

# Memphis Bioworks® Foundation BIO-SCIENCES TALENT ACTION PLAN



November 2008

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*Building Assets through Knowledge & Innovation*

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## About Thomas P. Miller and Associates

Thomas P. Miller and Associates is an economic and workforce development consulting firm based in Greenfield, Indiana. Founded in 1989, TPMA has a long and rich history of partnering with regions, cities, counties, and states in developing sustainable business plans and strategies to execute those plans. From the very beginning, TPMA has followed a vision of incorporating workforce development, or talent development as it is called today, into the mainstream of economic development strategy. From that guiding vision has grown a firm that is engaged in all aspects of economic development planning and human capital growth—one that brings a uniquely well-rounded and balanced approach to its work.



## Introduction

In the report 'Technology, Talent & Capital: State Biotechnology Initiatives 2008' Battelle Memorial Institute outlined the compelling reasons why many regions are focusing efforts on creating employment opportunities in the life sciences sector:

- Growth in the bio-science job sector since 2001 has outpaced growth in other sectors 5.7% to 3.1%;
- Wages paid in the bio-sciences sector are higher on-average than for all other private sector jobs (\$71,000 compared with \$42,000 in 2006) and the wage rates in the bio-sciences are increasing at a faster rate: and,
- For every job created in the life sciences sector between 3.3 and 11.3 new jobs are created in other sectors as a result, depending upon the occupation.

Memphis has its own reasons for pursuing opportunities in the life and bio-sciences: it is home to of a number of significant life science companies. Among them are:

- Smith & Nephew – Orthopedics
- Wright Medical Technology – Orthopedics
- Schering-Plough HealthCare Products – Pharmaceuticals
- GlaxoSmithKline – Pharmaceuticals
- Pfizer – Pharmaceuticals
- Johnson & Johnson – Medical Devices and Health Care Products
- FedEx – Bio-logistics

And Memphis is home to the world-renowned St. Jude's Children's Research Hospital, a leader in research of children's catastrophic diseases.

However, in Battelle's calculations of the 25 Largest Metropolitan Areas in the life sciences, *Memphis didn't make the list*, even though a number of similarly sized regions did.



A Google™ search of the term ‘Memphis, TN’ yields a number of websites, few of which prominently reference Memphis’ pre-eminence in the life and bio-sciences. In fact, cotton is still prominently listed as the economic driver for the Memphis region in many of the web references.

Competition worldwide for recognition and for attracting talent in the bio-sciences sector is intense: Memphis is one of a number of American communities positioning itself to leverage key assets.

Development of the 1.5 million square foot UT-Baptist Research Park will create a visible footprint for the Memphis region’s innovation and research vision. Buildings have a way of capturing attention and focusing activity because they are tangible and progress from footer to topping out can be easily tracked.

Capturing attention for workforce development activities is much harder and sustaining attention over time requires diligent and focused effort. Fostering a qualified workforce to support a growing bio-sciences sector requires a long-term vision, short-term action steps in service of the vision, and a steward of the vision and action steps that keeps stakeholders focused and mobilized.

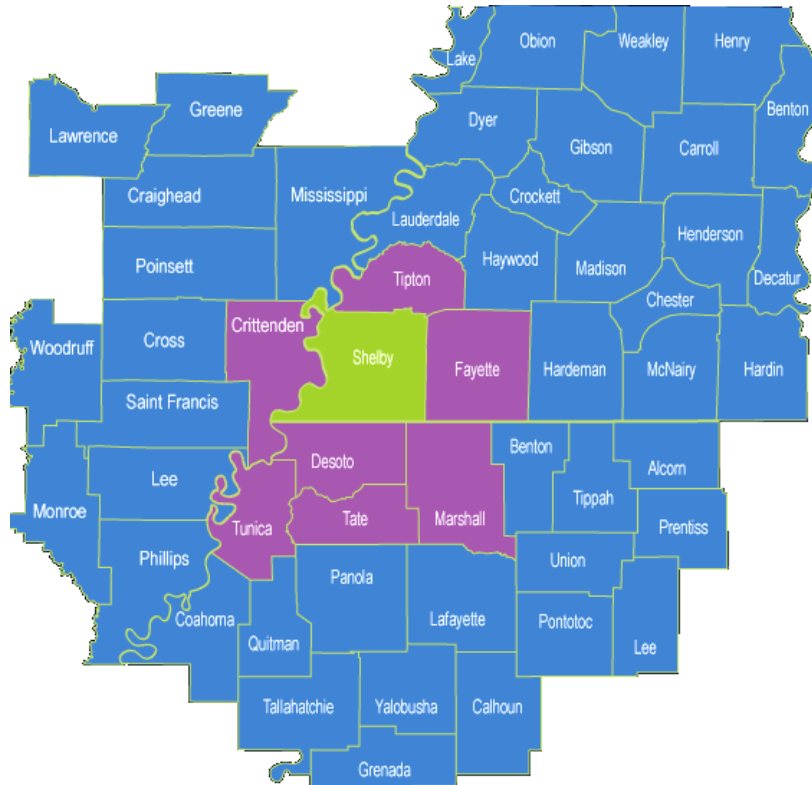
This Bio-sciences Talent Action Plan is intended to be a first step in a long process to foster vision and action that will provide a world-class workforce in the Memphis area for the emerging bio-sciences cluster.



