

Gap Analysis
Alignment Summit
2014

BioTech
Sector

Los Angeles County

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The Life Sciences/Biotech sector is a complex evolving group of industries of 25 NAICS codes.

Subsectors include:

- 1) Agricultural feedstock and chemicals,
- 2) Bioscience-related distribution,
- 3) Drugs and pharmaceuticals,
- 4) Medical devices and equipment,
- 5) Research, testing, and medical laboratories.

Total employment in LA-Long Beach-Santa Ana Metropolitan Area

Medical Devices - 27,025	1 st place in US Metropolitan Areas
Research, Testing, Medical labs - 22,570	3 rd place in US Metropolitan Areas
Drugs and Pharmaceuticals – 11,620	5 th place in US Metropolitan Areas

25% of 3,297 Entry level CA postings were for jobs in LA/OC (Burning Glass 2014)

Six most common jobs for which AS or CC Certificated students successfully compete:

Occupation (O*NET Code)	Description
Biological Technicians (19-4021)	Assist biological and medical scientists in laboratories. Set up, operate, and maintain laboratory instruments and equipment, monitor experiments, make observations, and calculate and record results. May analyze organic substances, such as blood, food, and drugs.
Chemical Technicians (19-4031)	Conduct chemical and physical laboratory tests to assist scientists in making qualitative and quantitative analyses of solids, liquids, and gaseous materials for research and development of new products or processes, quality control, maintenance of environmental standards, and other work involving experimental, theoretical, or practical application of chemistry and related sciences.
Medical and Clinical Laboratory Technicians (29-2012)	Perform routine medical laboratory tests for the diagnosis, treatment, and prevention of disease. May work under the supervision of a medical technologist.
Quality Control Analysts (19-4099.01)	Conduct tests to determine quality of raw materials, bulk intermediate and finished products. May conduct stability sample tests. <i>Part of 19-4099 Life, Physical, and Social Science Technicians, All Other</i>
Manufacturing Production Technicians (17-3029.09)	Set up, test, and adjust manufacturing machinery or equipment, using any combination of electrical, electronic, mechanical, hydraulic, pneumatic, or computer technologies. <i>Part of 17-3029 Engineering Technicians, Except Drafters, All Other</i>

Estimate of LA/OC Industry Demand for AS/CC Certificated Applicants (EMSI 2014)

Occupation (SOC)	2013 Jobs	2018 Jobs	13-18 Change	13-18 Replace-ments	% Change	Open-ings	Annual Open-ings	Median Hourly Wages
Manufacturing Production Technicians (17-3029.09)	188	206	18	19	10%	37	7	\$29.12
Biological Technicians (19-4021)	572	600	28	103	5%	131	26	\$20.63
Chemical Technicians (19-4031)	759	861	102	61	13%	163	33	\$19.94
Quality Control Analysts (19-4099.01)	157	173	19	35	12%	54	11	\$21.56
Medical and Clinical Laboratory Technicians (29-2012)	1,871	2,051	180	187	10%	367	73	\$17.96
Inspectors, Testers, Sorters, Samplers and Weighers (51-9061)	2,210	2,576	366	265	17%	631	126	\$17.01
TOTAL	5,757	6,467	713	670	12%	1,383	276	

Estimate of LA/OC CC Supply (DSN Survey 2014):

LA Colleges	Programs	Skill Builder Levels	Capacity Estimate	2014 Supply Estimate
Citrus	Program under construction	Basic	15?	0
East LA	Biotechnology – Electron Microscopy Histotechnology	Specialty	?	0
El Camino	Program revitalization	Basic	15?	0
LA Mission	Program under construction	Basic	?	0
LA Trade Tech	Biotechnology – Biomanufacturing	Basic	?	0
LA Valley	Biotechnology – Biomanufacturing DOL Grant-based training	Basic	20	20
Mt. San Antonio	Histotechnology	Specialty	20	20
Pasadena	Biotechnology – 5 levels	Basic, Advanced	30	10
OC Colleges	Programs	Skill Builder Levels	Capacity Estimate	2014 Supply Estimate
Fullerton	Biotech: new 3-college stacked certificates	Basic	20	2
Irvine Valley	Program under construction	Basic	15?	0
Santa Ana	Biotech: new 3-college stacked certificates	Basic	20	10
Santiago Canyon	Biotech: new 3-college stacked certificates	Basic	20	3

Bottom Line: Biotech Industry in LA/OC is asking for more entry-level workers than LA/OC community colleges are currently supplying.

Demand: 276 (EMSI)

Supply: 65+ job-ready trainees 2014

GAP = 211 job-ready CC trainees

Opportunities to close Demand/Supply Gap using CTE Enhancement

1. Increase CCC capacity to create workforce

- a) Leverage Pathways Programs from HS Academies, ROP and provide work-based learning.
- b) Create Fast track for BS Grads using Skills Builder Basic courses.
- c) Use Skills Builder Advanced and Specialty courses to “upskill” incumbent workers.

2. Leverage regional pathways grants

- a) CA Pathways Trust Grants
- b) Youth CareerConnect Grants
- c) CTE Enhancement Funding
- d) Amgen Biotech Experience HS programs –
 - a. Sites- Pasadena, Fullerton, Pierce colleges and CSUCI
 - b. Over 200 LA/OC high schools use a recombinant DNA hands-on curriculum with training and materials at no cost to the schools (aligned with current standard)_.

3. Align programs with industry needs

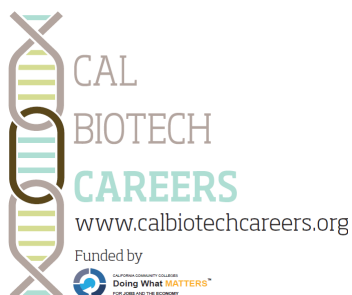
- a) Use faculty externships to create relationships with industry
- b) Develop curriculum to create an work-based environment in training
- c) Develop curriculum to get real work done on campus

4. Purchase Equipment

- a) Equipment on which students can be trained to do project-based work.

Resources:

- 1. Amgen Biotech Experience: (<https://www.amgenbiotechexperience.com>)
- 2. Battelle 2014 BIO Report (<http://www.bio.org/articles/battellebio-state-bioscience-jobs-investments-and-innovation-2014>)
- 3. Skill Builder and Alignment information based on Booth and Barr "The Missing Piece" (http://www.learningworksca.org/wp-content/uploads/2013/10/MissingPiece_05.pdf)
- 4. Data adapted from “Supply and Demand Analysis: Life Sciences & Biotechnology-Entry-Level Workforce In CA JULY 2014” by Centers of Excellence (Draft)



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