



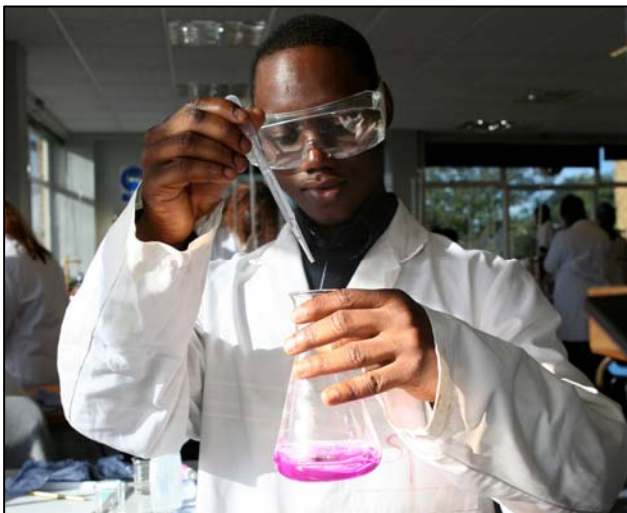
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CENTERS OF EXCELLENCE
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MEDICAL LABORATORY TECHNICIANS

INLAND EMPIRE REGION
ENVIRONMENTAL SCAN

NOVEMBER 2008



CENTER OF EXCELLENCE,
INLAND EMPIRE

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Scope

This report was requested from the Center of Excellence by Crafton Hills College. Data compiled in this report covers San Bernardino and Riverside Counties (The Inland Empire).

Data was drawn from external sources including EMSI software supported by Economic Modeling Specialists, Inc. and California's Labor Market Information Division. No primary research was conducted nor was industry validation conducted in compiling this report.

Data Sources and Calculations

Introduction

EMSI data is a compilation and harmonization of more than 80 government and private-sector sources. Updated every six months and based on the most recent data available, the dataset covers the entire US population and economy, down to each individual ZIP code. It includes data for industries, occupations, demographics, postsecondary institutions, and selected economic indicators.

Industry Data

In order to capture a complete picture of industry employment, EMSI basically combines covered employment data from Quarterly Census of Employment and Wages (QCEW) produced by the Department of Labor with total employment data in Regional Economic Information System (REIS) published by the Bureau of Economic Analysis (BEA), augmented with County Business Patterns (CBP) and Nonemployer Statistics (NES) published by the U.S. Census Bureau. Projections are based on the latest available EMSI industry data, 15-year past local trends in each industry, growth rates in statewide and (where available) sub-state area industry projections published by individual state agencies, and (in part) growth rates in national projections from the Bureau of Labor Statistics.

Occupation Data

Organizing regional employment information by occupation provides a workforce-oriented view of the regional economy. EMSI's occupation data are based on EMSI's industry data and regional staffing patterns (showing the average mix of job types in various industries) taken from the Occupational Employment Statistics program (U.S. Bureau of Labor Statistics). Wage information is augmented by data from the American Community Survey (U.S. Census). Replacement jobs and annual openings estimates are based on national survey data by occupation. As in the official government statistics, occupations are categorized by Standard Occupational Classification (SOC) codes and titles.

Completions Data

Completions are voluntarily reported by postsecondary institutions through the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS). Completions are organized by program using the Classification of Instructional Programs (CIP) codes and titles.

State Data Sources

This report uses state data from the following agencies: California Labor Market Information Department.

Relating Occupations to Postsecondary Programs

The occupation-to-program (SOC-to-CIP) "crosswalk" is a large table that describes which occupations are generally trained for by each standard postsecondary program (based on Classification of Instructional Programs [CIP] codes and titles, last updated in 2000). EMSI starts with the official crosswalk published by the U.S. Department of Education and customizes it in various ways to make it more accurate and practical for comparing programs to regional labor markets.

Introduction and Contents

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Purpose and Goals

This report is designed to integrate and analyze data from multiple sources to help educational institutions discover regional labor market needs for certain postsecondary programs of study. The overall goal is to help a college align their program offerings the economy and labor market of its service region. To do this, the report selects a set of focus occupations, determines the regional job outlook for them, and compares this to the number of recent graduates in related programs at regional educational institutions. While this is a first step toward a supply/demand analysis, for increased accuracy it could be extended with survey-based information from local employers regarding their hiring outlook and recruitment sources.

