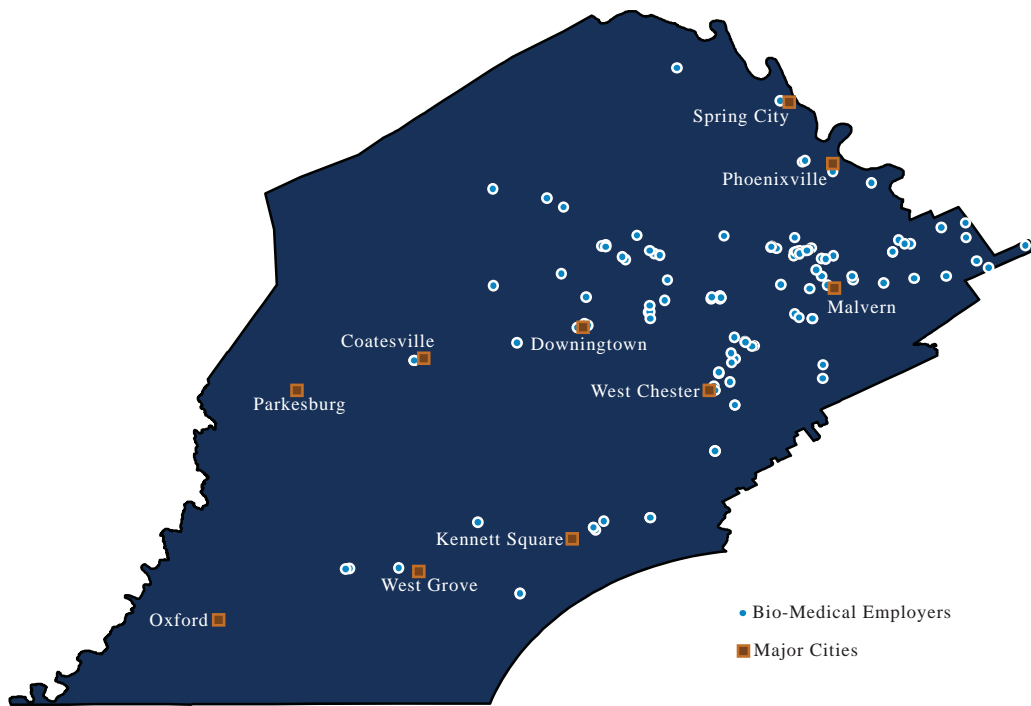




Chester County Workforce Investment Area

QUARTERLY SNAPSHOT



CHESTER COUNTY
WORKFORCE INVESTMENT BOARD

Advancing Chester County's Workforce

February 2011



Chester County Workforce Investment Area

INDUSTRY CLUSTERS OVERVIEW

As shown in **Table 1**, the Chester County WIA experienced over-the-year employment growth in the Education (ED), Health Care (HC) and Information & Communication Services (ICS) industry clusters. These clusters all pay an average wage greater than the state. Business & Financial Services (BFS), along with ED and HC account for nearly four out of every 10 people employed within the WIA. Agriculture & Food Production (AFP), Bio-Medical (BM), BFS and ICS all have a national location quotient (LQ) greater than 1.0, and are the real backbone of the WIA's economy.

Table 1: Industry Cluster Statistics for Chester County WIA (4th Quarter 2009)

	AFP	AMDM	BC	BFS	BM	ED	ENGY	HC	ICS	LT	LWP
Area Employment	10,247	10,170	11,392	39,914	7,213	24,297	1,571	26,718	17,637	4,273	1,460
Percent Area Employment	4.33	4.29	4.81	16.85	3.05	10.26	0.66	11.28	7.45	1.80	0.62
Employment Growth (Q4 2008 - Q4 2009)	-91	-1,627	-1,675	-1,941	-60	336	-246	454	12	-356	-222
2009 Annual Average Wage (\$)	36,515	66,197	57,102	88,029	118,203	43,616	79,669	51,594	100,959	45,141	48,021
National Location Quotient (Q4 2009)	1.30	0.97	0.88	1.41	2.59	0.94	0.40	0.89	1.71	0.76	0.74

