Labor Market Analysis for Program Recommendation: 1602.00/Library Technician (Aide) (*Archives and Digital Collections*)
Orange County Center of Excellence, May 2024

Summary

Program LMI Endorsement	Endorsed: All LMI Criteria Met	☐	Endorsed: Some LMI Criteria Met	☒	Not LMI Endorsed	☐

Program LMI Endorsement Criteria		
	Yes ☑	No ☐
Supply Gap:	*Comments:* There is projected to be **1,062 annual job openings** throughout Los Angeles and Orange counties for these library technology occupations, which **is more than the 55 awards conferred by educational institutions.**	
	Yes ☐	No ☑
Living Wage: (Entry-Level, 25th)	*Comments:* **All annual job openings** for these library technology occupations **have entry-level hourly wages below the OC living wage of $20.63.**	
	Yes ☑	No ☐
Education:	*Comments:* The typical entry-level education for these two library technology occupations ranges from a high school diploma to a postsecondary nondegree award. Additionally, between **27% and 36% of workers in the field have completed some college or an associate degree as their highest level of education.**	

Emerging Occupation(s)	
Yes ☐	*No* ☑
Comments: N/A	

The Orange County Center of Excellence for Labor Market Research (OC COE) prepared this report to determine whether there is a supply gap in the Los Angeles/Orange County regional labor market related to two middle-skill occupations:

- *Library Technicians (25-4031)*
- *Library Assistants, Clerical (43-4121)*

Based on the available data, there appears to be a supply gap for these library technology occupations and typical education requirements for these occupations align with a community college education. However, all annual job openings for these occupations have entry-level wages below the living wage. **Therefore, due to some of the regional labor market criteria being met, the COE endorses this proposed program.**

Exhibit 1 lists the occupational demand, supply, typical entry-level education, and educational attainment for the occupations included in this report.

Exhibit 1: Labor Market Endorsement Summary

Occupation (SOC)	Demand (Annual Openings)	Supply (CC and Non-CC)	Entry-Level Hourly Earnings (25th Percentile)	Typical Entry-Level Education	Community College Educational Attainment
Library Technicians (25-4031)	LA: 487 OC: 114 TTL: 601	LA: 39 OC: 16 TTL: 55	OC: $16.57	Postsecondary nondegree award	27%
Library Assistants, Clerical (43-4121)	LA: 375 OC: 100 TTL: 461	LA: 39 OC: 16 TTL: 55	OC: $16.49	High school diploma or equivalent	36%
Total	**1,062**	**55**	**N/A**	**N/A**	**N/A**

Demand:

- The number of jobs related to these library technology occupations are projected to increase 2% through 2027, equating to 1,062 annual job openings.
- Hourly entry-level wages for these library technology occupations range between $16.49 and $16.57 in Orange County; none of the annual job openings have entry-level wages above the living wage.
- There were 433 online job postings for these library technology occupations over the past 12 months. The highest number of postings were for library assistants, library aides, library clerks, and library technicians.
- The typical entry-level education for these library technology occupations ranges from a high school diploma or equivalent to a postsecondary nondegree award.
- Between 27% and 36% of workers in the field have completed some college or an associate degree as their highest level of educational attainment.

Supply:

- There was an average of 55 awards conferred by 3 community colleges in Los Angeles and Orange Counties from 2019 to 2022.
- There were no awards conferred by non-community college institutions from 2019 to 2021.
- Orange County community college students that exited library technician (aide) programs in the 2020-21 academic year had a median annual wage of $35,564 after exiting the program.
- Due to the low number of students enrolled in library technology programs, there was insufficient data to determine the percentage of students that attained the regional living wage and the percentage of students that are working in a job closely related to their field of study.

Demand

Occupational Projections:

Exhibit 2 shows the annual percent change in jobs for these two library technology occupations from 2017 through 2027. Though there was a 7% decline across all occupations from 2019 to 2020 due to the COVID-19 pandemic, employment in these library technology occupations declined only 3% during the same period in Orange County.

In the three years preceding the pandemic, employment for these occupations declined for two years, before a slight increase in 2019. After declines in employment in Orange County from 2019 to 2022, employment is projected to plateau through 2027.

