' engagement in the activities
- What other activities are observed?
    - Describe the activities
    - Approximately how many students/staff are in attendance
    - Describe participants' engagement in the activities
- Resources and support

  - What physical resources are available to students? (e.g., technology, space)
  - What student supports (academic, social, emotional, etc.) are available to students?

- Did you observe anything that suggests student/teacher/administrator successes, challenges, desires, etc.?

Follow-up

- Are there specific things you had hoped to observe but didn't have the opportunity?

- Does this observation leave you with follow up questions? If so, list here:

- Based on this observation, are there specific things we should request to observe at a later date?

Selected Site Visits – Fall 2016

UMDI evaluators visited six SSA grantee sites in Fall 2016 (Bristol, Bunker Hill, Cape Cod, Massasoit, Middlesex, Quinsigamond). At each site visit (which lasted, on average, about 4 hours), evaluators observed program activities, conducted focus groups with a subset of SSA participants, and interviewed program staff (typically a program coordinator and an administrator). Site visit data collection instruments (interview, focus group, and observation protocols) were developed in collaboration with DHE and focused on Year 4 activities and reflections on SSA implementation to date. Instruments are available in Appendices P, Q, and S and information about site visit selection is in the methods section of this report.

Only a subset of SSA sites was visited in the Fall of Year 4. (Sites not visited during the Fall of 2016 will be visited during the Summer of 2017.) Consequently, this section does not draw broad conclusions about the SSA initiative, but rather presents brief preliminary snapshots of the sites visited and the character of their SSA programs and activities. A few preliminary observations about similarities across the visited sites is presented first, followed by brief site snapshots.

Similarities across sites – preliminary observations

- Formal and informal advising is an important strategy at all of these sites.
- Administrators at every site noted the benefits of having STEM-specific personnel to support students, advisors, coordinators, and career specialists. Students echoed these sentiments in focus groups— describing the importance of having relationships with these staff.
- Building relationships and a sense of community among STEM students as well as building relationships between students and faculty/staff was another common emphasis.
- The benefits of integration across programs and offices on a campus was a common theme in administrator's descriptions of their programs.
- In varying ways, SSA coordinators at all of these sites were actively working to create more structured pathways for STEM students to transfer to 4 year schools and/or transition into STEM careers.
- In focus groups, students described feeling a sense of community and supported by peers and staff. They appreciated STEM-specific advising and career exploration, and valued academic supports such as tutoring, supplemental instruction, and free math classes.

Site Snapshots

Bristol: Coordinated recruitment, advising, academic support, and STEM exploration.

Through SSA, Bristol has been working on creating integration and cooperation on campus to leverage resources to support STEM students. Through a unique partnership between SSA and Career, Vocational, and Technical Education (CVTE), a college advisor goes to high schools to administer placement tests and provide on-the-spot advising with high school students interested in the college, informing students of SSA readiness opportunities. Bristol's readiness programs (including a spring learning community and a summer bridge program) pair STEM coursework with college skills. A week-long summer STEM bootcamp for incoming students is designed to build community and interest in STEM. The college has revised degree pathways to make it easier to identify STEM interested students and pilot tested a new model to link these students with discipline-specific advising. SSA also supports peer tutoring and Supplemental Instruction and STEM career focused events. The college created an Associate Dean for STEM position to coordinate these efforts. Along with the STEM Advisor, this Associate Dean provides formal and informal academic, transfer, and career advising. Students reported that this advising, the SSA-supported tutoring, and their relationships with staff and peers were key to their persistence.

"Drop in tutoring is the best thing you can ask for … we spend hours in there. Without this we wouldn't pass our classes…we rely on each other." Bristol SSA student

"The field trips to industries are very helpful because they allow us to understand what the industry is expecting of us and how we can shape ourselves to meet the requirements of the industry." Bristol SSA student

"It is more like a family. … Everyone is together. We all know each other...We all know what classes we are [each] taking, what we have issues in, what we struggle in, what we can help each other with." Bristol student about STEM community

Bunker Hill: Science readiness and accelerated math.

