

Occupational Profile: Biomedical Engineers

GENERAL OCCUPATION DESCRIPTION

Apply knowledge of engineering, biology, and biomechanical principles to the design, development, and evaluation of biological and health systems and products, such as artificial organs, prostheses, instrumentation, medical information systems, and health management and care delivery systems.

Source: O*NET online. <http://online.onetcenter.org>

REQUIRED EDUCATION

As shown in the table to right, 52% of interviewed employers reportedly require a two-year degree or the equivalent, while an additional 48% require a four-year degree or more.

Required Education	
Percent of Employers Requiring HS Diploma or Less	0%
Percent of Employers Requiring 2-Year Degree or Equiv	51.66%
Percent of Employers Requiring BS Diploma or More	48.34%

Source: Bureau of Labor Statistics

WAGES

Biomedical Engineer is considered a high-wage occupation, with good possibility for wage advancement with experience. Employers in Greater Phoenix and the State of Arizona generally pay lower as compared with the overall United States.

Location	Pay Period	2005				
		10%	25%	Median	75%	90%
United States	Hourly	\$21.18	\$26.47	\$34.54	\$43.66	\$54.61
	Yearly	\$44,100	\$55,100	\$71,800	\$90,800	\$113,600
Greater Phoenix	Hourly	\$17.74	\$18.96	\$20.99	\$26.85	\$33.27
	Yearly	\$36,917	\$39,456	\$43,680	\$55,875	\$69,235
Arizona	Hourly	\$17.90	\$19.64	\$23.05	\$33.09	\$45.47
	Yearly	\$37,200	\$40,900	\$47,900	\$68,800	\$94,600

Source: Bureau of Labor Statistics

As shown in the table to right, a national comparison of wages for this occupation reveals Arizona ranks 31st in terms of median wages.

RANK	Location	Median Wage 2005	
		Hourly	Annual
1	Maryland	\$40.34	\$83,900
2	Massachusetts	\$40.04	\$83,300
3	Virginia	\$39.73	\$82,600
4	California	\$39.37	\$81,900
5	Wisconsin	\$38.72	\$80,500
31	ARIZONA	\$23.05	\$47,900

Source: Bureau of Labor Statistics

The table below provides a comparison of wages by sub-industry for the Greater Phoenix region (2005). As shown, information was only available for one employment sector, "Hospitals."

Wages by Industry: Greater Phoenix MSA (2005)	Rounded Employment	Mean Wage	10th Percentile Wage	25th Percentile Wage	Median Wage	75th Percentile Wage	90th Percentile Wage
Hospitals	.	\$22.96	\$17.74	\$18.96	\$20.99	\$26.85	\$33.27

EMPLOYMENT

As shown in the table below, this occupation has a projected 6% growth rate over 10 years (between 2003 and 2013) for the Greater Phoenix region. An average of only 1 job opening is projected per year.

	10-YEAR CHANGE		Percent Change	AVERAGE ANNUAL		
	Employment 2004	Employment 2014		Job Openings	Growth	Separations
United States						
Biomedical engineers	9,700	12,700	31%	460	n/a	n/a
Arizona						
Biomedical engineers	140	200	47%	10	n/a	n/a
Greater Phoenix						
Biomedical engineers	35	37	6%	1	n/a	1

Source: Bureau of Labor Statistics

*Job Openings refers to the average annual job openings due to growth and net replacement.

Source: Bureau of Labor Statistics

**N/A is displayed in cases where data is not available or cannot be published because of federal data privacy standards.

Comparison of employment projections for top five regions for Biomedical Engineer

As shown in the table to right, a national comparison reveals the State of Arizona ranks 4th in terms of projected 10-year growth for this occupation (47%).

RANK	Location	Employment		Percent Change
		2004	2014	
1	Utah	200	330	69%
2	Colorado	220	350	56%
3	North Carolina	270	410	51%
4	ARIZONA	140	200	47%
5	Minnesota	510	750	45%

Source: Bureau of Labor Statistics

Employment by Industry

The table below shows the industries that most commonly employ Biomedical Engineer, and the proportion of employment accounted for at the national level. As shown, “Research and development in the physical, engineering, and life sciences” is the largest employer for this occupation (18.7%).

Percent of Employment Nationally by Industry	
Percent	Industry
18.7%	Research and development in the physical, engineering, and life sciences
15.6%	Pharmaceutical and medicine manufacturing
14.9%	Medical equipment and supplies manufacturing
12%	General medical and surgical hospitals, private
8.7%	Self-employed workers, secondary job
6.1%	Navigational, measuring, electromedical, and control instruments manufacturing
3.6%	State government educational services

Source: Bureau of Labor Statistics

Geo-Location Overlay of Employers with 10 or More Employees that Potentially Employ Occupation (n = 108)