Exhibit 2: Annual Percent Change in Jobs for Library Technology Occupations, 2017-2027
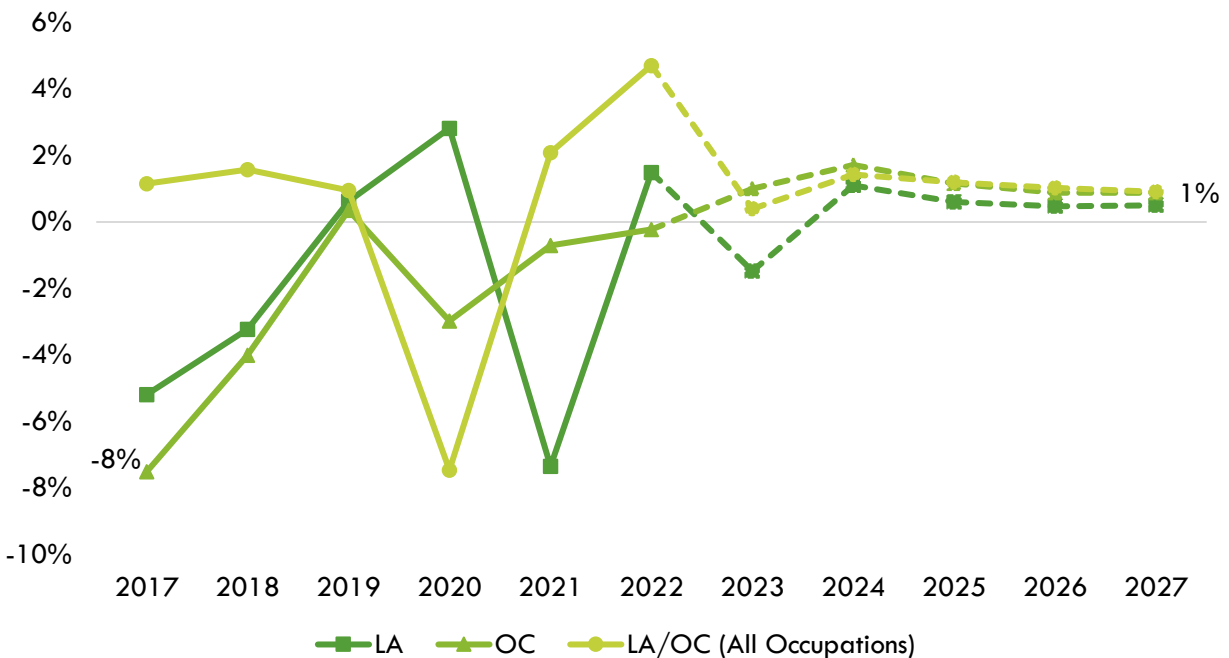

Exhibit 3 shows the five-year occupational demand projections for these library technology occupations. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase by 2% through 2027. Notably, employment is projected to increase 6% in Orange County and only 1% in Los Angeles County. There is projected to be 1,062 jobs available annually. Of those, 81% are projected to be in Los Angeles County.

Exhibit 3: Occupational Demand in Los Angeles and Orange Counties[1]

| Geography	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	Annual Openings
Los Angeles	4,923	4,981	58	1%	862
Orange	1,078	1,140	62	6%	200
Total	**6,001**	**6,121**	**120**	**2%**	**1,062**

[1] Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Wages:

The labor market endorsement in this report considers the entry-level hourly wages for these library technology occupations in Orange County as they relate to the county's living wage. Los Angeles County wages are included below in order to provide a complete analysis of the LA/OC region.

None of the annual openings for these library technology occupations have entry-level wages above the living wage for one adult in Orange County ($20.63). Typical entry-level hourly wages for these occupations range between $16.49 and $16.57. Orange County's average wages ($20.44) are also below the average statewide wage of $22.94 for these occupations. Exhibit 4 shows the wage range for each of these library technology occupations in Orange County and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

Exhibit 4: Wages by Occupation in Orange County
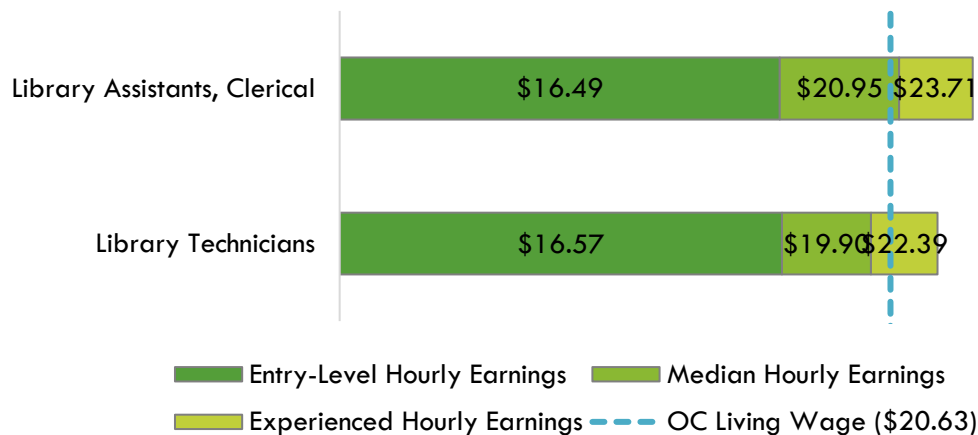
None of the annual openings for these library technology occupations have entry-level wages above the living wage for one adult in Los Angeles County ($18.10). Typical entry-level hourly wages range between $17.77 to $17.84 for these occupations. Los Angeles County's average wages ($22.01) are slightly below the average statewide wage of $22.94 for these occupations. Exhibit 5 shows the wage range for each of these library technology occupations in Los Angeles County and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