## Regional Workforce Overview

The Memphis Metropolitan Statistical Area (MSA) consists of Fayette, Shelby, and Tipton counties in Tennessee; DeSoto, Marshall, Tate, and Tunica counties in Mississippi; and Crittenden County in Arkansas. The total population of the Memphis region is 1,281,445 with the largest county being Shelby (U.S. Census, 2007 estimate).

*Figure 1.1- Memphis MSA Region*



## Population

From 2000-2007, the Memphis MSA region had a growth rate of 6.3%. The largest city in the Memphis MSA region being Memphis, located in Shelby County, with a total population of 641,085 (U.S. Census, 2007 estimate). Within the region, significant population growth has been seen in DeSoto County, with a 38.6% increase and Fayette County with a 23.2% increase. The lowest growth rate is Marshall County, Mississippi with a 1.8%, the population increased only 611 people from 2000 – 2007.

*Figure 1.2- Population and Growth Rate*

<b>Area</b>	<b>2000</b>	<b>2007</b>	<b>Growth Rate (2000-2007)</b>
Crittenden County (AR)	50,866	51,926	2.1%
DeSoto County (MS)	107,199	148,568	38.6%
Fayette County (TN)	28,806	35,471	23.2%
Marshall County (MS)	34,993	35,604	1.8%
Shelby County (TN)	897,472	916,744	2.6%
Tate County (MS)	25,370	26,627	4.9%
Tipton County (TN)	51,271	56,073	9.4%
Tunica County (MS)	9,227	10,432	13.1%
<b>Memphis MSA</b>	<b>1,205,204</b>	<b>1,281,445</b>	<b>6.3%</b>
		United States	7.3%

Source: Workforce & Innovation Technical Solution



## Education Attainment

In 2007, 277,054 students graduated from high school in the Memphis MSA region (34%) compared to 29% nationally. Collectively, 24.6% of all adults over the age of 65 in the Memphis MSA have a Bachelors Degree compared to 28.2% nationally. Note, however, that the percentage of adults with a Bachelors Degree in the rural counties (all counties other than Shelby County) is significantly below the national average.

*Figure 1.3 – Memphis MSA Education Attainment*

Area	High School Diploma or More % of Adults 25+	Bachelor's degree or More % of Adults 25+
Crittenden County (AR)	74.7%	13.8%
DeSoto County (MS)	91.5%	16.6%
Fayette County (TN)	74.6%	13.7%
Marshall County (MS)	67.4%	10.2%
Shelby County (TN)	89.2%	28.9%
Tate County (MS)	76.8%	13.2%
Tipton County (TN)	78.1%	11.5%
Tunica County (MS)	66.4%	10.3%
<b>Memphis MSA</b>	<b>86.9%</b>	<b>24.6%</b>
United States	85.5%	28.2%

Source: Workforce & Innovation Technical Solution



## Labor Force

In 2007, there were 597,500 total people in the labor force in the Memphis MSA. Of those, 93.8% (566,858) were employed into the labor force. On average, 6.2% of the labor force is unemployed in the MSA region while the national average is 4.6%. DeSoto County has the lowest unemployment rate percentage of the region with 4.2%. Shelby County employ's 422,476 people, the highest amount in the Memphis MSA region.

