Medical Laboratory Technology (TOP 1205.00)

September 2022

Prepared by the South Central Coast Center of Excellence for Labor Market Research

Program Recommendation

This report was compiled by the South Central Coast[1] Center of Excellence to provide regional labor market data for the program recommendation – Medical Laboratory Technology. This report can help determine whether there is demand in the local labor market that is not being met by the supply from programs of study (CCC and non-CCC) that align with this occupation group.

Key Findings

- In the South Central Coast region, **the number of jobs related to Medical Laboratory Technology are expected to increase** for Diagnostic Medical Sonographers and Radiologic Technologists and Technicians and **remain steady** for Cardiovascular Technologists and Technicians, Nuclear Medicine Technologists, and Magnetic Resonance Imaging Technologists.

- Medical Laboratory Technology is anticipated to experience a **low risk of automation** for all five related occupations.

- In 2020 there were 428 regional completions in programs related to the occupations identified as aligned with Medical Laboratory Technology and 384 openings, indicating **supply is being met.**

- Typical entry-level education is an **Associate's degree** for all five related occupations.

- Completers of regional Medical Laboratory Technology programs, from the 2018-2019 academic year, had a **median annual wage upon completion of $30,916.**

- 86% of students are **employed within a year** after completing a program.

- 45% of students **attained a living wage** within a year of completion.

- Completers experienced an average of +**30%** change in earnings after exiting.

- 93% of students were **part-time**, 14% **skill builders**, 39% **first-generation**, and 80% **economically disadvantaged.**

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[1] The South Central Coast Region consists of San Luis Obispo County, Santa Barbara County, Ventura County, and the following cities from North Los Angeles County: Canyon Country, Castaic, Lake Hughes, Lancaster, Littlerock, Llano, Newhall, Palmdale, Pearblossom, Santa Clarita, Stevenson Ranch, and Valencia.

Occupation Codes and Descriptions

There are five occupations in the standard occupational classification (SOC) system that were identified as related to Medical Laboratory Technology for this analysis. The occupation titles and descriptions, as well as reported job titles, are included in Exhibit 1.

Exhibit 1 – Occupation, description, and sample job titles

SOC Code	Title	Description	Sample of Reported Job Titles
29-2031	**Cardiovascular Technologists and Technicians**	Conduct tests on pulmonary or cardiovascular systems of patients for diagnostic, therapeutic, or research purposes. May conduct or assist in electrocardiograms, cardiac catheterizations, pulmonary functions, lung capacity, and similar tests.	Cardiac Catheterization Laboratory Technologist, Cardiac Catheterization Technician, Cardiac Technician, Cardiology Technician, Cardiopulmonary Technician, Cardiovascular Technician, Cardiovascular Technologist (CVT), Electrocardiogram Technician (EKG Tech), Registered Cardiovascular Invasive Specialist (RCIS)
29-2032	**Diagnostic Medical Sonographers**	Produce ultrasonic recordings of internal organs for use by physicians. Includes vascular technologists.	Cardiac Sonographer, Diagnostic Medical Sonographer, Medical Sonographer, Registered Diagnostic Medical Sonographer (RDMS), Sonographer, Staff Sonographer, Ultrasonographer, Ultrasound Technician (Ultrasound Tech), Ultrasound Technologist
29-2033	**Nuclear Medicine Technologists**	Prepare, administer, and measure radioactive isotopes in therapeutic, diagnostic, and tracer studies using a variety of radioisotope equipment. Prepare stock solutions of radioactive materials and calculate doses to be administered by radiologists. Subject patients to radiation. Execute blood volume, red cell survival, and fat absorption studies following standard laboratory techniques.	Certified Nuclear Medicine Technologist (CNMT), Nuclear Cardiology Technologist, Nuclear Medicine PET-CT Technologist (Nuclear Medicine Positron Emission Tomography – Computed Tomography Tech), Nuclear Medicine Technologist (NMT), Radiation Safety Officer, Registered Nuclear Medicine Technician, Staff Nuclear Medicine Technologist
29-2034	**Radiologic Technologists and Technicians**	Take x-rays and CAT scans or administer nonradioactive materials into patient's bloodstream for diagnostic or research purposes. Includes radiologic technologists and technicians who specialize in other scanning modalities.	Computed Tomography Technologist (CT Tech), Diagnostic Radiologic Technologist (DRT), Imaging Technologist (Imaging Tech), Mammographer, Radiographer, Radiologic Technologist (RT), Radiology Technician (Radiology Tech), Registered Radiologic Technologist (RT R), X-Ray Technician (X-Ray Tech), X-Ray Technologist

