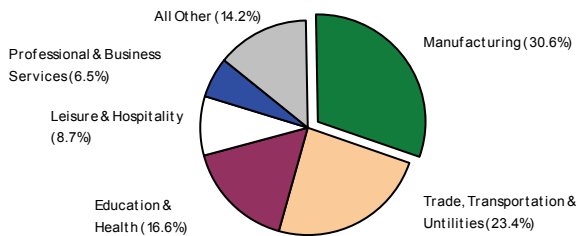


Availability of Skilled Labor in the Opportunity² Region for Biotechnology

Background

The total employment in the eight-county Opportunity² Region between 2000 and 2008 held constant at around 74,000 workers. **In 2008 the largest industry sector was Manufacturing, which accounted for 30.6% of industrial employment.** From 2000 to 2008, Manufacturing employment grew by 1.7% while nationwide manufacturing employment declined by 12.0%.

Opportunity² Industry Employment



The Region's percentage of industrial employment in Manufacturing (30.6%) is significantly greater than the Manufacturing percentage in the State of Iowa (18.3%) and in the nation (11.8%). Biotechnology is a key segment of the Manufacturing Sector in the Region.

The average wage for the Manufacturing Sector in the Opportunity² Region in 2008 was \$21.77 per hour, which is below the averages for the State of Iowa (\$22.68) and the nation (\$26.15).

Iowa Bioprocessing Center

To attract Biotechnology companies to Southeast Iowa, the 1,600-acre Iowa Bioprocessing Center has developed in Eddyville, Iowa. To date, four companies have clustered together in the Center, and they have invested more than \$1.5 billion in facilities engaging in value-added agriculture. A Cargill Corn Milling plant currently serves as the hub of this cluster where businesses transform the by-products of corn into a variety of consumer products through high tech biotechnology processes. The other international companies that are located in the Center include Ajinomoto Heartland, Ajinomoto Food Ingredi-

ents, and Wachter Chemical. Additional sites are available in the Center for other Biotechnology companies.

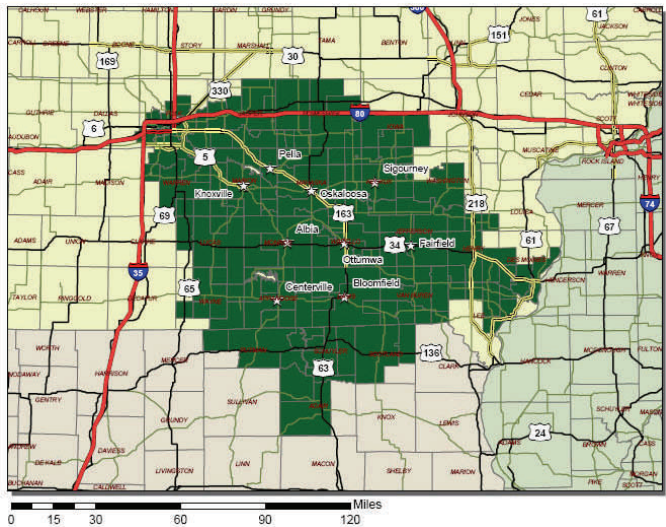


Laborshed Study

A Laborshed is defined as the area or region from which an employment center draws its commuting workers. Laborshed studies show the distribution of the workers irrespective of natural or political boundaries. Laborsheds also address the underemployment, the ability and willingness of current and perspective employees to change employment within the workforce, current and desired occupations, wages, hours worked, and distance willing to commute to work.

In 2008 Iowa Workforce Development (IWD) completed a study of the Opportunity² Region. This study found that this Region's Laborshed covers a wide geographical area.