*Figure 1.4 – 2007 Annual Labor Force Statistics*

Location	Total Labor Force	Employed	Unemployed	Unemployment Rate
Crittenden County(AR)	22,502	21,007	1,495	6.6%
DeSoto County(MS)	75,336	72,192	3,144	4.2%
Fayette County (TN)	17,415	16,326	1,089	6.3%
Marshall County (MS)	15,271	14,078	1,193	7.8%
Shelby County (TN)	445,122	422,476	22,646	5.1%
Tate County (MS)	11,906	11,161	745	6.3%
Tipton County (TN)	28,012	26,551	1,461	5.2%
Tunica County (MS)	4,438	4,074	364	8.2%
<b>Memphis MSA</b>	<b>597,500</b>	<b>566,858</b>	<b>30,642</b>	<b>6.2%</b>
			United States	4.6%

Source: US Bureau of Labor Statistics



## Employment and Wages

Within this labor force, a bio-science sector is emerging as a sizable sector of the Memphis Region. As of May 2007, biomedical engineer's average mean annual wage was \$79,610 nationally compared to \$75,390 in Memphis. Bio-science annual mean's national average as of May 2007 for bio-science occupations was \$62,152 with the nation's total mean wage of \$40,069. This is a bio-science trend nationally and within the Memphis MSA region. Nationally, the bio-science sector is above the average in many areas, mean annually, hourly and rise. Bio-science occupations annual mean wage in the Memphis MSA region is \$56,242 compared to a national average of \$62,152 annually.

*Figure 1.5 – Bio-science Occupational Employment and Wages*

<b>Occupation</b>	<b>Memphis MSA Employment</b>	<b>National Employment</b>	<b>Memphis MSA Mean Hourly</b>	<b>National Mean Hourly</b>	<b>Memphis MSA Mean Annual</b>	<b>National Mean Annual</b>
Biomedical Engineers	190	15,400	\$36.24	\$38.28	\$75,390	\$79,610
Chemical Engineers	110	28,780	\$36.58	\$40.50	\$76,080	\$84,240
Chemists	180	79,860	\$26.63	\$32.94	\$55,380	\$68,520
Biological Technicians	-	69,110	\$17.43	\$19.35	\$36,260	\$40,240
Chemical Technicians	200	64,450	\$18.65	\$20.39	\$38,790	\$42,420
Medical and Clinical Technologists	990	163,270	\$25.42	\$25.20	\$52,880	\$52,410
Chemical Equipment Operators	600	52,620	\$19.63	\$21.28	\$40,840	\$44,250

Source: U.S. Bureau of Labor Statistics



## Bio-sciences Talent Action Plan

During the months of June, July and August 2008 a team from TPMA and the Memphis Bioworks® Foundation interviewed many workforce and education professionals throughout the Memphis region. Interviews were a significant part of the 'asset mapping' process which intended to document the region's capacity for preparing workers for the bio-sciences industry.

From these interviews, the team identified a number of prevailing themes:

1. There are several organizations in the Memphis region involved in planning and funding for workforce development initiatives towards life sciences, but there is limited coordination and communication among these organizations. Consequently, the business community doesn't have a single point of reference for assistance in meeting their workforce needs.
2. The education and training 'pipelines' for life science occupations are not well developed in Memphis. While it appears as though there are many components at the public high school, community college, undergraduate and graduate college levels, the career pathways feeding into the primary life science industries in Memphis (biomedical devices, health care and medical research, bio-logistics, and bio-agriculture) are not well documented nor well developed.
3. The breadth of life science careers in Memphis is not generally understood by many of the stakeholders in the education and workforce community. Many educators and administrators that were interviewed as part of this project were unaware of the variety of science occupations available in the Memphis area. It follows that many students at all levels within the educational system also have limited perceptions of the opportunities available.
4. Efforts at retaining talent, both local university graduates and new recruits from outside the Memphis area aren't in place, suggesting that the region may unnecessarily experience brain drain.
5. Talent attraction remains the responsibility of individual companies and the effort is fragmented. The image of Memphis is promoted inconsistently and there are limited coordination efforts to retain relocated talent for the long-term. Trailing spouses, the need to involve new workers socially and culturally, and the need for acclimation to the area are issues that could be more adequately addressed to strengthen talent retention.



## **Theme 1 – Workforce Coordination**

There are several organizations in the Memphis region involved in planning and funding for workforce development initiatives, but there is limited coordination and communication among these organizations. Consequently, the business community doesn't have a single point of reference for assistance in meeting their workforce needs.