SOC Code	Title	Description	Sample of Reported Job Titles
29-2035	**Magnetic Resonance Imaging Technologists**	Operate Magnetic Resonance Imaging (MRI) scanners. Monitor patient safety and comfort, and view images of area being scanned to ensure quality of pictures. May administer gadolinium contrast dosage intravenously. May interview patient, explain MRI procedures, and position patient on examining table. May enter into the computer data such as patient history, anatomical area to be scanned, orientation specified, and position of entry.	Magnetic Resonance Imaging Coordinator (MRI Coordinator), Magnetic Resonance Imaging Quality Assurance Coordinator (MRI Quality Assurance Coordinator), MRI Specialist, MRI Technologist

Source: O*NET Online

Current and Future Employment

In the South Central Coast region, the number of jobs related to Medical Laboratory Technology are expected to increase for Diagnostic Medical Sonographers and Radiologic Technologists and Technicians and remain steady for Cardiovascular Technologists and Technicians, Nuclear Medicine Technologists, and Magnetic Resonance Imaging Technologists.

Exhibit 2 – Five-year projections for Medical Laboratory Technology in the South Central Coast region

SOC	Occupation	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change
29-2031	**Cardiovascular Technologists and Technicians**	375	378	3	1%
29-2032	**Diagnostic Medical Sonographers**	388	424	36	9%
29-2033	**Nuclear Medicine Technologists**	114	115	1	1%
29-2034	**Radiologic Technologists and Technicians**	977	1,034	57	6%
29-2035	**Magnetic Resonance Imaging Technologists**	255	266	10	4%

Source: Economic Modeling Specialists International (EMSI)

Earnings

Exhibit 3 contains hourly wages and annual average earnings for these occupations. Entry-level hourly earnings are represented by the 25th percentile of wages, median hourly earnings are represented by the 50th percentile of wages, and experienced hourly earnings are represented by the 75th percentile of wages, demonstrating various levels of employment.

Exhibit 3 – Earnings for Medical Laboratory Technology in the South Central Coast region

SOC	Occupation	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
29-2031	**Cardiovascular Technologists and Technicians**	$30.06	$38.96	$48.42
29-2032	**Diagnostic Medical Sonographers**	$38.57	$48.36	$60.12
29-2033	**Nuclear Medicine Technologists**	$46.35	$54.12	$63.02
29-2034	**Radiologic Technologists and Technicians**	$31.17	$40.56	$47.76
29-2035	**Magnetic Resonance Imaging Technologists**	$39.01	$46.82	$55.51

Source: Economic Modeling Specialists International (EMSI)

Exhibit 3b – Earnings for Medical Laboratory Technology in the South Central Coast region

Source: Family Needs Calculator (Living wage is based on Single Adult household with no children); Economic Modeling Specialists International (EMSI)

Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for occupations relevant to the field of study. Employer job postings are consulted to understand who is looking for medical laboratory technicians, and what they are looking for in potential candidates. To identify job postings related to Medical Laboratory Technology the following standard occupational classifications were used:

29-2031	Cardiovascular Technologists and Technicians
29-2032	Diagnostic Medical Sonographers
29-2033	Nuclear Medicine Technologists
29-2034	Radiologic Technologists and Technicians
29-2035	Magnetic Resonance Imaging Technologists

Top Occupations

In 2021, there were 1,103 employer postings for the occupations related to Medical Laboratory Technology.