Exhibit 5: Wages by Occupation in Los Angeles County
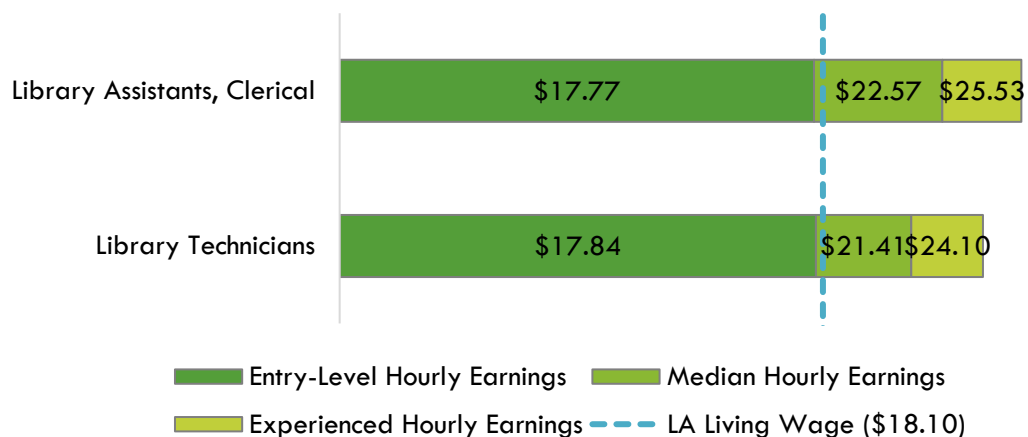
Job Postings:

Important Online Job Postings Data Note: Online job postings data is sourced from Lightcast, a labor market analytics firm that scrapes, collects, and organizes data from online job boards such as LinkedIn, Indeed, Glassdoor, Monster, GovernmentJobs.com, and thousands more. Lightcast uses natural language processing (NLP) to determine the related company, industry, occupation, and other information for each job posting. However, NLP has limitations that include understanding contextual words of phrases; determining differences in words that can be used as nouns, verbs, and/or adjectives; and misspellings or grammatical errors.[2] For these reasons, job postings could be assigned to the wrong employer, industry, or occupation within Lightcast's database.

Additionally, there are several limitations when analyzing job postings. A single job posting may not represent a single job opening, as employers may be creating a pool of candidates for future openings or hiring for multiple positions with a single posting. Additionally, not all jobs are posted online, and jobs may be filled through other methods such as internal promotion, word-of-mouth advertising, physical job boards, or a variety of other channels.

There were 433 online job postings related to these library technology occupations listed in the past 12 months. Exhibit 6 shows the number of job postings by occupation. Approximately 80% of job postings were for *library assistants, clerical*, and 20% were for *library technicians*.

Exhibit 6: Number of Job Postings by Occupation (n=433)

Occupation	Job Postings	Percentage of Job Postings
Library Assistants, Clerical	346	80%
Library Technicians	87	20%
Total Postings	**433**	**100%**

The top employers in the region, by number of job postings, are shown in Exhibit 7.

Exhibit 7: Top Employers by Number of Job Postings (n=433)

Employer	Job Postings	Percentage of Job Postings
California State University	38	9%
University of California	21	5%
Chapman University	16	4%
J. Paul Getty Trust	10	2%
Capistrano Unified School District	9	2%
City Of Long Beach	9	2%
Antelope Valley College	8	2%
J Paul Getty Trust The	8	2%
UC Irvine Health	7	2%
City Of Anaheim	6	1%

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[2] K. R. Chowdhary, Fundamentals of Artificial Intelligence (Basingstoke: Springer Nature, 2020), https://link.springer.com/book/10.1007/978-81-322-3972-7.

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown in Exhibit 8.