At Bunker Hill, SSA provides opportunities for STEM interested students to build relationships with faculty and peers, learn about STEM career and transfer options, and accelerate their progress through developmental math. Non-credit three day workshops taught by STEM professors before the beginning of the semester build student's understanding of what to expect in their STEM courses, their confidence, and their relationships with STEM faculty. Over the summer students have the opportunity to attend free, intensive, STEM-contextualized accelerated math clusters. These clusters help students advance toward courses in their major, build peer relationships, and have had high passing rates. SSA also supports faculty facilitated study groups in various STEM disciplines that are held in a STEM-specific study space. The STEM coordinator offers both formal and informal advising, and coordinates a STEM learning community with guest speakers and staff from other parts of the college that focus on STEM careers or transfer. Students appreciated the free opportunity to accelerate their progress in math, the relationships they built with peers through intensive contact, and the relationships they built with faculty.

"Being here with the math cluster was the first time that I ever made any actual connections with people … Now I have 3 other people from my math cluster in classes this semester … I have never had a school friend [before this]. It's really nice. I don't think I would have made relationships like that without being in [this program]."
Bunker Hill SSA Math Cluster Participant

"All the degree programs are set up for typical students… so missing any link in that chain of classes … sets you back by at least a semester. So, for someone in an atypical spot like me … being able to condense two semesters worth of math into a summer was absolutely invaluable."
Bunker Hill SSA Math Cluster Participant

Cape Cod: Active advising and community building.

Cape Cod's SSA program focuses on moving students to completion by linking students to each other, to the campus, and to a network of STEM-focused advisors and support. Summer bridge participants (incoming community college students) individually take a free placement- and pathway-appropriate math course. At the same time, they participate as a cohort in a STEM-focused college 101 course taught by the STEM advisor. During this course they build connections to each other, to the advisor, and to the campus. During the academic year, the STEM advisor and the SSA coordinator maintain "constant communication" with STEM students by checking in frequently, hosting community-building events, and requiring regular advising meetings. Like other sites, Cape Cod supports a classroom-embedded peer-tutor model (Supplemental Instruction, SI). They report better retention in SI sections and also find that having an SI linked to a course encourages instructional innovation and facilitates the engagement and retention of the tutors themselves. Coordinators and administrators have been working with 4-year institutions and industry to develop and align transfer pathways. They are seeing more students earning 30 credits over the course of the year (fall through summer) and more STEM majors enrolled in courses that are on an aligned pathway. They offer scholarships that require participation, academic achievement, and advising. Students expressed appreciation for the hands-on approach to advising. They feel known, cared about, and supported.

> "Before I met [the STEM advisor] I wasn't thinking science or math. I was just going in a general direction. I didn't have a direction. I now I have something that I can say I want to do 20 years down the road."
> Cape Cod Student

> "I feel more like I am a name and not just a number.... I actually get to communicate and network and get to know people and teachers and professors and tutors … and have them remember me. "
> Cape Cod STEM student

> "I love [the STEM college 101 class]. … It has helped me so much. I am so organized and I have everything on track. I used to be behind the eight ball most of the time … but now, with the tools that [the STEM advisor] gave me to keep on track … I am enjoying [school] a whole lot more and I am very happy to be here and just continue pursuing my education"
> Cape Cod SSA student

Massasoit: Preparing students beyond academic skills.

Massasoit's SSA program focuses on student engagement and building skills useful in both academic and career pursuits. The research internship program is Massasoit's signature program. STEM-interested students work as a team to carry out an ongoing research project. Interns earn a stipend and are held to high standards in terms of workplace soft skills (e.g., attendance, team work, accountability and communication) for which they are given professional performance reviews. Entry standards are deliberately kept low in order to make the opportunity widely accessible and students are mentored and advised by the STEM coordinator. Interns who remain engaged are given the opportunity to move into peer leadership roles, which enhances their experience while providing mentorship to other students. Student interns expressed appreciation for the professionalization opportunity and reported gains in self-efficacy and engagement as a result of their participation. Massasoit also has a cohort or community building element through their STEM scholars program, which is like a STEM club where students learn about STEM fields, get advice, and build relationships. Students have the option to enroll in STEM scholars as a non-credit course to have their participation show on their transcript, which requires they meet certain participation criteria. Massasoit's summer bridge program focuses on math readiness and STEM engagement for incoming students.