Exhibit 4 – Top Occupations by Job Postings

SOC Code	Occupation	Job Postings, Full Year 2021
29-2031	**Cardiovascular Technologists and Technicians**	424
29-2034	**Radiologic Technologists and Technicians**	349
29-2032	**Diagnostic Medical Sonographers**	195
29-2035	**Magnetic Resonance Imaging Technologists**	122
29-2033	**Nuclear Medicine Technologists**	13

Source: Labor Insight/Jobs (Burning Glass)

Exhibit 4b – Top Occupations and Risk of Automation

SOC Code	Occupation	Risk of Automation
29-2031	**Cardiovascular Technologists and Technicians**	Low
29-2034	**Radiologic Technologists and Technicians**	Low
29-2032	**Diagnostic Medical Sonographers**	Low
29-2035	**Magnetic Resonance Imaging Technologists**	Low
29-2033	**Nuclear Medicine Technologists**	Low

Source: Labor Insight/Jobs (Burning Glass)

Top Titles

The top job titles for employers posting ads for jobs related to Medical Laboratory Technology are listed in Exhibit 5. Monitor Technician is mentioned as the job title in 3% of all relevant job postings (36 postings).

Exhibit 5 – Top Titles

Title	Job Postings, Full Year 2021
Monitor Technician	36
Ultrasound Technician	24
Radiology Technician	18
MRI Technologist	17
Cath Laboratory Technician	16

Source: Labor Insight/Jobs (Burning Glass)

Top Employers

Exhibit 6 lists the major employers hiring professionals in the Medical Laboratory Technology field. The top employer posting job ads was Dignity Health. The top worksite cities in the region for these occupations were San Luis Obispo, Oxnard, Thousand Oaks, Santa Maria, and Santa Clarita.

Exhibit 6 – Top Employers (n=822)

Employer	Job Postings, Full Year 2021
Dignity Health	104
Healthcare Traveler Allied Health	55
Radnet	44
Community Memorial Health System	38
Adventist Health	37

Source: Labor Insight/Jobs (Burning Glass)

Skills

The tables in Exhibit 7 list employers' most commonly requested skills in job postings related to Medical Laboratory Technology. Radiology is the most sought-after specialized skill for employers, followed by Cardiopulmonary Resuscitation (CPR), and Ultrasound. Communication Skills, Writing, and Organizational Skills were the most requested baseline skills. Microsoft Excel, Microsoft Office, and Microsoft Outlook were the most commonly requested software and programming skills.

Exhibit 7 – Specialized Skills (n= 6,044)

Skills	Job Postings, Full Year 2021
Radiology	388
Cardiopulmonary Resuscitation (CPR)	268
Ultrasound	246
Radiologic Technology	226
X-Rays	208
Patient Care	202
Electrocardiogram (EKG / ECG)	125
Diagnostic Imaging	112
Life Support	106
Acute Care	105

Source: Labor Insight/Jobs (Burning Glass)

Exhibit 7b – Baseline Skills (n= 1,659)

Skills	Job Postings, Full Year 2021
Communication Skills	206
Writing	147
Organizational Skills	127
Computer Literacy	114
Building Effective Relationships	91
Teamwork/Collaboration	82
Research	78
English	67
Physical Abilities	57
Presentation Skills	55

Source: Labor Insight/Jobs (Burning Glass)

Exhibit 7c – Software and Programming Skills (n= 117)

Skills	Job Postings, Full Year 2021
Microsoft Excel	31
Microsoft Office	28
Microsoft Outlook	9
Meditech	8
WordPerfect	8
Microsoft Word	6
Word Processing	5
Facebook	3
Adobe Acrobat	2
Adobe Creative Suite	2

Source: Labor Insight/Jobs (Burning Glass)

The table below lists the skill clusters most in demand for Medical Laboratory Technology occupations.

Exhibit 7d – Skill Clusters in Demand (n= 4,038)

Skill Cluster	Job Postings, Full Year 2021
Health Care: Radiology	785
Health Care: Emergency and Intensive Care	415
Health Care: Basic Patient Care	309
Health Care: Cardiology	252
Health Care: Medical Support	235
Health Care: General Medicine	132
Administration: General Administrative and Clerical Tasks	101
Health Care: Surgery	78
Administration: Scheduling	78
Health Care: Blood Collection	76

Source: Labor Insight/Jobs (Burning Glass)

Industry Concentration

Exhibit 8 shows the industries with the most Medical Laboratory Technology postings in the South Central Coast. Note: 17% of records have been excluded because they do not include an industry. As a result, the chart below may not be representative of the full sample.