Glossary for Tables 1 - 4

AFP	Agriculture & Food Production
AMDM	Advanced Materials & Diversified Manufacturing
BC	Building & Construction
BFS	Business & Financial Services
BM	Bio-Medical
ED	Education
ENGY	Energy
HC	Health Care
ICS	Information & Communication Services
LT	Logistics & Transportation
LWP	Lumber, Wood & Paper

LQ – Location Quotient: A measure of an industry’s concentration in an area relative to the rest of the nation. It compares an industry’s share of local employment with its share of national employment and assesses an industry’s competitiveness. If the location quotient is greater than 1.00, that industry exports the majority of its goods and services to another area and is considered competitive. If the location quotient is less than 1.00, it is considered a local cluster and the majority of goods and services are used in the local market.



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INDUSTRY CLUSTERS OVERVIEW

Table 2: Industry Cluster Statistics for SEPA (4th Quarter 2009)

	AFP	AMDM	BC	BFS	BM	ED	ENGY	HC	ICS	LT	LWP
Employment	37,417	65,179	75,296	265,383	45,751	216,581	16,217	282,308	82,858	32,823	9,605
Percent WIA Employment	2.09	3.65	4.21	14.85	2.56	12.12	0.91	15.80	4.64	1.84	0.54
Employment Growth (Q4 2008 - Q4 2009)	-396	-7,992	-13,026	-11,242	-1,659	2,333	-478	-757	-3,269	-2,588	-1,122
2009 Annual Average Wage (\$)	44,369	62,189	61,286	78,323	107,765	48,520	83,946	53,484	85,910	45,456	58,468
National Location Quotient (Q4 2009)	0.63	0.83	0.77	1.24	2.18	1.11	0.55	1.24	1.06	0.77	0.65

To provide some perspective, these same cluster statistics can be found in **Table 2** for the Southeast Pennsylvania (SEPA) region, which consists of Bucks, Chester, Delaware, Montgomery and Philadelphia counties. Over the year, this region has experienced some significant decreases in employment within many of the clusters, however, much of this is consistent with statewide employment activity during the same time period (Table 3.) With the exception of Energy (ENGY), ED and HC, the Chester County WIA has an equal or greater national LQ than the SEPA region. This is rather significant to mention considering the SEPA region also includes Chester County employment. An interesting thing to note is that while the WIA employs more than one-quarter of the AFP workforce for the region, the average wage in the WIA is significantly lower than the SEPA average. It is the lowest paying cluster within the WIA.

Table 3: Industry Cluster Statistics for the State (4th Quarter 2009)

	AFP	AMDM	BC	BFS	BM	ED	ENGY	HC	ICS	LT	LWP
Statewide Employment (in thousands)	149	271	289	646	81	621	89	824	205	153	55
2009 Annual Average Wage (\$)	41,304	52,267	50,757	64,822	88,599	42,649	70,244	48,573	72,487	41,988	43,977
National Location Quotient (Q4 2009)	0.82	1.12	0.96	0.99	1.26	1.03	0.98	1.18	0.86	1.18	1.20



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BIO-MEDICAL CLUSTER

The BM cluster includes industries that are involved in the development and use of technology to enhance life from a health perspective. This cluster largely represents those industries that employ advanced technology and serve as a foundation for enhanced medical services. These jobs typically require a college education and often an advanced degree, which in turn accounts for the cluster's high average wage. As this cluster is connected to the health care industry, the outlook for the future is positive. Health care is a strong industry, even in a poor economy, as it is more dependent on demographics than the ups and downs of the business cycle. It is possible that the job volume will continue to increase well into the future, but even if it does not, this cluster will still be relevant due to the higher than average concentration of employment. Compared to the nation, the WIA has an LQ of 2.59.