Opportunity² Laborshed Region



Since Opportunity² covers a large geographical area (approximately 150 miles by 150 miles), it has several central employment centers across the Region. IWD concluded that this region actually consists of nine Laborsheds that have some overlap. The following shows the size of these Laborsheds, but because of the overlaps, these Laborsheds cannot be added together :

Laborshed Area	Total Adj. Labor Force
Albia	60,906
Bloomfield	52,590
Centerville	46,175
Fairfield	73,267
Knoxville	154,232
Oskaloosa	103,788
Ottumwa	80,738
Pella	313,650
Sigourney	41,690

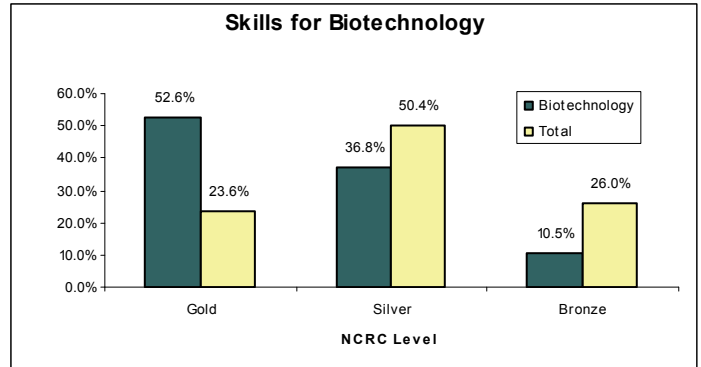
In the Laborshed Study, telephone surveys were conducted of adults in the Region. Nearly 5% of the respondents said they were underemployed due to inadequate hours, mismatch of skills, or low pay. Nearly one-fourth (24.2%) of those that are fully employed stated that they would be willing to change employment for the right opportunity. There is potential to expand the Region's workforce as 30% of the homemakers and 17% of the retirees expressed an interest in obtaining employment. The complete Laborshed Study can be found at <http://www.opportunitysquared.com>.

Skills for Biotechnology

The U.S. Department of Labor's O*Net Occupational Database serves as the nation's primary source of occupational information providing comprehensive information on key attributes and characteristics on over 900 occupations. ACT, a worldwide leader in skills measurement, has developed the WorkKeys[®] System, which measures the skills required for occupations (Job Profiles) and the skills possessed by individuals. ACT has aligned its database of over 15,000 Job Profiles with O*Net occupations to create Occupational Profiles for nearly all O*Net occupations including all of the 19 occupations in Biotechnology.

In 2007 ACT launched the National Career Readiness Certificate (NCRC), which is now part of the National Association of Manufacturers-Endorsed Manufacturing Skills Certification System. The NCRC is based on the three core WorkKeys skills—Applied Mathematics, Locating Information, and Reading Information. Based on the scores on these three WorkKeys assessments, an individual may qualify for one of three levels of Certificate: Gold, Silver, and Bronze. Based on the skill requirements in the Occupational Profiles, ACT has determined the level of Certificate required for each of these occupations. ACT has determined

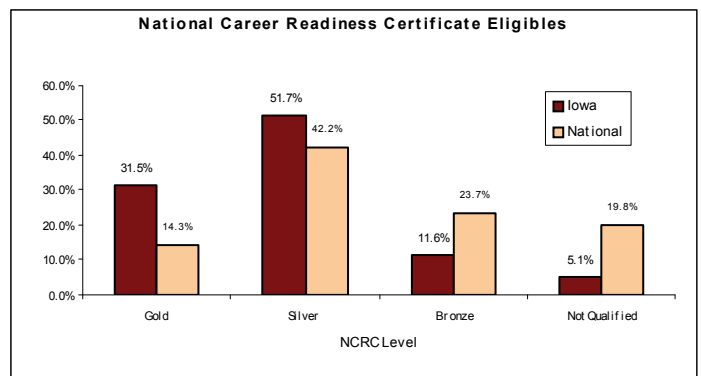
that 10 of the 19 occupations in Biotechnology (52.6%) require a Gold Certificate, which represents the highest skill level, and 7 occupations require a Silver Certificate (36.8%). As can be seen in the following graph, Biotechnology occupations require a significantly higher percentage of Gold skills than are required by all the occupations in the O*Net Occupational Database:



Therefore, to support the skills needed for occupations in this industry, a region needs a high-skilled workforce.