Exhibit 8 – Industries employing the most in the Medical Laboratory Technology field, 2021

Industry	Occupation Group Jobs in Industry	% of Occupation Group in Industry
Health Care and Social Assistance	811	88%
Finance and Insurance	34	4%
Professional, Scientific, and Technical Services	28	3%
Educational Services	13	1%
Information	10	1%

Source: Labor Insight/Jobs (Burning Glass)

Certifications

Exhibit 9 lists the most in-demand certifications in the Medical Laboratory Technology field. The top requested certification in job postings was American Registry of Radiologic Technologists (AART) Certification.
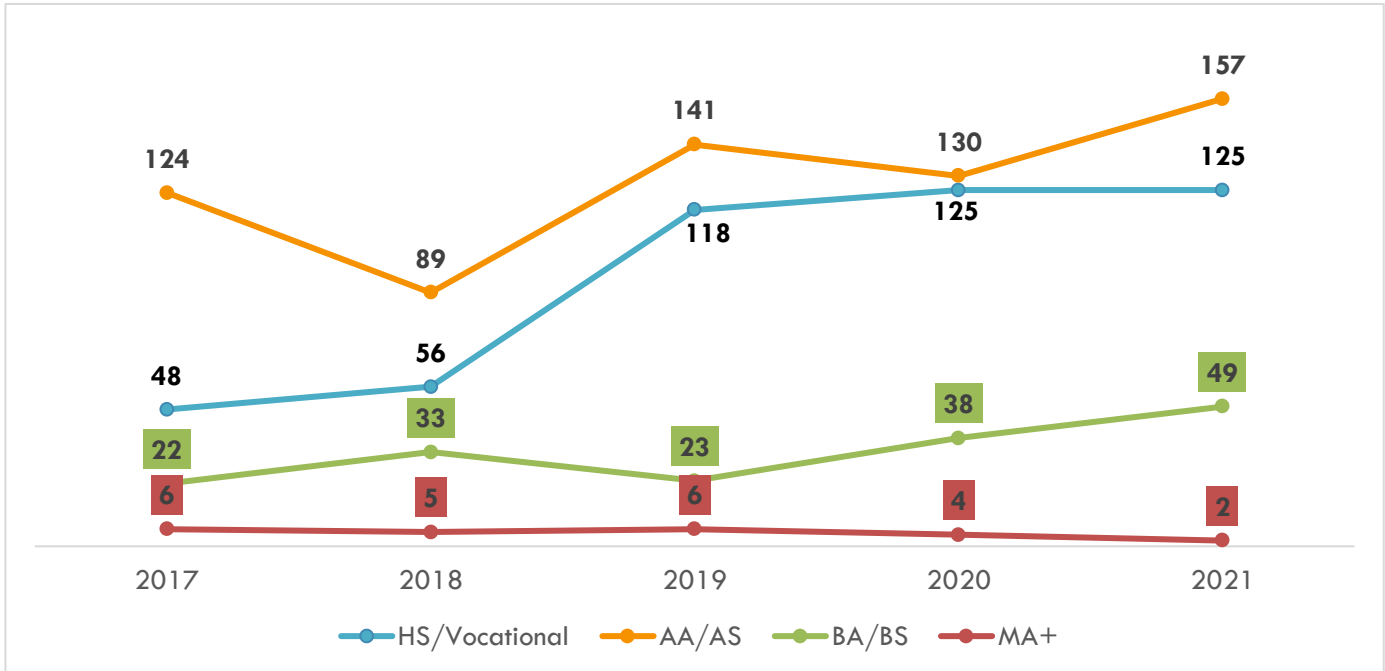
Exhibit 9 – Certifications (n= 1,565)

Certifications	Job Postings, Full Year 2021
American Registry of Radiologic Technologists (AART) Certification	291
Basic Life Saving (BLS)	253
Basic Cardiac Life Support Certification	210
American Registry For Diagnostic Medical Sonography (ARDMS)	124
First Aid CPR AED	123

Source: Labor Insight/Jobs (Burning Glass)

Job Postings - Minimum Educational Attainment – Change Over Time

Exhibit 10 displays the change in job advertisements over the last five years for Medical Laboratory Technology, according to the minimum advertised education. In 2021, there were 333 total job ads posted, with 125 of them requiring a high school diploma or vocational degree and the majority of posts, 157, suggesting minimum educational attainment of AA/AS for this occupational grouping.