Table 4: Statistics for BM Cluster in Chester County WIA

Employer Units (Q4 2009)	142
Number of Jobs (Q4 2009)	7,213
Percent of Total Jobs (Q4 2009)	3.05%
Average Annual Wage (2009)	\$118,203
Net Change in Job Volume (Q4 2008 - Q4 2009)	-60
Net Percent Change in Job Volume (Q4 2008 - Q4 2009)	-0.8%
Q4 2009 National Location Quotient (LQ)	2.59
Percent Change from Q4 2008 National LQ	-0.07%

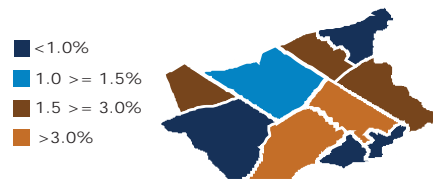
Figure 1

Total BM Employment by County



Figure 2

BM Percent Employment by County





Chester County Workforce Investment Area

BIO-MEDICAL CLUSTER

Table 5: BM's Top 5 Industries in 4th Quarter 2009

By Employment		By Most Competitive LQ	
1	R&D in Biotechnology	1	Other biological product manufacturing
2	Other biological product manufacturing	2	R&D in Biotechnology
3	Surgical and medical instrument manufacturing	3	Surgical and medical instrument manufacturing
4	Pharmaceutical preparation manufacturing	4	Surgical appliance and supplies manufacturing
5	R&D in the physical, engineering, and life sciences	5	Social science and humanities research

In addition to looking at the change in employment, shift/share analysis helps evaluate the significance of that change by removing predictable factors. Shift/Share looks at the National Industry Share (NS), Local Industry Mix (IM) and Net Change (NC) to derive the area's Competitive Component (CC) in employment. **Figure 3** depicts the shift/share analysis of the BM industry cluster. The formula to derive the Competitive Component is:

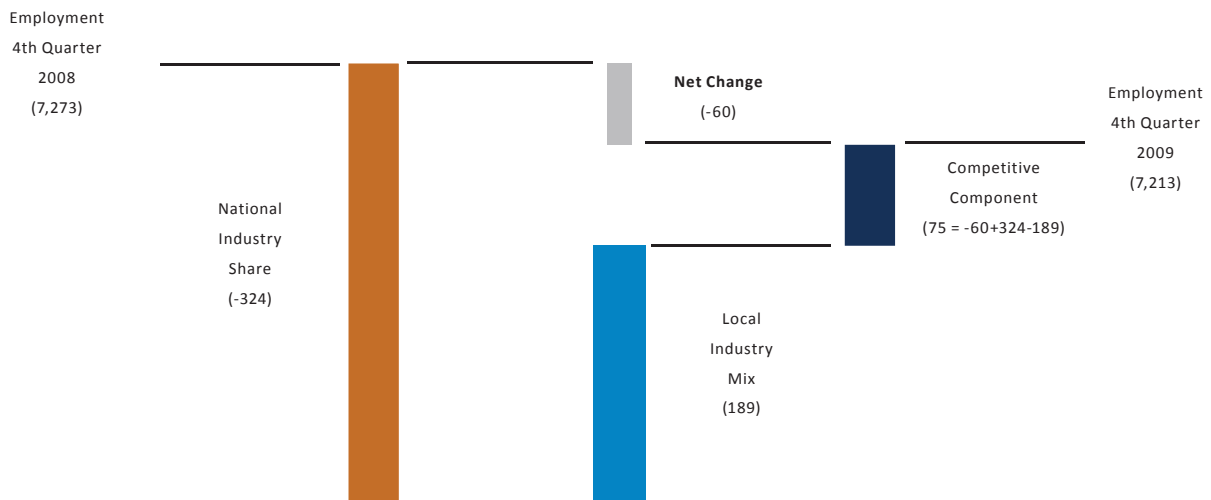
$$CC = NC - NS - IM$$

NC is the change in employment. In this case, 4th Quarter 2008 to 4th Quarter 2009.

