Companion Document to the:
Labor Market Information (LMI) Instructions & Guidance

Delaware Department of Education

Appendix: Labor Market Information (LMI) Review

Delaware CTE Program of Study Application

Table 1: LEA Information

(see instructions on page 2, LMI Instructions & Guidance Document)

Career Cluster:	Agriculture, Food, and Natural Resources
Career Pathway:	Plant Systems
CTE Program of Study:	*Plant Science*
High School and LEA Name:	
County:	

Table 2: Labor Market Information (LMI) Benchmarks by Geographic Region

(see instructions on page 2, LMI Instructions & Guidance Document)

Region	Employment 2016	Employment Change 2014-24	Employment Growth 2014-24	Avg. Wage 2016
United States	140,400,040	9,788,900	6.5%	$49,630
Delaware	440,760	37,150	8.1%	$50,930
District of Columbia	702,380	46,040	6.0%	$80,950
Maryland	2,640,900	504,540	18.2%	$56,120
New Jersey	3,955,350	275,310	6.5%	$56,030
Pennsylvania	5,747,020	345,920	5.7%	$47,540
Virginia	3,760,550	368,050	9.3%	$53,090

	Table 3: LMI by Career Cluster & Pathway *(see instructions on page 4, LMI Instructions & Guidance Document)*					**2012-2022**			
Cluster Code	**Cluster/Pathway Title**	**Middle Skill**	**High Skill**	**High Wage**	**High Demand**	**Employment 2016**	**Employment Change 2014-2024**	**Employment Growth 2014-2024**	**Average Wage 2016**
1	**Agriculture, Food, and Natural Resources**	**X**				**3533**	**46**	**0.5%**	**$57,142**
	Rank Select Career Cluster by the Following Categories ->					*(15 out of 16)*	*(16 out of 16)*	*(16 out of 16)*	*(6 out of 16)*
1.02	Plant Systems		X			367	-103	-5.9%	$41,955
	Rank Select Career Pathway by the Following Categories ->					*(4 out of 7)*	*(7 out of 7)*	*(6 out of 7)*	*(3 out of 7)*
1.02	Plant Systems – Mid-Atlantic States		X			24,720	-390	-0.4%	$39,480
1.02	Plant Systems – United States		X			433,810	-33,700	-5.0%	$31,291
1.01	Food Products and Processing Systems	X		X		225	-19	-6.7%	$34,382
1.03	Animal Systems					816	55	2.6%	$23,330
1.04	Power, Structural & Technical Systems	X				154	26	6.0%	$35,704
1.05	Natural Resources Systems	X	X	X		422	-15	-2.0%	$193,276
1.06	Environmental Service Systems	X		X		1549	109	8.0%	$46,903
1.07	Agribusiness Systems	X					-7	-.02%	

Table 3: LMI by Career Cluster & Pathway (Questions/Analysis)

(see instructions on page 5, LMI Instructions & Guidance Document)

1. How does the employment, the employment change, the employment growth rate, and the average wage for the identified career cluster compare to LMI for other clusters in the State of Delaware? Is the career cluster rated as high wage and high demand?

   The Agriculture, Food, and Natural Resources Career Clusters rank in the top six (6) for average wage. The career cluster rating is Middle Skill.

2. How does the employment, the employment change, the employment growth rate, and the average wage for the identified career pathway compare to LMI at the cluster level? How does the identified pathway level LMI in Delaware compare to the pathway level LMI in the

Mid-Atlantic and/or the United States? How does the identified pathway level LMI in Delaware compare to the other pathway level LMI in Delaware?

Employment growth rate is significantly higher at the career pathway level than at the cluster level, while the employment and average wage are lower. Salaries, employment growth, and change in employment increase as you move out of the state of Delaware and into the Mid-Atlantic and larger United States region. Related pathways have lower wage potential, but show slightly higher employment, employment change and employment growth numbers within the state of Delaware.

Table 4: LMI by Standard Occupation Code (SOC)
(see instructions on page 6, LMI Instructions & Guidance Document)

						2012-2022			
SOC Code	**Occupation Title**	**Middle Skill**	**High Skill**	**High Wage**	**High Demand**	**Employment 2015**	**Employment Change 2014-2024**	**Employment Growth 2014-2024**	**Average Wage 2015**
19-1022	*Microbiologist*		X			160	10	3%	$50,340
19-1013	*Soil & Plant Scientist*		X	X		80	0	6.5%	$48,110
49-9069	*Precision Instrument and Equipment Repairers, All Other*	X		X		110	0	2.8%	$61,400
37-1012	*First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers*	X		X	X	510	40	8.3%	$51,360
37-3011	*Landscaping & Grounds Workers*				X	3840	300	8.0%	$26,230
11-1021	*General & Operational Managers*		X	X	X	4630	320	6.9%	$120,370
25-9021	*Farmland & Home Management Advisors*		X	X		190	10	2.6%	$57,520
19-4021	*Biological Technicians*		X	X		90	0	0	$43,300
27-1023	*Floral Designers*	X				150	10	1.3%	$23,090
19-4099	*Life, Physical, and Social Science Technicians*	X				140	10	5.7%	$51,530

Table 4: LMI by Standard Occupation Code (SOC) (Questions/Analysis)

(see instructions on page 7, LMI Instructions & Guidance Document)

3. How closely related to the program of study are the identified occupations (SOCs)?

   The Plant Science program of study is a three course Career & Technical Education (CTE) instructional program designed to provide students with knowledge of plant growth and reproduction, as well as the use of plants for food, fiber, and ornamental purposes. The program prepares students for a variety of careers including agronomy, ornamental horticulture, biotechnology, forestry, soil science, and turf management. The SOCs listed in table 4 are directly related to the program of study.