The occupation employment and wage numbers are from EMSI's national Complete Employment database, which is built using numerous published data sources from the federal Bureau of Labor Statistics, Bureau of Economic Analysis, and Bureau of the Census. In addition, the report uses industry/occupation data and projections created by the State of California. The completions-by-program and program-to-occupation links use data from the U.S. Department of Education.

These data sources have been specially processed and harmonized to provide more complete and detailed data than any individual source used. For more information, see the final page of this report.

Focus Colleges

Inland Empire & Desert Region Consortium

Region Definition

Riverside, San Bernardino

Key Terms and Concepts

Programs: Courses of postsecondary study defined by CIP (Classification of Instructional Programs) codes.

Occupation: A category of workers defined by the Standard Occupational Classification (SOC).

Relating occupations to Programs: Links were determined using information from the U.S. Department of Education.

Replacement Jobs: The estimated number of job openings in an occupation due to retirement, turnover, and other factors aside from job growth. Based on national percentages by occupation.

Annual openings: The sum of new jobs and estimated replacement jobs for a given occupation, divided by the number of years in the timeframe.

Earnings: For industries, total annual earnings per worker is reported; these earnings include wages, salaries, profits, and benefits. Occupational earnings are reported as median hourly wage only.

Jobs: Full-time and part-time positions held by proprietors and payroll employees in the public or private sector. May exceed actual worker count.

Projections: Estimates of future job or population numbers based on (1) recent historical regional trends and (2) published forecasts created by a consensus of state and federal agencies.

Executive Summary

Overview

This report focuses on **2 occupations** which are expected to provide **48 annual job openings** from 2008-2013 in the San Bernardino and Riverside two-county area. Meanwhile, in 2007, area colleges produced **17 graduates** in **11 programs** related to these occupations. The numbers indicate an opportunity for area colleges to expand their offerings in this field.¹

Focus Occupations

The following occupations were selected for analysis in this report:²

- Medical and clinical laboratory technologists
- Medical and clinical laboratory technicians

Focus Programs

The key occupations above correspond to the following standard postsecondary program titles:³

- Cytotechnology/Cytotechnologist Clinical
- Laboratory Science/Medical Technology/Technologist Histologic
- Technology/Histotechnologist
- Cytogenetics/Genetics/Clinical Genetics Technology/Technologist Renal/Dialysis
- Technologist/Technician Clinical/Medical
- Laboratory Science and Allied Professions, Other Clinical/Medical Laboratory Assistant
- Blood Bank Technology Specialist
- Hematology Technology/Technician
- Clinical/Medical Laboratory Technician
- Histologic Technician

1. Annual job openings: new plus replacement jobs divided by years in the timeframe. Note that openings may be filled from various sources besides new graduates, and that graduates may work in occupations unrelated to their degree.

2. Occupations are defined by the federal SOC system.

3. Programs are defined by the federal CIP system. The occupation-program crosswalk is based on the CIP-SOC crosswalk published by the U.S. Department of Education.

Labor Market Outlook

Aggregated data for all focus occupations:

	Region	State[s]	U.S.
2008 total jobs	1,350	26,275	316,085
2013 total jobs	1,490	28,867	344,459
2008-2013 growth	140	2,591	28,375
2008-2013 repl. jobs	99	1,946	23,417
Median hourly earnings	\$27.14	\$25.66	\$20.90

Focus Program Completions

"Completions" represents the total number of students to attain an award or degree at each given level in all the above college programs.