Exhibit 10 – Educational demand, minimum advertised

Source: Labor Insight / Jobs (Burning Glass)

Job Postings – Proportion of Job Postings by Minimum Educational Attainment Required

To gauge employer preference for candidates with particular education levels, the proportion of job postings by minimum advertised education appears in Exhibit 11. Employers posting job ads for this group of occupations under Medical Laboratory Technology have frequently sought candidates with an associate's degree.

Exhibit 11 – Occupational Demand by Education, Minimum Advertised

Minimum Education Requirement	2017	2018	2019	2020	2021
HS Diploma / Vocational Training	24%	31%	41%	42%	38%
Associate Degree	62%	49%	49%	44%	47%
Bachelor's Degree	11%	18%	8%	13%	15%
Graduate Degree	3%	3%	2%	1%	1%

Source: Labor Insight/Jobs (Burning Glass)

Education and Training

Exhibit 12 shows the typical entry-level education requirement for the occupations of interest, along with the typical on-the-job training needed to attain competency in the occupation.

Exhibit 12 – Education and Training Requirements

SOC	Occupation	Typical entry-level education	Typical on-the-job training
29-2031	**Cardiovascular Technologists and Technicians**	Associate's degree	None
29-2032	**Diagnostic Medical Sonographers**	Associate's degree	None
29-2033	**Nuclear Medicine Technologists**	Associate's degree	None
29-2034	**Radiologic Technologists and Technicians**	Associate's degree	None
29-2035	**Magnetic Resonance Imaging Technologists**	Associate's degree	None

Source: Bureau of Labor Statistics Employment Projections (Educational Attainment)

Regional Completions and Openings

There were 428 regional completions (2020) and 384 regional openings (2020) in the South Central Coast region in programs related to the occupations identified as aligned with Medical Laboratory Technology.

Exhibit 13 – Completions and Openings

10 Regional Institutions had Related Programs (2020)	**428** Regional Completions (2020)	**384** Annual Openings (2020)

Source: Economic Modeling Specialists International (EMSI)

Related Programs

CIP Code	Program	Completions (2020)
51.0910	Diagnostic Medical Sonography/Sonographer and Ultrasound Technician	239
51.0911	Radiologic Technology/Science – Radiographer	103
51.0899	Allied Health and Medical Assisting Services, Other	71
51.0907	Medical Radiologic Technology/Science – Radiation Therapist	15
51.0902	Electrocardiograph Technology/Technician	0
51.1199	Health/Medical Preparatory Programs, Other	0

Source: Economic Modeling Specialists International (EMSI)

CCC and Non-CCC Awards

Exhibit 14 lists the number of completers from programs related to Medical Laboratory Technology in the South Central Coast Region.

Exhibit 14 – CCC and Non-CCC awards the South Central Coast region, 2020

CCC Programs	Completers
Santa Barbara City College	40
Moorpark College	17
Antelope Valley College	9
Non-CCC Programs	**Completers**
High Desert Medical College	252
Central California School of Continuing Education	58
Career Care Institute	52

Source: Economic Modeling Specialists International (EMSI)

Student Outcomes

The CTE LaunchBoard provides student outcome data on the effectiveness of CTE programs. The following student outcome information was collected from exiters of regional Medical Laboratory Technology Program (TOP: 1205.00) for the 2018-19 academic year.

- Completers of regional Medical Laboratory Technology programs from the 2018-2019 academic year had a **median annual wage upon completion of $30,916.**

- 86% of students are **employed within a year** after completing a program.

- 45% of students **attained a living wage** within a year of completion.

- Completers experienced an average of +**30%** change in earnings after exiting.

- 93% of students were **part-time,** 14% **skill builders,** 39% **first-generation,** and 80% **economically disadvantaged**.

Sources

O*Net Online, Labor Insight/Jobs (Burning Glass), Economic Modeling Specialists International (EMSI), MIT Living Wage Calculator, Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, Statewide CTE Outcomes Survey, Employment Development Department Unemployment Insurance Dataset

Notes

Data included in this analysis represent the labor market demand for relevant positions most closely related to Medical Laboratory Technology. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study and can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions. All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.