> "I used to ... as soon as my classes were done, I was like 'boom! I'm out'. And now that I am in this community, I spend time here. I'm doing research. I'm being in the building. I'm being among scientists and really being involved."
> Massasoit SSA Research Intern

> "We are treated as professionals. We treat this as a job—as our future job. So, we are held to high standards. I think that prepares us for our future career"
> Massasoit research intern.

Middlesex: Centralized support community.

At Middlesex, SSA supports and is run through a centralized resource space (the Pathways Center) for STEM and health students. The Pathways Center provides a space for students to gather, study, or receive academic support (including group study sessions, SI facilitated sessions, and tutoring sessions); receive informal and formal advising by PWC staff; and prepare for career and transfer with the support of a dedicated career specialist. The focus is on building community – creating a physical and social space that helps students feel welcome and empowered in their own academic paths. Middlesex's summer programming focuses around readiness – a two-week summer bridge introduces students to campus resources and provides opportunities to explore STEM field options. Free math coursework is offered over the summer in algebra and pre-calculus/trigonometry with embedded academic, peer, and social support. Students who complete and register for the next level of math have a chance to earn a scholarship. In Year 4, Middlesex will pilot a new transfer bridge program in partnership with UMass Lowell. They have gained better access to student-level data over time (through their increased collaboration with the IR office) and this has helped them make data-driven decisions about their programming. Students appreciated the support and sense of community at the Pathways Center, the formal and informal advising, free math preparation, academic support, and help preparing for careers.

> "Coming into this environment [at the Pathways Center] … makes me feel like I do have a place. … I'm not to be counted out because I'm a minority, I come from an impoverished family, I'm a woman. I can study [science] if I want to. And I'll be successful … if I take advantage of the services that are here."
> Middlesex Pathways Center Peer Mentor

> "They were keeping track with how I was doing in the classes and that is really cool because no one was asking how you are doing in the classes. No one cares about that, so as a new student it is cool that someone worries about us and how you plan to do your classes during the semester."
> Middlesex Pathways Center Participant

> "It's like a big STEM-y hug".
> Middlesex Student

QCC: Integrating supports for STEM students into existing systems.

QCC has used SSA to infuse supports for STEM students into existing systems on campus. In Year 3, QCC added part-time STEM advisors, a STEM career placement and transfer counselor, and a STEM recruiter. SSA also increases capacity for academic support – supporting existing tutoring centers and introducing group tutoring sessions (a student request) in the new QuEST building, where most STEM courses take place. In addition to group tutoring, the STEM Centre in this new building is used to bring supports to students, including workshops on career and transfer. Students also use this space to gather and study. In Year 3, SSA supported sending QCC students to the undergraduate research conference at UMass Amherst. Through SSA, QCC also offers a two-week STEM focused college readiness program over the summer at both their Worcester and Southbridge campuses. The program includes a week-long developmental math boot camp and a week of workshops on STEM topics, college success skills, writing, and opportunities to become familiar with campus resources and pathway options. Students expressed particular appreciation for the introduction to the college and STEM field options. The college recently developed new transfer-oriented liberal arts STEM degrees that are aligned with programs at their common transfer partners.