NS is the predicted change in employment over the time period based on the national employment for **all industries**.

IM is the predicted change in employment over the time period based on the national employment in the **cluster**.

Figure 3: National Shift/Share Analysis of BM in Chester County WIA





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In this example, we can see that the overall national economy did not do well during this time period, and all other things being equal, the cluster would have lost 324 jobs if it followed the national average. At the same time BM in the nation did do well, and would have accounted for an increase of 189 jobs on average. So, while the area lost 60 jobs, in fact the region had a CC that actually accounted for an increase of 75. This analysis cannot, however, explain why the area is competitive, as numerous factors could be the causation of the regional advantage; geography, infrastructure, individual employers, tax policies, educational institutions, etc. This is also only a snapshot between two time periods and not a trend analysis, so the CC may fluctuate greatly when evaluating it over different time periods.

The 2010 statewide High Priority Occupations (HPOs) within the BM cluster are shown below in **Table 6**. These 11 occupations are considered to be in demand by employers, have higher skill needs and likely provide family-sustaining wages throughout the state of Pennsylvania. The employment data listed for the occupations are for all industries, including BM, in Chester County WIA. In this area, a vast majority of these statewide BM HPOs are expected to experience above average employment growth by 2018 and combined they will account for 603 annual openings.

Table 6: WIA Employment of Statewide High Priority Occupations in BM

Statewide BM High Priority Occupations		Chester County WIA Employment			
SOC Code	SOC Title	Estimated 2008	Projected 2018	Percent Change	Annual Openings
13-1111	Management Analysts	2,640	2,900	9.9%	71
13-2011	Accountants & Auditors	2,640	2,710	2.7%	54
15-1032	Computer Software Engineers, Systems Software	1,000	1,080	8.0%	23
17-2112	Industrial Engineers	400	450	12.5%	15
17-2161	Nuclear Engineers	NA	NA	NA	NA
19-1021	Biochemists & Biophysicists	290	330	13.8%	10
19-1042	Medical Scientists	980	1,100	12.2%	43
19-2031	Chemists	440	440	0.0%	12
19-4021	Biological Technicians	130	140	7.7%	6
29-2012	Medical & Clinical Laboratory Technicians	290	320	10.3%	8
29-2034	Radiologic Technologists & Technicians	260	270	3.9%	6
41-4011	Sales Representatives, Scientific & Technical	1,710	1,640	-4.1%	38
43-4051	Customer Service Representatives	5,130	5,700	11.1%	200
43-9061	Office Clerks	5,900	6,000	1.7%	117



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BIO-MEDICAL CLUSTER

Table 7 lists the top BM occupations by employment in Pennsylvania. Six of these occupations listed appear in HPO list in Table 6. The 10 occupations listed make up approximately 23 percent of all employment in the BM cluster statewide. With a statewide 2009 annual average wage of \$88,599, the BM cluster occupational wages are typically higher than occupations in other clusters. Eight of the 10 occupations listed below pay above the family-sustaining wage in PA (\$29,680).

Table 7: Top Ten BM Occupations by Employment in PA

SOC Code	SOC Title	2006 Cluster Employment	2008 Occupational Wage
19-1042	Medical Scientists	3,909	\$104,014
19-2031	Chemists	2,854	\$72,314
15-1032	Computer Software Engineers, Systems Software	1,940	\$93,374
19-1021	Biochemists & Biophysicists	1,774	\$99,990
17-2161	Nuclear Engineers	1,768	\$112,650
51-9111	Packaging & Filling Machine Operators/Tenders	1,636	\$28,080
51-2092	Team Assemblers	1,620	\$27,387
51-9081	Dental Laboratory Technicians	1,577	\$39,563
43-6011	Executive Secretaries & Administrative Assistants	1,576	\$46,666
41-4011	Sales Representatives, Scientific & Technical	1,572	\$76,164

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