### **Recommended Action: Develop 'Memphis Regional Bio-sciences Talent Council'**

#### **Mission:**

The Mission of the Memphis Regional Bio-sciences Talent Council (MRBTC) is to quantify the employment and talent needs of the Memphis area bio-sciences employers, to communicate those needs to education and workforce development institutions to assure that a constant supply of qualified employees is available to the bio-sciences sector through training, education, and recruitment activities.

#### **Vision:**

The bio-sciences sector in the Memphis region will prosper, grow and attain pre-eminence in its industry sectors because it has access to the best and the brightest talent available.

### **Composition of the Council:**

The MRBTC will be a joint task force of Memphis Tomorrow and the Memphis Bioworks<sup>®</sup> Foundation and will be composed of board members from each organization. The MRBTC should be a blue ribbon panel, composed of CEO's and executives from the region's bio-science firms and leading employers. The panel should be no more than nine or ten members.

Work groups composed of board member designees and other volunteers would operate under the auspices of the MRBTC.

The MRBTC should have a defined deadline for delivering specific deliverables and should have a sunset date.



## **Work of the Council:**

The MRBTC would be formed as an ad-hoc task group operating under the auspices of the proposed Center for Workforce Excellence or under Memphis Tomorrow and the Memphis Bioworks® Foundation to accomplish specific tasks:

- Quantify the current and projected demand for talent in the region's major bio-science employers;
- Overlay that demand with education and training offerings to identify gaps in training provision or capacity limitations in programs;
- Qualify current training offerings to assure that they offer the quality needed by area employers and be prepared to recommend remedies;
- Identify funding sources for new programs and ongoing funding streams to assure continuity of programming;
- Project industry demands over time to calibrate the balance between local supply of talent and projected needs to recruit talent. This segment of the work plan should pay particular attention to K – 12 preparations and the capacity of local graduates to successfully continue to advanced training. Create a talent action plan to address findings in the analyses and establish a timeline for implementation and responsibilities for the various stakeholders.

The MRBTC would initially be divided into working sub-councils corresponding to the four areas of concentration in the Memphis' region's bio-sciences:

- Orthopedics,
- Health Science and Medical Research,
- Bio-Logistics, and
- Bio-Agriculture.



## **Theme 2 – Workforce Pipelines**

The education and training pipelines for life science occupations are not well developed in Memphis. While it appears as though there are many components at the public high school, community college, undergraduate and graduate college levels, the career pathways feeding into the primary life science industries in Memphis (biomedical devices, health care and medical research, bio-logistics, and bio-agriculture) are not well documented nor well developed.

### **Recommended Action (1): Mapping the Bio-sciences Workforce Pipelines**

#### **Goal:**

The result of this process will be a functional analysis of the local supply and demand for bio-science occupations in the Memphis region and a diagnosis of areas where the workforce pipeline can be strengthened and improved.

This process could form the basic work of the Memphis Regional Bio-sciences Talent Council.

#### **Vision:**

Pathways for Memphis area bio-science careers through K-12, vocational schools, and post-secondary institutions are well understood by educators and students, making entry into those occupations more readily accessed while assuring a steady supply of local talent for employers.

### **The Concept of the Workforce Pipeline:**

The concept of a workforce pipeline refers to the presence of an easily identified, logical training and education process that adequately prepares an individual for a specific occupation. Ideally, one should be able to identify course offerings and curricula beginning in middle and high school, feeding into two-year and four-year institutions and extending through graduate work, where applicable, and that connects graduates with in-demand occupations.

Obviously, the need for all in-demand occupations cannot and will not be met by local schools and training institutions. Some occupations are too specialized, and the demand too small to



warrant the investment of localized training. But, for many occupations that are critical to the growth of the region's bio-science companies, a robust and dependable supply of workers is crucial for their growth and expansion. Quantifying the workforce pipelines provides a critical tool for attracting new bio-science companies to the region, as well.

The outcome of the pipeline mapping process is the creation of a snapshot of the worker supply chain for the bio-sciences industry in the Memphis region. Mapping the pipeline identifies gaps, bottlenecks, over-and-under supply issues, and can help isolate quality issues.