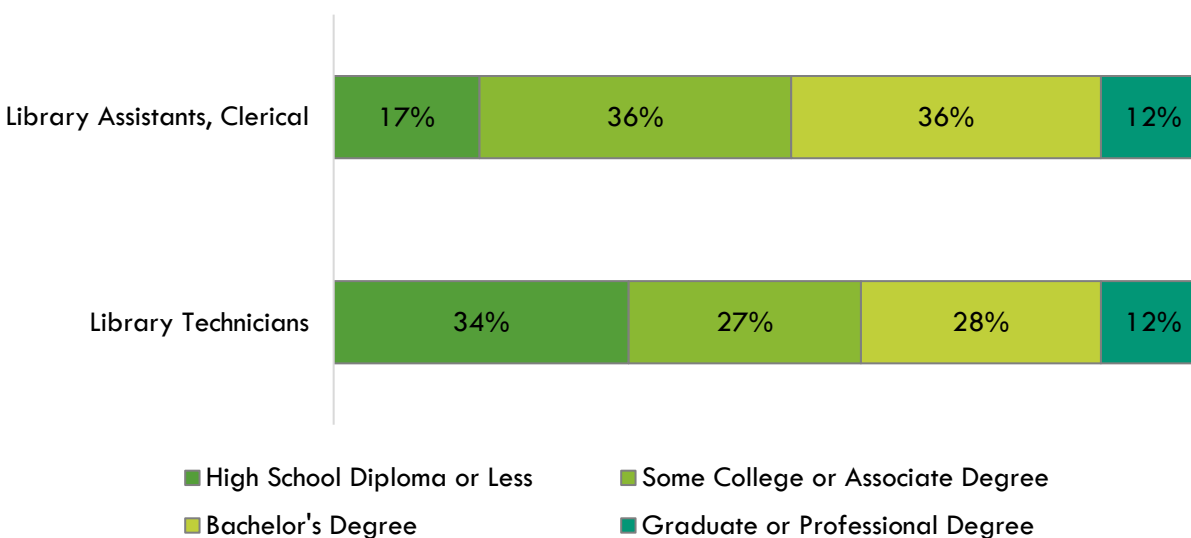### Exhibit 8: Top Skills by Number of Job Postings (n=433)

Top Specialized Skills	Top Soft Skills	Top Computer Skills
Library Services (144)	Clerical Works (166)	Microsoft Office (46)
Office Equipment (86)	Communication (165)	Microsoft Excel (38)
Library Science (74)	Customer Service (155)	Spreadsheets (31)
Cataloguing (67)	Operations (127)	Microsoft Word (19)
Integrated Library Systems (67)	Research (125)	Zoom (Video Conferencing Tool) (15)
Library (66)	Writing (118)	Productivity Software (14)
Library Programming (63)	Collections (106)	Microsoft Outlook (13)
Punctuation And Capitalization (63)	English Language (106)	Microsoft PowerPoint (11)
Interlibrary Loan (58)	Management (87)	Microsoft Access (9)
Vocabulary (47)	Filing (81)	Software Systems (9)

Educational Attainment:

The Bureau of Labor Statistics (BLS) lists a high school diploma or equivalent as the typical entry-level education for *library assistants, clerical* and a postsecondary nondegree award for *library technicians*. The national-level educational attainment data indicates between 27% and 36% of workers in the field have completed some college or associate degree as their highest level of education. Exhibit 9 shows the educational attainment for these occupations.

Of the 63% of the cumulative job postings for these library technology occupations that listed a minimum education requirement in Los Angeles/Orange County, 65% (177) requested a high school diploma or an associate degree and 35% (38) requested a bachelor's or master's degree.

Exhibit 9: National-level Educational Attainment for Occupations

Library Assistants, Clerical: 17% | 36% | 36% | 12%

Library Technicians: 34% | 27% | 28% | 12%

■ High School Diploma or Less   ■ Some College or Associate Degree
■ Bachelor's Degree   ■ Graduate or Professional Degree

Educational Supply
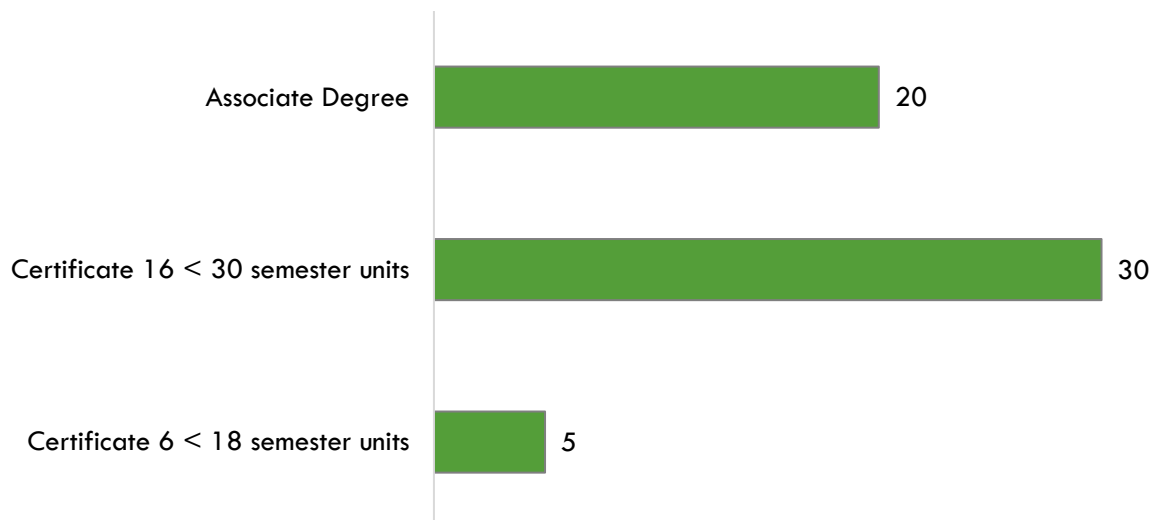
Community College Supply:

Exhibit 10 shows the three-year average number of awards conferred by community colleges in the related TOP code: Library Technician (Aide) (1602.00). Only three colleges in the region reported completions, with Pasadena reporting the greatest number of completions, followed by Santa Ana and Long Beach. Over the past 12 months, there as one other related program recommendation requests from regional community colleges.

Exhibit 10: Regional Community College Awards (Certificates and Degrees), 2019-2022

TOP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
1602.00	Library Technician (Aide)	Long Beach	11	8	18	12
		Pasadena	7	50	27	27
		LA Subtotal	**18**	**58**	**45**	**39**
		Santa Ana	17	12	19	16
		OC Subtotal	**17**	**12**	**19**	**16**
Supply Total/Average			**35**	**70**	**64**	**55**

Exhibit 11 shows the annual average community college awards by type from 2019-20 through 2021-22. Three types of awards were conferred during this period, including: associate degrees (20), certificates between 16 and less than 30 semester units (30), and certificates between 6 and less than 18 semester units (5).

Exhibit 11: Annual Average Community College Awards by Type, 2019-2022

Community College Student Outcomes:

Exhibit 12 shows the Strong Workforce Program (SWP) metrics for library technician (aide) programs in Rancho Santiago Community College District (RSCCD), the Orange County Region, and California. Currently, Santa Ana College is the only district in Orange County that offers library technician (aide) programs. Therefore, all metrics for the Orange County region are identical to those for RSCCD.

RSCCD students that exited library technician (aide) programs in the 2020-21 academic year had slightly higher median annual earnings ($35,564) compared to all library technician (aide) students statewide ($35,260). Data on the number of Orange County and RSCCD students who attained the living wage were unavailable for 2019-2020 or 2020-2021 due to a low number of students enrolled.

Exhibit 12: Library Technician (Aide) (1602.00) Strong Workforce Program Metrics, 2020-21[3]

SWP Metric	RSCCD	OC Region	California
SWP Students	75	Same as RSCCD	1,153
SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year	49%	Same as RSCCD	34%
SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course	Insufficient Data	Same as RSCCD	82%
SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status	11	Same as RSCCD	175
SWP Students Who Transferred to a Four-Year Postsecondary Institution (2019-20)	Insufficient Data	Same as RSCCD	53
SWP Students with a Job Closely Related to Their Field of Study (2019-20)	Insufficient Data	Same as RSCCD	78%
Median Annual Earnings for SWP Exiting Students	$35,564	Same as RSCCD	$35,260
Median Change in Earnings for SWP Exiting Students	35%	Same as RSCCD	20%
SWP Exiting Students Who Attained the Living Wage	Insufficient Data	Same as RSCCD	49%

Non-Community College Supply:

For a comprehensive regional supply analysis, it is also important to consider the supply from other institutions in the region that provide training programs for these library technology occupations. However, there were no awards conferred by other institutions under the related Classification of Instructional Programs (CIP) Code: Library and Archives Assisting (25.0301).