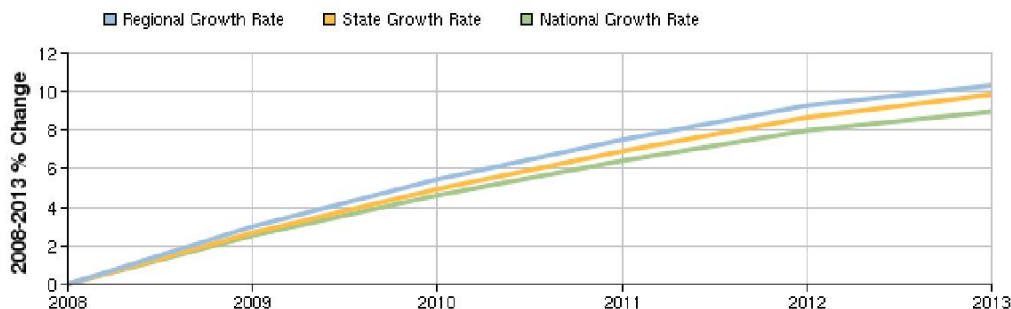
Award Level	2007 Completions (All Colleges in Region)
Award < 2 years	2
Associate's	-
Bachelor's	15
Postbaccalaureate Certificate	-
Master's	-
Doctor's	-
Professional	-
TOTAL	17

Source: U.S. Department of Education, National Center for Education Statistics: Integrated Postsecondary Education Data System (IPEDS).

Regional Job Outlook

Percent Change in Employment

This graph shows yearly percent growth compared to 2008. The Inland Empire is estimated to experience 10% growth compared to 9.8% within the state and 9% within the Nation.



Detailed Information by Occupation

The tables below summarize the regional job outlook for the focus occupations using employment projections and current wage data, indicating the demand for these kinds of workers and their pay scale.¹ Colleges which strive to be labor market responsive, maximize their economic impact, and generate a return on investment for public funds should generally focus program resources to support high-growth, high-wage occupations.

In analyzing two occupations (SOCs 29-2011 and 29-2012), the regional can expect an annual need for 48 trained workers (including replacement and additional openings).

Occupation Title	2008 Jobs	2013 Jobs	New Jobs	New & Rep. Jobs
Medical and clinical laboratory technologists	843	923	80	142
Medical and clinical laboratory technicians	507	567	60	97
	1,350	1,490	140	239

Source: EMSI Complete Employment - Fall 2008

Occupation Title	2008-13 Avg. Annual Openings			Median Hourly Earnings		
	Region	State[s]	U.S.	Region	State[s]	U.S.
Medical and clinical laboratory technologists	28	452	5,206	\$32.88	\$33.71	\$24.87
Medical and clinical laboratory technicians	19	456	5,153	\$17.63	\$17.37	\$16.48
TOTAL	48	907	10,358	\$27.14	\$25.66	\$20.90

Source: EMSI Complete Employment, 3/2008

1. Average annual openings: total new plus replacement jobs over the entire timeframe (5 years) divided by number of years in the timeframe. Projected new and replacement jobs can indicate demand, but are not necessarily equivalent to demand. The number is based on past regional performance of the industries that employ workers in the given occupations, combined with official, biannual state and federal ten-year estimates. Projections may underestimate demand if employers need these kinds of workers but are unable to hire qualified individuals to meet their needs, or if unforeseen business recruitment and growth outpace past trends. Similarly, projections may overestimate demand if there are unforeseen contractions in key employers, entire industries, or the national economy as a whole.

State & National Job Outlook

These two tables summarize the state and national job outlook for the focus occupations using employment projections and current wage data, indicating the demand for these kinds of workers and their pay scale.

State Job Outlook

Occupation Title	2008 Jobs	2013 Jobs	New Jobs	New & Rep. Jobs	Median Hourly Earnings
Medical and clinical laboratory technologists	13,329	14,601	1,272	2,259	\$33.71
Medical and clinical laboratory technicians	12,947	14,266	1,319	2,278	\$17.37
	26,275	28,867	2,591	4,537	\$25.66

Source: EMSI Complete Employment - Fall 2008

National Job Outlook

Occupation Title	2008 Jobs	2013 Jobs	New Jobs	New & Rep. Jobs	Median Hourly Earnings
Medical and clinical laboratory technologists	166,595	180,279	13,684	26,029	\$24.87
Medical and clinical laboratory technicians	149,490	164,181	14,691	25,763	\$16.48
	316,085	344,459	28,375	51,792	\$20.90