Key questions that must be considered to map the pipeline are:

- How many workers are needed in key occupations?
- Are the training programs in place to create the right skills sets?
- Is the capacity of the programs adequate to meet the local need?
- Is the local need significant enough to warrant the investment in educational programming or can the need be met better through recruitment?
- Are enough candidates pursuing the appropriate certificates and degrees to meet the need?
- Is the process for attaining the appropriate certifications or degrees transparent, i.e. can people interested in a particular career path easily understand and access the necessary steps for entering the occupation?
- Is the quality of the training and education adequate to meet the needs of employers?

### **Process Steps:**

This process can be designed and implemented to be conducted as a volunteer driven process, can be performed by professional consultants, or as a hybrid involving volunteers directed and supplemented by professionals.

The Memphis region, under the auspices of the Memphis Area Chamber of Commerce has already taken the first step in this process: The June 2006 Comprehensive Regional Workforce Analysis began the process of identifying workforce demands in the greater Memphis region



and an updated analysis currently underway may further illuminate needs among the bio-science companies.

The first step in the process is to identify specific in-demand/crucial occupations for the major bio-science clusters in the Memphis region:

- Orthopedics,
- Health Science and Medical Research,
- Bio-Logistics, and
- Bio-Agriculture,

This information can be collected through direct interviews or surveys with Memphis area employers, and through secondary sources such as internet job-boards or employer web sites.

Once a basic list of critical occupations in demand is compiled for each of the bio-science sub-clusters, focus groups of human resource professionals from companies within each of the sub-clusters should be convened to verify the list, make additions and subtractions and answer other basic questions about the occupations on the list:

- From where are candidates successfully recruited for identified occupations, (i.e. local, out of market, which institutions):
- For which identified occupations do employers have to provide supplemental training:
- Which institutions within the region are most responsive to employer's needs and which are least responsive:
- Which occupational openings are most and least readily filled:
- How and where are job openings posted;
- When recruiting from outside the Memphis market, what are perceived as the local advantages and disadvantages?

As a result of the focus groups, a refined list of occupations that meet the following criteria should be identified:

- Potential for local recruitment;
- High continuing demand that is met or unmet currently; and,



- Local institutions that either do or could supply candidates.

With the critical occupations identified, a profile for each is compiled outlining the educational requirements for each, documenting minimum requirements at each step of the process. In effect, these profiles outline the qualifications and educational attainment of the ideal candidates for each occupation.

These profiles are used, then, as the templates for comparing the ideal steps for successfully preparing a candidate with what is actually occurring within the education and workforce development structures in the region.

## **Recommended Action (2): Create Regional Bio-sciences Skills Consortia**

### **Goal:**

Employers join together to create regional skills consortia when there is a collective need across companies for specific occupations and a ready pool of candidates is needed to meet ongoing needs. Employers join together to identify common skills needs and to help create capacity within local educational facilities to produce a stream of qualified workers.

### **Vision:**

For critical occupations in the bio- and health sciences sectors, a ready pool of trained workers is available. These trained workers also provide a strategic advantage for attracting new companies who see the availability of a trained workforce as an incentive for locating in the Memphis region.

### **Action Steps:**

Because of competitive pressures in the marketplace companies in the same or similar industries often have difficulty collaborating on issues such as workforce development. Yet many of these companies have common workforce needs. An outside entity is often needed to identify those common needs and facilitate a solution. Creating a ready pool of workers that a number of companies can draw from facilitates industry growth within a region and can be a catalyst for industry attraction.



Formation of the regional skills consortia can be a by-product of the talent mapping process outlined above, or could be facilitated separately.

If the skills consortia are formed independent of other strategies, Memphis Bioworks<sup>®</sup> Foundation, or a designee entity, can act as a neutral convener of companies within the region, and can uniquely facilitate efforts to identify common needs for workers and/or skill sets. The goal is to identify common skills needs among companies, match those needs with current supply, and determine if steps need to be taken to increase capacity at local education and training institutions.

In some cases, companies join together to fund increased capacity at a local community college or university to hire additional instructors when capacity for producing specific graduates is limited.

A facilitating organization such as Memphis Bioworks<sup>®</sup> Foundation might seek outside funding for lab space or other capacity-building activities within educational institutions.