> "[The summer bridge] was really helpful. It gave me an idea of what is there in technology and science. So it's also helping me with my major and what I want to do. It gives me a start – an idea of what I would need or what to work on."
> QCC Student

> "This was my first time working as a team on a computer science project, which was really exciting for me… [at] the research conference at UMass, one of the best moments I remember was just seeing all the other students from different colleges … all of them together and it felt as if we were all on the same team working together to make innovations to help the future."
> QCC Computer Science Transfer Student

STEM Starter Academy, DHE Interview, October 2016

Perspectives on Year 4 and Reflections on Year 3

Introduction

- Thank you for taking the time to speak with us today.
- The purpose of this interview is to deepen our understanding of what's happening with the STEM Starter Academy Initiative. In particular, we're interested in DHE's perspectives on Year 4 implementation so far, and any developments in your vision moving forward, as well as any reflections on the second half of Year 3. We would also like to hear about lessons learned by DHE that you think would be most important to share with others who are trying to do similar work.
- Findings from this interview will be included in our Year 3 Annual Evaluation report and possibly included in other products from the evaluation. Since you are our only DHE interviewee(s), we will be unable to report information from this interview in a confidential manner. However, in the event that you would prefer for a particular response to remain confidential, please let us know, and we will honor your preference for confidentiality.
- Ask permission to use recorder.

Reflections on program implementation in Year 3 and Year 4

1. We last interviewed you near the middle of Year 3 (in January). At that time, you highlighted successes in Year 3 including:
    - Improved expenditure reporting from sites (which gave DHE a better understanding of the sustainability and institutionalization status of SSA)
    - Campus engagement in working groups – particularly one focused on "post-SSA experiences"
    - Emerging conversations at the state level about SSA's role in a larger continuum of activities that support students from high school through four-year programs.

    a. Since that time, have there been other notable successes of the SSA initiative for DHE and for the sites that you would like to mention?

    b. What factors have contributed to your success as facilitators of SSA implementation?

2. During our interview, you also identified some challenges and areas for continued attention including:
    - Helping campuses understand and manage data collections for SSA
    - Communicating the value of the initiative to a broader community (beyond the group of those already deeply invested)
    - Continuing to improve communication between DHE and sites
    - Helping to connect and integrate SSA programs and other initiatives (including the regional PKAL network and early college initiatives)

    a. Since our January interview, have you been able to address any of these challenges?

b. Have there been other major challenges of the SSA initiative for DHE and for the sites since our last interview? How have these challenges been overcome and midcourse corrections undertaken?

3. We are a couple months into the fourth year of SSA program implementation. Are there any major differences in strategy or implementation this year (for DHE or for the sites)?

4. Since January, what key decision points has DHE faced in terms of providing program support and facilitation for SSA?
    - Possible follow up (if not already addressed): how were these decisions resolved? What do these decisions reflect about DHE's priorities for the SSA initiative?

Reflections on Sites

5. During our last interview, you said that sites' Year 3 plans reflected clear movement toward the program model and a greater emphasis on completion strategies (career, transfer, job placement). Looking back at Year 3, do you have any thoughts about how sites carried forward these plans?

6. You have recently reviewed sites' Year 4 plans. How did the plans you received from sites align with your expectations? Were there any notable patterns across sites?

7. Reflecting on the first three years of the initiative, what are the practices or strategies that have emerged from SSA that you consider to be the most promising in terms of contributing to the achievement of the initiative's goals?

    a. Can you provide a few examples? What suggests to you that these are promising practices?

    b. Have you identified sites which might serve as leaders or role models for practices you consider to be promising?

Looking forward

8. What lessons have you learned from the facilitation of this initiative that you will carry forward?

9. What is your vision for this initiative moving forward in Year 4 and into the future?

    a. Do you plan to adjust the way DHE is supporting the implementation of the SSA initiative? In what ways?

    c. How do you feel about the prospects for sustainability of the various pieces of this initiative beyond the funding period? What leads you to think this?

Concluding items (if time allows)

10. Do you have any feedback on the evaluation that you would like to share?

11. Have there been any important recent developments at any of the SSA sites that the evaluation team should know about?

12. Is there anything we haven't discussed that you think would be important for us to know as the evaluators of the SSA initiative?