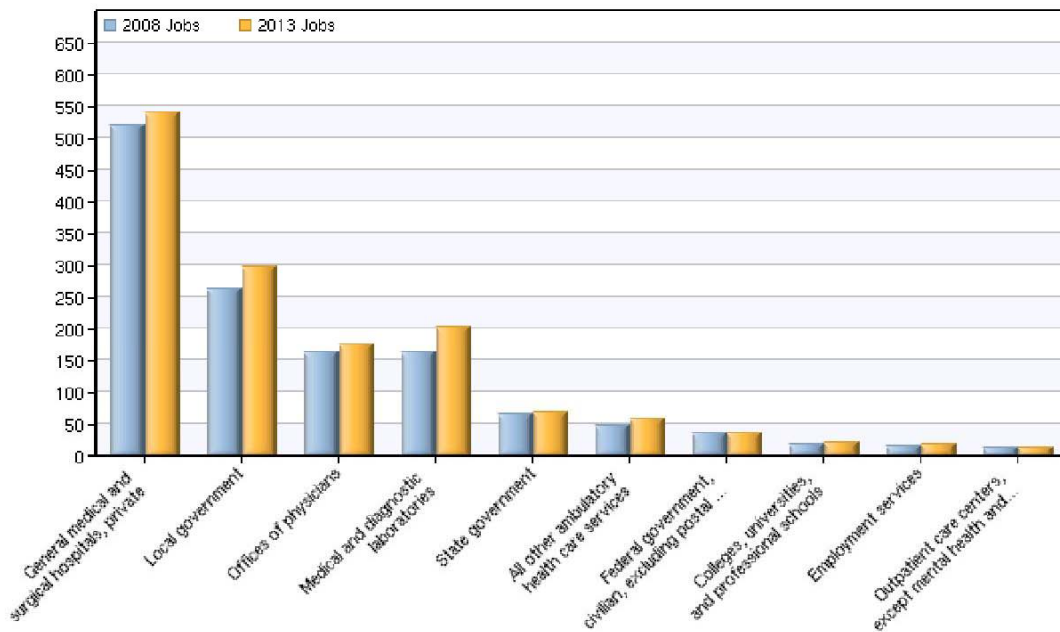
Source: EMSI Complete Employment - Fall 2008



Inverse Staffing Patterns

Industrial Makeup

These are the Inland Empire's top ten growing industries which employ the Medical Laboratory occupations. The largest employer of selected occupations are private hospitals, however medical and diagnostic laboratories will require an estimated 42 additional Medical Lab technician jobs within the next five years; the largest change amongst the top employers (see chart below).



NAICS Code	Description	2008 Jobs	2013 Jobs	Change	% Change
622100	General medical and surgical hospitals, private	520	541	21	4%
930000	Local government	264	299	35	13%
621100	Offices of physicians	163	175	12	7%
621500	Medical and diagnostic laboratories	161	203	42	25%
920000	State government	64	67	3	4%
621990	All other ambulatory health care services	48	58	10	23%
911000	Federal government, civilian, excluding postal service	35	35	0	-1%
611300	Colleges, universities, and professional schools	19	20	1	10%
561300	Employment services	14	19	5	34%
6214XX	Outpatient care centers, except mental health and substance abuse	12	13	1	10%

Regional Graduation Summary

Regional graduations ("completions" or number of awards/degrees granted) in the programs tied to the two selected Medical Laboratory Technician occupations are one indicator of workforce supply. (Other sources include in-migration of new workers to the region, promotion from within firms, and currently unemployed workers in the same or similar occupations.) The following table breaks down these graduations by program and award level at all institutions in the Inland Empire region. A zero entry for completers indicates the program is offered but had no completions, while a "-" indicates the program is not currently offered at all.