### **Other Potential Action Strategies:**

#### **Copy the successful 2+2+2 program from the Pittsburgh Technology Council**

The goal of the 2+2+2 program is to provide students in the region with applied biotechnology skills through streamlined curriculum that spans high school, two-year community college and four year degree programs. Junior and senior students have the opportunity to enter the first segment of the program in high school followed by two years of study at a community college and subsequently complete their final two years of training at a four-year university. Student completion of the program results in well-trained and developed employee candidates to feed into the region's growing life sciences workforce.



**For example:**

High School objective: Laboratory Assistant

Two Year Degree objective: Laboratory Technician

University Objective: Research Scientist

A similar model in Advanced Manufacturing has already been developed through Mid-South Community College in collaboration with the West Memphis public school system and Arkansas State University. High school students take college credit courses while still in high school and then complete an Associate of Applied Science at Mid-South Community College in Advanced Manufacturing. They may then complete a Bachelor of Applied Science degree program through Arkansas State University with most courses being taught by four-year college faculty on the community college campus.

**Create a *University High School for Life Sciences***

*University High School* is a unique partnership between Ben Davis High School in Indianapolis and Vincennes University. In this intensive program, students who complete the two-year dual credit program simultaneously graduate with a high school diploma and an associate's degree.

Students selected to participate enter at the beginning of their high school junior year and must agree in advance to forego extra-curricular activities to accommodate the extended school day and school week.

A similar program which allows a high school student to obtain a college level technical certificate while still in high school is already available in several Engineering Technology fields through Southwest Tennessee Community College, and in the Advanced Manufacturing area through Mid-South Community College. .

A university high school model would shorten the pipeline for certain careers, moving candidates into certain high-demand occupations in two years rather than four.



### **Theme 3 – Workforce Marketing**

The breadth of life science careers in Memphis is not generally understood by many of the stakeholders in the education and workforce community. Many educators and administrators that were interviewed as part of this project were unaware of the variety of science occupations available in the Memphis area. It follows that many students at all levels within the educational system also have limited perceptions of the opportunities available to them.

#### **Recommended Action: Telling the Story At Home**

##### **Goal:**

Implement a public awareness campaign within the Memphis region to acquaint young people, educators, and policy-makers with the prevalence of bio-science careers in the area, the attractiveness of these occupations, and the educational requirements for them.

##### **Vision:**

As a result of a comprehensive local public awareness campaign, bio-science careers in the Memphis region are coveted by many young people in the area and the growing supply of qualified workers graduating from area education institutions have encouraged exponential expansion and growth of the bio-sciences cluster.

#### **Increasing Public Awareness of Bio-science Careers:**

Through both earned and paid media, Memphis Bioworks<sup>®</sup> Foundation can actively support the local bio-science industry by increasing the awareness of occupations and careers that are available today and emerging for tomorrow. Ultimately, the goal of a public awareness campaign may be to drive traffic to a career web-site where young people, parents, and teachers can get information about local careers in the bio-sciences, educational offerings available through local community colleges and four-year institutions, and general information about local bio-sciences companies and their products.

This marketing campaign would be a natural complement to two goals already underway through the MemphisED initiative:



- Goal B: Market Memphis and Shelby County and
- Goal E: Make Memphis a *Place of Choice* for Knowledge Workers

A bio-science workforce marketing campaign needs to be ongoing, pervasive, and multi-dimensional to reach many levels of the community and create a sense of urgency in drawing young people into the life science career paths.

### **Other Potential Action Strategies:**

#### **The Bio-Science Career Boutique**

Create a shopping mall based Bio-Science Career Boutique where anyone can participate in multi-media career overviews, collect information on existing training and education resources, complete on-line job applications and resumes (perhaps conduct a live interview via telephone or web), perform an online skills analysis and job matching activity, and register for classes and financial assistance.

#### **Teach-A-Teacher**

Create summer practicum for teachers with selected local companies to give them real world exposure to careers and companies associated with the life sciences in the Memphis region. Select one or two teachers a year to be life science ambassadors with a paid sabbatical: encourage the teachers to shadow researchers and other key personnel at life science companies and deliver in-service sessions for other teachers and school administrators as a way of helping to alert and sensitize them to career options for their students



## **Theme 4 – Talent Retention**

Efforts at retaining talent, both local university graduates and new recruits from outside the Memphis area, aren't in place suggesting that the region may unnecessarily experience brain drain.

