

## I ndustry Snapshots

- Biological technicians, a key biotechnology occupation, is expected to grow by 19.4% between 2002 and 2012, while the occupation of biological scientists is projected to grow by 19.0%. (U.S. Bureau of Labor Statistics, National Employment Data)
- The biotechnology industry employed 713,000 workers in 2002 and is anticipated to employ 814,900 workers in 2007. (Economy.com, Industry Workstation, Biotech industry forecast)
- The population of companies engaged in biotechnology is dynamic and growth in the biotechnology-related workforce has been vigorous, averaging 12.3% annually for those companies that provided data for 2000-2002. Companies with 50 to 499 employees experienced the fastest growth, with an annual increase of 17.3%, while growth among larger firms was 6.2%. (U.S. Department of Commerce, *A Survey of the Use of Biotechnology in U.S. Industry*, Executive Summary for the Report to Congress)

# High Growth INDUSTRY PROFILE

## W orkforce Issues

### Recruitment and Retention

To succeed and grow in the 21st century economy, biotechnology employers need to fill each position in their companies, from entry-level to the most advanced, with qualified, skilled individuals. Because the industry is experiencing such rapid growth, biotechnology firms often demand more skilled workers than are available and are projected to need more workers than are currently enrolled in training programs.

### Skills Competencies and Training

While there may be instances where locally industry-driven career ladders and competency models exist, the lack of nationally-recognized articulated skills competencies and career ladders as well as sources of training presents a challenge. This is complicated by the rapidly changing environment in which the industry operates. Advances in the underlying sciences continuously affect the technology and processes used by the biotechnology industry, making it necessary for employees working in the industry to continuously upgrade their skills to maintain productivity.

### Image and Outreach to the Public

Youth, educators, and job seekers lack clear information about career options within the biotechnology industry and generally fail to understand the depth and range of the industry's activities. This disconnect is a challenge for the industry because the lack of definition and outreach limits the number of people who consider the biotechnology field to be a viable career option.

## S kill Sets

(Sources: U.S. Department of Commerce, *Survey of the Use of Biotechnology in U.S. Industry* and U.S. Bureau of Labor Statistics, *2004-05 Career Guide to Industries*)

- Increasingly, companies and research organizations are seeking workers with more formalized training who have the skills of both computer and life sciences.
- For science technician jobs in the pharmaceutical and medicine manufacturing industry, most companies prefer to hire graduates of technical institutes or junior colleges or those who have completed college courses in chemistry, biology, mathematics, or engineering. Some companies, however, require science technicians to hold a Bachelor's degree in a biological or chemical science.
- Because biotechnology is not one discipline, but the interaction of several disciplines, the best preparation for work in biotechnology is training in a traditional biological science, such as genetics, molecular biology, biochemistry, virology, or biochemical engineering. Individuals with a scientific background and several years of industrial experience may eventually advance to managerial positions.

## E TA in Action

The U.S. Department of Labor (DOL) has sought to understand and address the critical workforce needs of the biotechnology industry. DOL held forums with employers, representatives from industry associations, and others associated with the biotechnology industry to learn about their hiring and training needs and potential solutions to those challenges.

U.S. Secretary of Labor Elaine L. Chao has announced a series of investments totaling approximately \$18 million to support comprehensive partnerships that include employers, educators, the public workforce system, labor-management organizations, and other entities. These innovative approaches address the following workforce needs of business while also effectively helping workers find good jobs with good wages and promising career pathways in the biotechnology industry:

- expanding the pipeline of youth by creating awareness of biotechnology and biotechnology careers at the elementary and high school levels;
- helping alternative labor pools gain industry-defined skills and competencies;
- developing alternative training strategies such as apprenticeship;
- developing tools and curricula for enhancing skill sets;
- enhancing the capacity of educational institutions;
- developing industry-defined career ladders and lattices;
- developing strategies to retain and retrain incumbent workers; and
- assisting transitioning individuals from declining industries to biotechnology careers.

## I nvestments

**Total Industry Investment is \$17,974,711**  
**Total Leveraged Resources are \$11,376,788**

**Alameda County Workforce Investment Board (CA)**  
*Bay-Area Bio-Tech Consortium Career Pathway Project*  
Grant amount: \$2,000,000; Leveraged amount: \$665,000

**Delaware Workforce Investment Board (DE)**  
*Delaware Workforce Investment Board Youth Biotechnology Initiative*  
Grant amount: \$250,000

**Forsyth Technical Community College (NC)**  
*Textiles to Technology Biotechnology Retraining Program*  
Grant amount: \$754,146; Leveraged amount: \$150,828

**Forsyth Technical Community College (NH, IA, WA, CA, NC)**  
*National Center for the Biotech Workforce*  
Grant amount: \$5,000,000; Leveraged amount: \$7,490,000

**Indian Hills Community College (IA)**  
*Iowa Biotechnology/Bioprocessing Workforce Development Project*  
Grant amount: \$996,250; Leveraged amount: \$231,474

**Lakeland Community College (OH)**  
*Biotechnology Workforce Development Program*  
Grant amount: \$333,485; Leveraged amount: \$92,892

**Massachusetts Biotechnology Education Foundation (MA)**  
*Massachusetts BioCareer Lab*  
Grant amount: \$1,372,250; Leveraged amount: \$350,000

**Pittsburgh Life Sciences Greenhouse (PA)**  
*Biotechnology Training: Creating a Hybrid Professional*  
Grant amount: \$2,433,160; Leveraged amount: \$400,000

**The San Diego Workforce Partnership (CA)**  
*A Partnership for Defining the Biotech Workforce*  
Grant amount: \$2,510,117; Leveraged amount: \$1,756,066

**Workforce Alliance, Inc. (FL)**  
*Florida Atlantic University (FAU) Biotech Training Program*  
Grant amount: \$2,325,303; Leveraged amount: \$240,528

## R esources

For additional background information about the industry and details on the grants, information about employment and training opportunities, and workforce development tools for employers, educators, and workforce professionals please refer to the following: [www.doleta.gov/BRG](http://www.doleta.gov/BRG), [www.careervoyages.gov](http://www.careervoyages.gov), [www.careeronestop.org](http://www.careeronestop.org), and [www.workforce3one.org](http://www.workforce3one.org).