CIP Code	Program Title	Award Level	2007 Completions, Entire Region
51.1002	Cytotechnology/Cytotechnologist	Award of at least 1 but less than 2 academic years	2
		Bachelor's degree	2
51.1005	Clinical Laboratory Science/Medical Technology/Technologist	Bachelor's degree	13
51.1007	Histologic Technology/Histotechnologist	[all]	-
51.1010	Cytogenetics/Genetics/Clinical Genetics Technology/Technologist	[all]	-
51.1011	Renal/Dialysis Technologist/Technician	[all]	-
51.1099	Clinical/Medical Laboratory Science and Allied Professions, Other	[all]	-
51.0802	Clinical/Medical Laboratory Assistant	[all]	-
51.1001	Blood Bank Technology Specialist	[all]	-
51.1003	Hematology Technology/Technician	[all]	-
51.1004	Clinical/Medical Laboratory Technician	[all]	-
51.1008	Histologic Technician	[all]	-
TOTAL			17

Source: U.S. Department of Education, National Center for Education Statistics: Integrated Postsecondary Education Data System (IPEDS).

With only 17 completers (mostly at the Baccalaureate level) there is a regional opportunity, and need, for additional community college programs to supply the current and projected regional demand.

Occupational Programs & Completers

The following table provides detailed information for selected occupations and related programs, comparing estimated average annual openings in each occupation with recent completions (awards/degrees) in related programs at all institutions in the Inland Empire. One postsecondary program is linked to multiple occupations; this is shown in the final column of each table and is one indication that fewer program completers will likely enter the given occupation than the overall total would suggest. (Sources for this section include: EMSI Complete Employment, 3/2008 and the U.S. Department of Education, IPEDS.)

Medical and clinical laboratory technologists

2008-2013 Avg. Annual Openings: **28**

Median Hourly Earnings: **\$32.88**

Related Programs	2007 Completions, Entire Region	Other Occupations Linked to Program
TOTAL, ALL RELATED PROGRAMS	17	1
Cytotechnology/Cytotechnologist	4	1
Clinical Laboratory Science/Medical Technology/Technologist	13	-
Histologic Technology/Histotechnologist	-	-
Cytogenetics/Genetics/Clinical Genetics Technology/Technologist	-	-
Renal/Dialysis Technologist/Technician	-	-
Clinical/Medical Laboratory Science and Allied Professions, Other	-	-

Medical and clinical laboratory technicians

2008-2013 Avg. Annual Openings: **19**

Median Hourly Earnings: **\$17.63**

Related Programs	2007 Completions, Entire Region	Other Occupations Linked to Program
TOTAL, ALL RELATED PROGRAMS	-	1
Clinical/Medical Laboratory Assistant	-	1
Blood Bank Technology Specialist	-	-
Hematology Technology/Technician	-	-
Clinical/Medical Laboratory Technician	-	-
Histologic Technician	-	-

Appendix A: How to Use this Report

About the Centers of Excellence

The Centers of Excellence (COE), in partnership with business and industry, deliver regional workforce research customized for community college decision making and resource development.

The Centers are part of the California Community College's Economic and Workforce Development Network. The COEs are focused on building the capacity of the community colleges in the areas of Economic and Workforce Development and Career & Technical Education to enhance their ability to deliver education and training services in high growth industries, new technologies, and other clusters of opportunities. The Centers of Excellence aspire to be the premier source of regional economic and workforce information and insight for California's community colleges.

How to Use This Customized Report

The Centers of Excellence have undertaken Regional and College-Specific analyses to provide targeted and valuable information to community colleges on high growth industries and occupations.

This report is intended to assist the decision-making process of California Community College administrators and planners in addressing local and regional workforce needs and emerging job opportunities in the workplace as they relate to college programs. The information contained in this report can be used to guide program offerings, strengthen grant applications, and support other economic and workforce development efforts.

This report is designed to provide current industry data that will:

- Define potential strategic opportunities relative to an industry's emerging trends and workforce needs;
- Influence and inform local college program planning and resource development; and
- Promote a future-oriented and market responsive way of thinking among stakeholders.

Important Disclaimer

All representations included in this report have been produced from a secondary review of publicly and/or privately available data and/or research reports. Efforts have been made to qualify and validate the accuracy of the data and the reported findings. The purpose of this analysis is to assist colleges to respond to emerging market needs for workforce performance improvement. However, neither the Business and Workforce Performance Improvement, Centers of Excellence, COE host District or California Community Colleges Chancellor's Office are responsible for applications or decisions made by recipient community colleges or their representatives based upon this study including components or recommendations.