### **Recommended Action: Bioworks Place: A Unique Talent Hub**

#### **Goal:**

Bioworks Place will be an online community for Memphis area bio-science professionals where they can connect with other professionals, engage with the greater Memphis community, and will allow outsiders with an interest in the bio-science cluster to sample the region and connect.

#### **Vision:**

The bio-sciences professional community is well connected and networked in Memphis: professionals in the bio-sciences regularly interact, and many on-line discussions are monitored world-wide as Memphis gains a reputation as a node for innovation in orthopedics and health research.

Talented professionals from around the world are familiar with Memphis and its bio-science assets and are connecting to job opportunities through the Bioworks Place site.

#### **Bioworks Place:**

Memphis Bioworks<sup>®</sup> Foundation has already heavily invested in the beta version of Bioworks Place and development work and implementation of the business plan is well underway.

When fully operational, Bioworks Place will be an online community where college students and life science professionals gather information about the Memphis market, become engaged with others in their field of interest and build connections into the Memphis bio-science workforce.

The ultimate goal for Bioworks Place is to provide a streamlined, online destination for professionals and college students seeking connections to the Memphis bio-science



community. The site will be designed to attract college students into the online community early in their college experience as a way of engaging them with Memphis bio-sciences, to connect them to internship and mentor opportunities, and expose them to developments, news, and events in Memphis.

Additionally, Bioworks Place will offer online tools to enable college students and professionals to manage their careers and network regularly with others in the Memphis bio-sciences community.

Beyond Bioworks Place utility as a recruitment tool, the site will host invitation only online discussions around specific subject areas such as cancer, bio-logistics, pharmaceuticals, orthopedics, etc. These online discussions are intended to facilitate the formation of social networks centered on industry issues, trends and advancements in the Memphis bio-science sector.



## **Theme 5 – Talent Attraction**

Talent attraction remains the responsibility of individual companies and the effort is fragmented, the image of Memphis is promoted inconsistently and there are limited coordinated efforts to retain relocated talent for the long-term. Trailing spouses, the need to involve new workers socially and culturally, and the need for acclimation to the area are issues that could be more adequately addressed to strengthen talent retention.

### **Recommended Action: A Workforce for the American 21<sup>st</sup> Century**

#### **Goal:**

Leverage the Memphis region's reputation as a diverse, welcoming, and professional community and focus on targeting minority professionals in the bio-sciences for recruitment to the region.

#### **Vision:**

Memphis will be known world-wide as an international leader in the bio-sciences and as a community that is open and welcoming to professionals and thought leaders from all racial and ethnic backgrounds.

#### **Action Steps:**

Demographers and economists have outlined two mega-trends shaping the early part of the 21<sup>st</sup> century – The graying of the baby-boom cohort and the rise of the majority minorities. For many communities these mega-trends represent a potential economic risk: Memphis may be in a unique position to leverage these trends to its advantage.

The graying of the baby boom cohort heralds the advent of increased investment and focus on health care and the life sciences, two areas where Memphis has a unique set of assets. Memphis' current high concentrations and unique specializations in health care services give the region a definite competitive advantage to attract this demographic.



Memphis' pre-eminence can be quickly lost, though, if the supply of professionals and technical staff is not sufficient to meet the growing demand of health service companies in the area.

Similarly, where other communities look ahead with wonder at the emergence of majority minorities, Memphis can market its already diverse population and aggressively pursue minority professionals. Memphis already boasts a racially and ethnically diverse professional community in the bio-sciences. This diversity can also provide a competitive advantage to Memphis to attract additional highly qualified multi-national professionals to the area.

### **Other Potential Action Strategies:**

#### **Take the Memphis Message to the World (or at least the part of it that participates in the NBA....)**

Create a program in conjunction with the Memphis Grizzlies: rent a suite at arenas in select cities when the Grizzlies play there: invite locals who are graduates of U of M, University of Tennessee, or others with ties to Memphis and degrees in a related bio-sciences field. Soft-sell Memphis and Memphis employers: may want to include representatives of select employers on the visit. Connect with university alumni offices for information about graduates.

#### **Welcome the World to Memphis**

Increasingly, life science firms rely on an immigrant workforce in both research and development and manufacturing. Identifying mentors with international experience that can match the ethnic and national background of these workers will help to make them feel more at home in Memphis, and will help create an international reputation for the city and its life sciences cluster.

This international workforce can also serve as a referral point for identifying other individuals who may consider relocating to Memphis.