4. Are there adequate state-level projected job openings or employment growth projections at the occupation level to justify starting a new program of study? Do the occupations related to the program of study rank as high skill, high wage and/or high demand?

   The number of job openings projected for the cluster and pathway as well as the related SOCs will support a plant science program of study. All related SOCs and the cluster and pathway are rated as either middle skill, high skill, high wage, or high demand jobs.

Table 5: LMI Supply Indicators by Secondary & Post-Secondary Levels

(see instructions on page 8, LMI Instructions & Guidance Document)

Program Code (CIP)	Program (CIP) Title	School	Program Completion/Enrollment 2012-13	2013-14	2014-15	2015-16
Total Secondary Programs of Study			1528	1705	1765	1612
1.02301	Plant and Horticultural Science	Appoquinimink High School/Appoquinimink	2	22	31	30
1.02301	Plant and Horticultural Science	Middletown High School/Appoquinimink	43	59	54	38
1.02301	Plant and Horticultural Science	Caesar Rodney High School/Caesar Rodney	60	62	52	45
1.02301	Plant and Horticultural Science	Cape Henlopen High School/Cape Henlopen	28	30	29	32
1.02301	Plant and Horticultural Science	Dover High School/Capital	102	0	0	0
1.02301	Plant and Horticultural Science	Christiana High School/Christina	266	355	524	279
1.02301	Plant and Horticultural Science	Penn High School/Colonial	360	366	180	152
1.02301	Plant and Horticultural Science	Delmar High School/Delmar	61	129	141	112
1.02301	Plant and Horticultural Science	Indian River High School/Indian River	83	91	75	75
1.02301	Plant and Horticultural Science	Sussex Central High School/Indian River	103	139	208	179
1.02301	Plant and Horticultural Science	Lake Forest High School/Lake Forest	0	0	98	0
1.02301	Plant and Horticultural Science	Laurel High School/Laurel	138	0	0	137
1.02301	Plant and Horticultural Science	Milford High School/Milford	82	120	30	45
1.02301	Plant and Horticultural Science	Conrad School of Science	0	0	0	225
1.02301	Plant and Horticultural Science	Thomas McKean High School	0	0	40	74
1.02301	Plant and Horticultural Science	Seaford High Sschool/Seaford	109	149	173	93
1.02301	Plant and Horticultural Science	Smyrna High School/Smyrna	76	89	115	72
1.02301	Plant and Horticultural Science	Woodbridge High School/Woodbridge	15	94	15	24
Total Post-Secondary Programs of Study			164	183	176	205
26.0101	Biology/Biological Science, General	DTCC	6	12	10	17
26.0101	Biology/Biological Science, General	University of Delaware	133	122	124	137
26.0101	Biology/Biological Science, General	Delaware State University	6	20	17	31
26.0101	Biology/Biological Science, General	Wesley College	3	1	5	3

41.999	Science Technologies/Technicians	DTCC	6	8	4	5
1.0601	Applied Horticulture/Horticulture Operations	DTCC	3	2	3	4
1.0605	Landscaping and Groundskeeping	DTCC	5	7	7	6
1.0607	Turf and Turfgrass Management	DTCC	2	4	2	1
15.0499	Electromechanical and Instrumentation and Maintenance Technologies/Technicians, Other	DTCC	0	2	1	1
15.0403	Electromechanical Technology/Electromechanical Engineering Technology	DTCC	0	5	3	0

Table 5: LMI Supply Indicators by Secondary & Post-Secondary Levels (Questions/Analysis)

(see instructions on page 9, LMI Instructions & Guidance Document)

5. How is the secondary program of study articulated to or in any way related to the identified post-secondary program(s)?

   The plant science program of study is a broad program that connects to various related two- and four- year institutions of higher education. Specifically, the plant science program of study will prepare students for related study in agronomy, ornamental horticulture, biotechnology, forestry, soil science, and turf management as well as plant science post-secondary programs.

6. How does the annual completion data at the secondary and post-secondary level compare to the projected career pathway-related projected job openings in Table 4?

   As illustrated by the number of enrolled students, there is high interest in plant science programs at the postsecondary level. Therefore, a plant science program of study at the secondary level will better prepare students with the skills and knowledge to enter post-secondary programs. This work will lead to students achieving articulated credit while in high school and lessening the amount of time required to enter the workforce.

Table 6: Other LMI Data Including Real-Time LMI (Questions/Analysis)

(see instructions on page 10, LMI Instructions & Guidance Document)

7. Are there additional LMI data (demand & supply) at the local, county, state, or Mid-Atlantic region that support starting a new program of study in this pathway? This includes additional occupations for which there is not an SOC, any other analysis of LMI data, and any additional information on demand & supply factors that influence employment which can include real-time labor market information.