

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: | Science Technology Engineering & Mathematics |
| Career Pathway: | Science and Mathematics |
| CTE Program of Study: | Biomedical Science (PLTW) |
| High School and LEA Name: |  |
| County: |  |

**Table 2: Labor Market Information (LMI) Benchmarks by Geographic Region***(see instructions on page 3, LMI Instructions & Guidance Document)*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Region** | **Employment 2014** | **Employment Change 2012-22** | **Employment Growth 2012-22** | **Avg. Wage 2014** |
| United States | 132,588,810 | 15,628,000 | 10.8% | $46,440 |
| Delaware | 412,140 | 40,900 | 9.4% | $49,254 |
| District of Columbia | 674,650 | 57,930 | 7.7% | $78,580 |
| Maryland | 2,557,510 | 189,370 | 6.1% | $53,470 |
| New Jersey | 3,869,260 | 313,190 | 7.5% | $53,920 |
| Pennsylvania | 5,653,840 | 467,940 | 7.7% | $45,750 |
| Virginia | 3,648,490 | 534,210 | 13.5% | $50,750 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 3: LMI by Career Cluster & Pathway** *(see instructions on page 4, LMI Instructions & Guidance Document)* | | | | | **2012-2022** | | | |
| **Cluster Code** | **Cluster/Pathway Title** | **High Skill** | **High Wage** | **High Demand** | **Employment 2014** | **Employment Change 2012-2022** | **Employment Growth 2012-2022** | **Average Wage 2014** |
| **15** | **Science Technology Engineering and Mathematics** | **●** | **●** | **●** | 7,875 | 572 | 8.8% | $96,928 |
|  | Rank Select Career Cluster by the Following Categories -> | | | | *(14 of 16)* | *(13 of 16)* | *(8 of 16)* | *(1 of 16)* |
| 15.02 | Science & Mathematics | **●** | **●** | **●** | 4,849 | 436 | 9.4% | $88,213 |
|  | Rank Select Career Pathway by the Following Categories -> | | | | *(2 of 2)* | *(2of 2)* | *(2of 2)* | *(1of 2)* |
|  | Science & Mathematics – Mid-Atlantic States | **●** | **●** | **●** | 124,780 | 10,446 | 7.7% | $89,730 |
|  | Science & Mathematics – United States | **●** | **●** | **●** | 636,380 | 74,700 | 11.1% | $78,225 |
| 15.01 | Engineering & Technology | **●** | **●** |  | 3,026 | 136 | 7.5% | $110,893 |

**Questions: LMI by Career Cluster & Pathway Analysis**

*(see instructions on page 4, 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 Science Technology Engineering and Mathematics Career Cluster ranks in the top twelve (12) for employment, employment change, employment growth rate and average wage when compared to other clusters and is ranked first for average wage compared to all other clusters. The career cluster rating is high skill, high wage, and high demand.**

1. 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?

**Average wage is almost $10,000 less at the career pathway level than at the cluster level, but at an average of $85,000 is still above the median income for Delaware. Employment growth rate, general employment and employment change numbers are all relatively high in Delaware. Salaries remain steady as you move out of Delaware and into the Mid-Atlantic and United States region and employment, employment change and employment growth numbers remain high as well. Related pathways have higher wage potential and show similar employment growth numbers within the state of Delaware.**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 4: LMI by Standard Occupation Code (SOC)**  *(see instructions on page 6, LMI Instructions & Guidance Document)* | | | | | **2012-2022** | | | |
| **SOC Code** | **Occupation Title** | **High Skill** | **High Wage** | **High Demand** | **Employment 2014** | **Employment Change 2012-2022** | **Employment Growth 2012-2022** | **Average Wage 2014** |
| 19-1021 | Biochemists and Biophysicists | **●** | **●** | **●** | 215 | 42 | 17.4% | $92,250 |
| 19-4099 | Life, Physical and Social Science Technicians, All other | **●** | **●** |  | 134 | n/a | n/a | $51,690 |
| 19-4091 | Environmental Science and Protection Technicians, Including Health | **●** | **●** | **●** | 437 | 57 | 14.6% | $72,050\*\* |

**Questions: LMI by Standard Occupation Code (SOC)**

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

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

**The Biochemical and Biophysics SOCs would require students to pursue intensive education programs beyond high school and even beyond the bachelor degree level. The Life, Physical and Social Science Technician, and Environmental Science and Protection Technician (including Health) SOCs are closely related to the program of study but would require training beyond the High School diploma. Students involved in the program will have to complete Algebra II (preferably Pre-Calculus) and may be able to achieve articulated credits at the Delaware Technical and Community College through the successful completion of all courses and associated exams.**

1. Are there adequate state-level projected job openings or employment growth projections at the occupation level to justify starting a new program? 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 the biomedical sciences program of study. All related SOCs and the cluster and pathway are rated as high skill, high wage, and most are considered high demand jobs.**

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| --- | --- | --- | --- | --- | --- | --- |
| **Table 5: LMI Supply Indicators by Secondary & Post-Secondary Levels**  *(see instructions on page 7, LMI Instructions & Guidance Document)* | | | **Program Completion/Enrollment** | | | |
| **Program Code (CIP)** | **Program (CIP) Title** | **School** | **2010-11** | **2011-12** | **2012-13** | **2013-14** |
| **Total Secondary Programs of Study** | | |  |  |  |  |
| 15.01604 | Biomedical Sciences PLTW | NA |  |  |  |  |
| **Total Post-Secondary Programs of Study** | | |  |  |  |  |
| 40.0501 | Chemistry | Delaware State University | 6 | 2 | 4 | 3 |
| 40.0501 | Chemistry | University of Delaware | 47 | 30 | 42 | 36 |
| 03.0104 | Environmental Science | University of Delaware | 15 | 8 | 29 | 35 |
| 26.0202 | Biochemistry | University of Delaware | 17 | 15 | 22 | 22 |
| 26.0101 | Biology | University of Delaware | 134 | 150 | 135 | 133 |

**Questions: LMI Supply Indicators by Secondary & Post-Secondary Levels**

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

1. Is the Secondary Program articulated to or in any way related to the identified Post-Secondary Program(s)?

**Advanced standing for the Biomedical Science program of study is under negotiation with the University of Delaware. The majority of post-secondary opportunities exist at this institution for Delaware students.**

1. 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?

**The numbers of enrolled students in finance programs at the post-secondary level indicate that is a moderate interest area. The Biomedical Science program in secondary schools will prepare students with the knowledge and abilities necessary to successfully participate in 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)*

1. 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.

**Real-Time LMI Report will be published in fall of 2015.**