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[3] All SWP metrics are for 2020-21 unless otherwise noted.
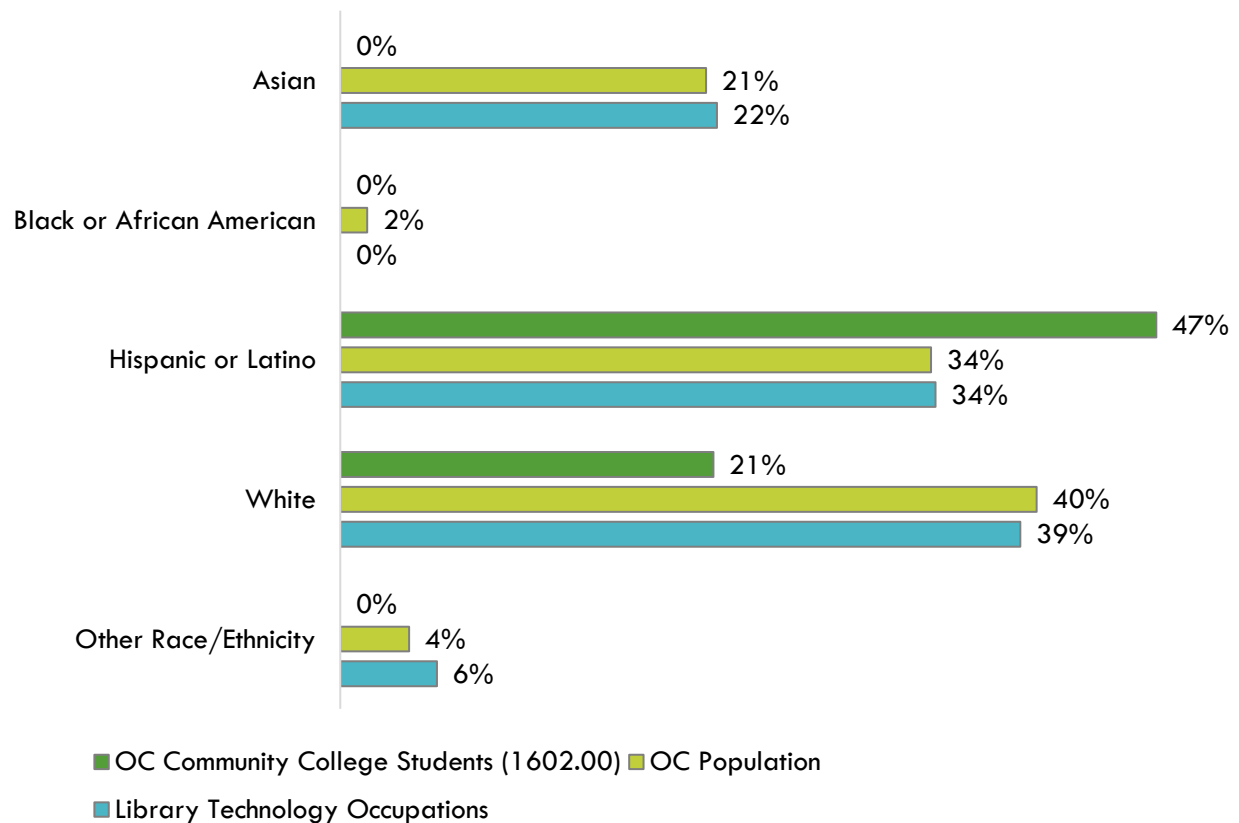
Regional Demographics

This section analyzes demographic data for Orange County community college students enrolled in library technician (aide) programs compared to the OC population, as well occupational data, for the purpose of identifying potential diversity and equity issues that can be addressed by community college programs.

Ethnicity:

Exhibit 13 shows the ethnicity of Orange County community college students enrolled in library technician (aide) programs compared to the overall Orange County population, as well as the two library technology occupations included in this report. White (39%) and Hispanic or Latino (35%) workers comprise the two largest groups of these library technology occupations, closely mirroring their representation in the population at 40% and 34%, respectively. Nearly half of library technician (aide) students are Hispanic or Latino (47%), while 21% are white.

Examining disaggregated data for each occupation (not shown), white and Hispanic or Latino workers also comprise the two largest groups for each occupation. Approximately 40% of *library assistants, clerical*, are white and 36% are Hispanic or Latino, while 37% of *library technicians* are white and 31% or Hispanic or Latino.

Exhibit 13: Program and County Demographics by Ethnicity

Horizontal bar chart showing demographic data by ethnicity:

Asian: OC Community College Students 0%, OC Population 21%, Library Technology Occupations 22%

Black or African American: OC Community College Students 0%, OC Population 2%, Library Technology Occupations 0%

Hispanic or Latino: OC Community College Students 47%, OC Population 34%, Library Technology Occupations 34%

White: OC Community College Students 21%, OC Population 40%, Library Technology Occupations 39%

Other Race/Ethnicity: OC Community College Students 0%, OC Population 4%, Library Technology Occupations 6%

