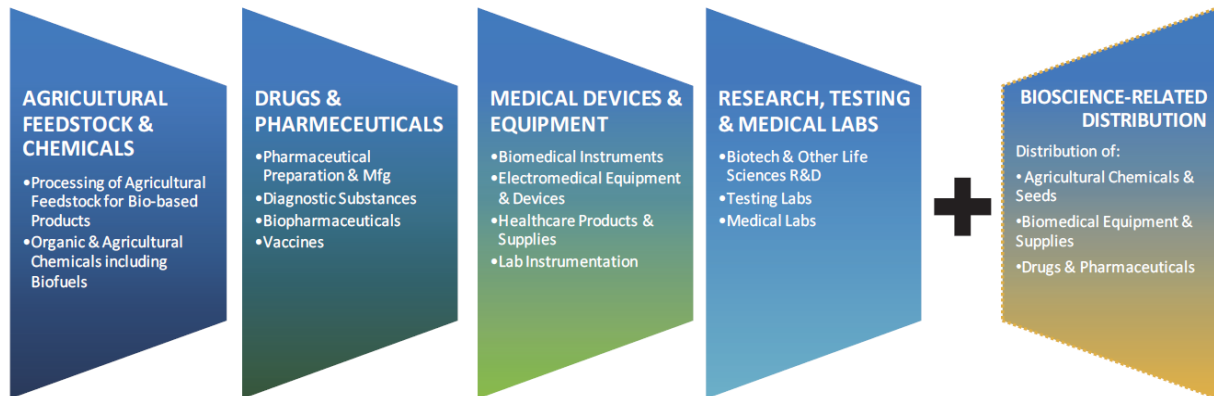


Life Sciences and Biotechnology Gap Analysis San Diego and Imperial Counties Region Summary of Preliminary Results

Definition



Source: Battelle 2012

Additional Industries Considered:

- Colleges, Universities, and Professional Schools
- Employment Services

Demand Side

Entry-Level Jobs

6 occupational titles (up to B.A./B.S degree)
3,400 current jobs
28% 5-year growth projected
\$21 median hourly wages
280 annual projected openings (EMSI)
560 online job ads in 2013 (Burning Glass)

- Biological Technicians
- Chemical Technicians
- Medical and Clinical Laboratory Technicians
- Quality Control Analysts
- Manufacturing Production Technicians
- Inspectors, Testers, Sorters, Samplers, Weighers

Pathway Jobs

12 occupational titles (Graduate level/experience)
6,700 current jobs (2013)
20% 5-year growth projected
\$39 median hourly wages

- Natural Sciences Managers
- Lab Managers
- Biostatisticians
- Biomedical Engineers
- Biochemists and Biophysicists
- Microbiologists...

Skills in Demand

Specialized Skills	%Job Ads	Baseline Skills	%Job Ads
Chemistry	22%	Quality Assurance and Control	37%
Inspection	17%	Communication Skills	31%
Good Mfg. Practices (GMP)	17%	Writing	23%
Biology	10%	Organizational Skills	22%
Data Entry	10%	Research	20%
Validation	10%	Detail-Oriented	18%
Cleaning	9%	Microsoft Excel	17%
Laboratory Equipment	9%	Computer Skills	15%
Good Lab. Practices (GLP)	9%	Troubleshooting	14%
Calibration	8%	Problem Solving	11%

Source: Burning Glass Labor Insight, full year 2013

Top Employers

	Job Ads
Laboratory Corp. of America	59
UC San Diego	56
Dianon Systems Incorporated	24
Scripps Research Institute	21
Genentech, Inc.	16
Shire/Organogenesis	16
Scantibodies Laboratory Inc.	13
Life Technologies/ThermoFisher	12
Gilead Sciences	10
Becton Dickinson	9
Novartis	9
Affymetrix Inc	7
Sanford Medical Research Inst.	7

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Supply Side

College	Program/s	Award Type/s	Supply for Immediate Employment*
MiraCosta	Biotechnology – Research and Development	AS	26
	Biotechnology – Research and Development	Certificate of Achievement	
	Biotechnology – Laboratory Skills	Local Certificate*	
	Biotechnology – Bioprocess Technology Track	Certificate of Achievement	
Grossmont	Grant Funded	No Award	n/a
SD City	Applied Biology Track	AS	23
	Applied Biotechnology	Local Certificate	
SD Miramar	Applied Biology	AS	25
	Applied Biotechnology-Analytical Chemistry Track	Local Certificate	
	Applied Biotechnology-Molecular Biology Track	Local Certificate	
Southwestern	Biotechnology	AS	20
	Biotechnology	Certificate of Achievement	
Total			94

*Supply = the actual number of unique students who are work-force ready as determined by interviews of relevant faculty or department heads. Estimated supply does not include transfer students or incumbent workers.

Gap Analysis

DEMAND

Annual projected job openings (EMSI) **263**
Annual job advertisements (Burning Glass) **560**

SUPPLY

Community College Trainees 94
Bachelor's Degrees 15
Total job ready 109

Overall Observations

- Actual job titles that employers are using when advertising their openings differ significantly from the standard occupational titles used by the U.S. Bureau of Labor Statistics and California's EDD. Titles that describe entry level biotechnology jobs include Laboratory Assistant/Technician, Research Assistant/Associate, Quality Control Technician/Assistant, Clinical Laboratory Scientist (CLS), Medical Laboratory Technician (MLT), Animal Technician, and others. ***It is important for community colleges in the region to make students aware of the actual job titles and job opportunities available to them upon graduation on the labor market.***
- Gap analysis suggests that the regional community college ***might need to increase their capacity/add programs to meet the demand of employers for entry level workforce in biotechnology.***
- According to official classification of the occupational titles considered, Bachelor's degree is a minimum required credential for most jobs. However, employer feedback and the analysis of job advertisements in the region suggest that employers value hands-on experience and skills more than a four-year credential. ***Employers confirmed that community college students who receive certificates and/or associate degrees and have hands-on laboratory training are desirable candidates for hiring.***
- Based on employer feedback, the colleges should make sure that their Biotechnology related programs are preparing students in: Good Manufacturing Practices (GMP), Quality Control, fundamentals of scientific knowledge ("scientific common sense"), as well as workplace skills and abilities. ***It is recommended that colleges review their programs for these knowledge/skill areas to make sure they are incorporated into curricula.***
- Certifications are not always required by employers (81% of the job advertisements considered did not list a certification requirement). However, employers prefer trainees with a certification over those without it when considering candidates during a selection process. Phlebotomy certification is important to employers. Employers noted that phlebotomy knowledge/skills are becoming increasingly important to biotech employers. ***Colleges should consider preparing students to take industry certifications.***