Skills of the Opportunity² Workforce

Over 800,000 individuals nationwide have taken the three WorkKeys for the NCRC and approximately 5,000 individuals in the Iowa have taken these same WorkKeys. The following graph compares the certificate results for the State of Iowa and the nation.



As can be seen from this graph, **31.5% of the individuals in the Iowa qualified for a Gold Certificate, which is more than double the percentage nationwide.** In addition, Iowa has a greater percentage of Silver Certificates compared to the U.S. total. Nationwide nearly 1 out of 5 individuals do not qualified for any Certificate while only 1 out of 20 in the Iowa did not qualify for a Certificate. Therefore, it can be concluded that **the workforce skills in the Iowa are significantly greater than those in the nationwide workforce.**

Currently, a study is underway to measure the skills of the workforce in the Opportunity² Region. Given that the level of Educational Attainment in the Region is similar to that for the State, it is anticipated that the skill levels in Opportunity² are very similar to the statewide skill levels.

Education

Education is a key strength of the Region. Annually, the State of Iowa is one of the nation's leaders in scores on ACT and SAT college entrance examinations. Opportunity²'s strong primary and secondary school systems provide an excellent background for the Region's workforce.

Indian Hills Community College (IHCC), located in Ottumwa, serves the Opportunity² Region. IHCC has three campus locations in the Region and an enrollment of over 5,100 students. In 2007, Indian Hills awarded 711 Associate Degrees and 378 Certificates.



IHCC offers the following Associate degree programs to prepare students for careers in Biotechnology:

- Bioprocess Technology
- Chemistry
- Ethanol Plant Technician
- Renewable Energy Technology

A certificate program in Process Control Technician is offered by IHCC.

Due to proximity, some of the Region's residents in western and northern Opportunity² attend one of the six Des Moines Area Community College (DMACC) campuses. DMACC offers a degree program in Biotechnology.

The following are the four-year post-secondary institutions located in the Region:

- Buena Vista University, Ottumwa, IA
 - Central College; Pella, IA
 - Maharishi University of Management; Fairfield, IA
 - William Penn University; Oskaloosa, IA
- Iowa State University has an Outreach Center in Ottumwa, IA, which is centrally located in the Region.

Iowa Bioprocess Training Center

Located in the Iowa Bioprocessing Center is the Iowa Bioprocess Training Center, which is operated by Indian Hill Community College. This is the only center in the nation that is designed specifically to meet the biotechnology needs of the value-added agriculture industry. The Iowa Bioprocess Training Center houses a two-year credit program in Bioprocess Technology, as well as a new Process

Control Technician certificate program. In addition, several biotechnology training courses are offered through Iowa BioDevelopment. Special features of the Training Center include a fully functional fermentation pilot plant/training laboratory, a bioprocess training laboratory, and virtual reality software simulating a fermentation plant for training purposes.



Job Training Program

Iowa's Industrial New Jobs Training Program (260E) provides businesses, which are expanding their existing Iowa workforce or are locating a new operation in Iowa, with employee training. This training is available via Iowa's community colleges and is financed by the community college through a bond issue. Depending on wages paid, the business then diverts 1.5 or 3 percent of the Iowa state withholding taxes generated by the new positions to the community college to retire the bonds. Because of this structure, the training is available at what is essentially no cost since the bonds are retired with dollars that otherwise have been paid to the state as withholding taxes. In addition to increasing worker productivity and company profitability, businesses participating in the Iowa New Jobs Training Program may also be eligible for reimbursement up to 50% of the annual gross payroll costs expended for on-the-job training, as well as a corporate tax credit if Iowa employment is increased by at least 10%.

Summary

From the perspective of skilled labor, Opportunity² offers an employer in Biotechnology several significant advantages:

- A highly skilled laborforce
- Wages that are below the national average
- A regional workforce development program that measures the skills of its workers and is structured to improve the skills of the region's workforce
- Excellent educational programs that prepare students for careers in Biotechnology
- A high quality state job training program that provides job and industry training
- A proactive program to interest both students and adults in careers in Biotechnology
- A quality-of-life that is attractive to Iowans and other located in the central U.S.

Contact Information

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