Legend: OC Community College Students (1602.00), OC Population, Library Technology Occupations
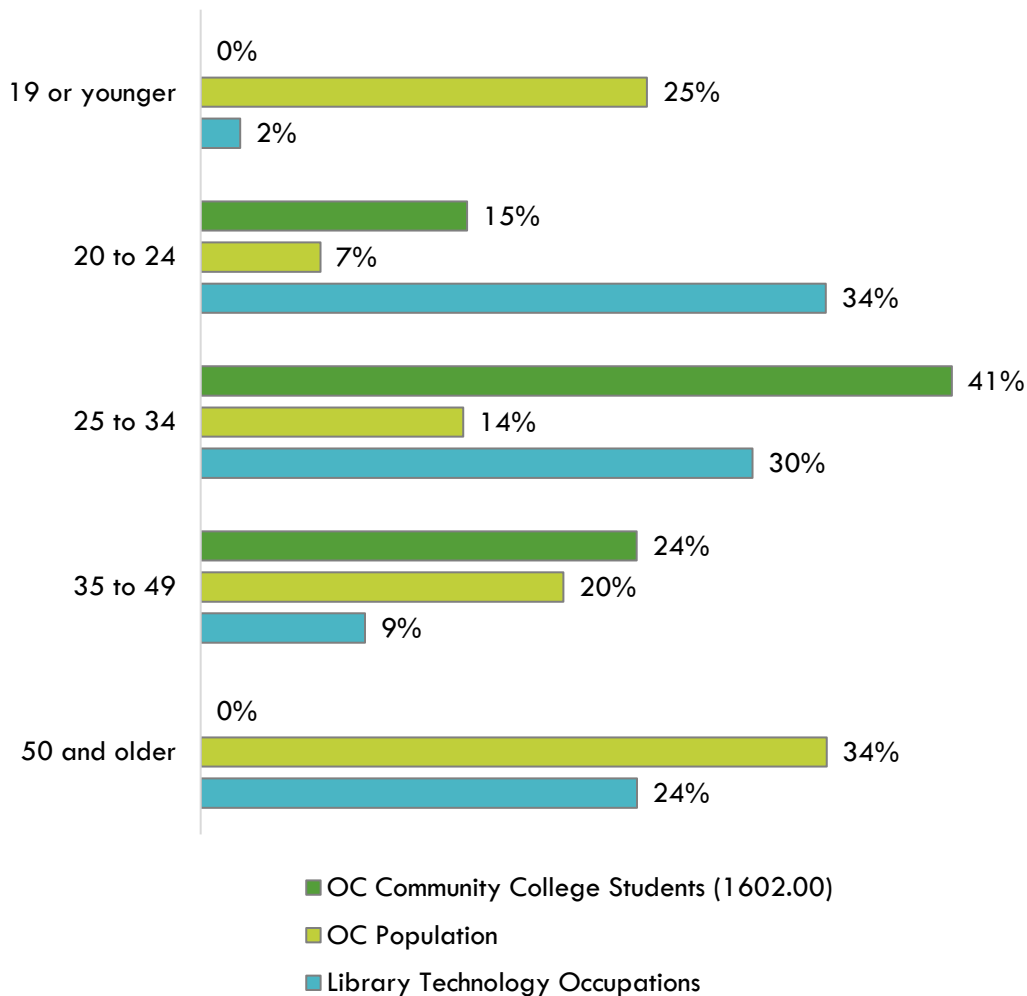
Age:

Exhibit 14 shows the age of Orange County community college students enrolled in library technician (aide) programs compared to the overall Orange County population, as well as the two library technology occupations included in this report. Nearly two-thirds (64%) of workers in these library technology occupations are aged between 20 and 34 years, more than three times greater than the population (21%) and more than community college library technician (aide) students (56%). Library technology workers aged 50 years and older represent the next largest age group at 24%, compared to 34% of the population (data on library technician [aide] students age 50 years and older are not available).

Examining disaggregated data for each occupation (not shown), workers in these two library technology occupations are also largely younger, with 71% of *library technicians* and 64% of *library assistants, clerical,* aged 34 years or younger.

Exhibit 14: Program and County Demographics by Age

19 or younger
- 0%
- 25%
- 2%

20 to 24
- 15%
- 7%
- 34%

25 to 34
- 41%
- 14%
- 30%

35 to 49
- 24%
- 20%
- 9%

50 and older
- 0%
- 34%
- 24%

■ OC Community College Students (1602.00)
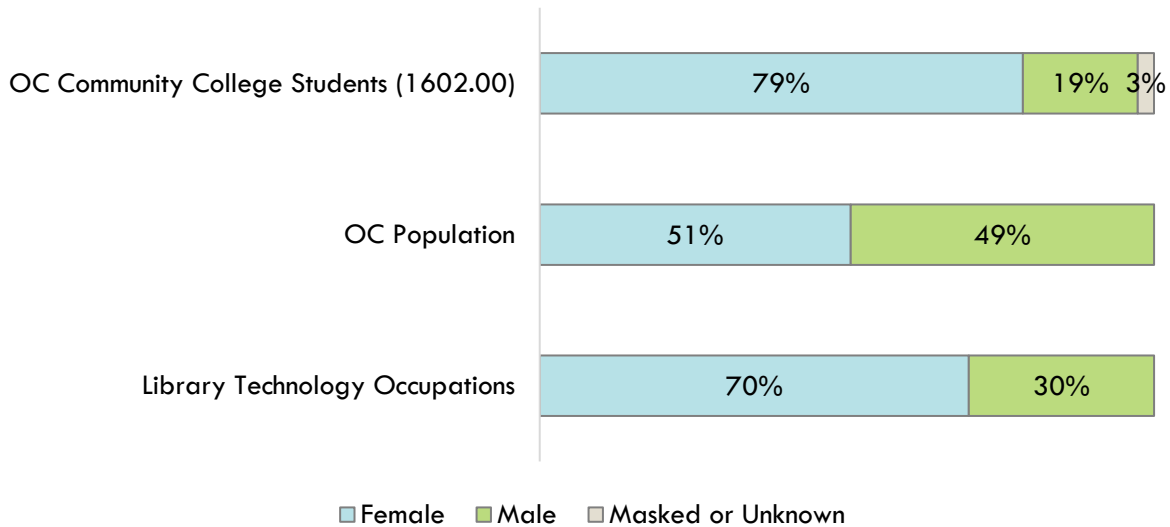■ OC Population
■ Library Technology Occupations

Sex:

Exhibit 15 shows the sex of Orange County community college students enrolled in library technician (aide) programs compared to the overall Orange County population as well as these library technology occupations.

While women and men are almost evenly represented among the population, women comprise more than two-thirds (70%) of workers in library technology occupations and more than three-quarters (79%) of library technician (aide) students. Examining disaggregated data for each occupation (not shown) also indicate that women represent greater numbers of workers in both occupations, though women make up a slightly larger proportion of *library assistants, clerical* (75%) compared to *library technicians* (61%).

Exhibit 15: Program and County Demographics by Sex

	Female	Male	Masked or Unknown
OC Community College Students (1602.00)	79%	19%	3%
OC Population	51%	49%	
Library Technology Occupations	70%	30%	

Appendix A: Methodology

The OC COE prepared this report by analyzing data from occupations and education programs. Occupational data is derived from Lightcast, a labor market analytics firm that consolidates data from the California Employment Development Department (EDD), U.S. Bureau of Labor Statistics (BLS) and other government agencies. Program supply data is drawn from two systems: Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP).

Using a TOP-SOC crosswalk, the OC COE identified middle-skill jobs for which programs within these TOP codes train. Middle-skill jobs include:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

The OC COE determined labor market supply for an occupation or SOC code by analyzing the number of program completers or awards in a related TOP or CIP code. The COE developed a "supply table" with this information, which is the source of the program supply data for this report. TOP code data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP code data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data), also known as IPEDS. TOP is a system of numerical codes used at the state level to collect and report information on California community college programs and courses throughout the state that have similar outcomes. CIP codes are a taxonomy of academic disciplines at institutions of higher education in the United States and Canada. Institutions outside of the California Community College system do not use TOP codes in their reporting systems.

Data included in this analysis represent the labor market demand for relevant positions most closely related to the proposed program as expressed by the requesting college in consultation with the OC COE. 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 which 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.

Appendix B: Data Sources

Data Type	Source
Occupational Projections, Wages, and Job Postings	Traditional labor market information data is sourced from Lightcast, a labor market analytics firm. Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics and the American Community Survey. For more information, see https://lightcast.io/
Living Wage	The living wage is derived from the Insight Center's California Family Needs Calculator, which measures the income necessary for an individual of family to afford basic expenses. The data assesses the cost of housing, food, child care, health care, transportation, and taxes. For more information, see: https://insightcced.org/family-needs-calculator/ The living wage for one adult in Orange County is $20.63 per hour ($42,910.40 annually). This figure is used by the CCCCO to calculate the percentage of students that attained the regional living wage.
Typical Education and Training Requirements, and Educational Attainment	The Bureau of Labor Statistics (BLS) provides information about education and training requirements for hundreds of occupations. BLS uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which BLS publishes projections data. For more information, see https://www.bls.gov/emp/documentation/education/tech.htm
Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences	The O*NET database includes information on skills, abilities, knowledges, work activities, and interests associated with occupations. For more information, see https://www.onetonline.org/help/online/
Educational Supply	The CCCCO Data Mart provides information about students, courses, student services, outcomes and faculty and staff. For more information, see: https://datamart.cccco.edu The National Center for Education Statistics (NCES) Integrated Postsecondary Integrated Data System (IPEDS) collects data on the number of postsecondary awards earned (completions). For more information, see https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions
Student Metrics and Demographics	LaunchBoard, a statewide data system supported by the California Community Colleges Chancellor's Office and hosted by Cal-PASS Plus, provides data on progress, success, employment, and earnings outcomes for California community college students. For more information, see: https://www.calpassplus.org/LaunchBoard/Home.aspx

Data Type	Source
Population and Occupation Demographics	The Census Bureau's American Community Survey (ACS) is the premier source for detailed population and housing information. For more information, see: https://www.census.gov/programs-surveys/acs Data is sourced from IPUMS USA, a database providing access to ACS and other Census Bureau data products. For more information, see: https://usa.ipums.org/usa/about.shtml

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