

Strong Workforce Program
Advanced Manufacturing Sector
Regional Advisory Meeting Proceedings
February 9, 2023
Hybrid – Zoom | Folsom Lake College

Introduction

The Los Rios Community College District, in partnership with Valley Vision, and in collaboration with Sierra College and Yuba Community College District, invests Strong Workforce funding to organize and convene Regional Advisories. The objectives of the Regional Advisories are to build strong relationships between employers, educators, and workforce that:

- Provide timely information on skills gaps and workforce needs, informing partners on major industry trend information;
- Improve the efficiency of the advisory process for educators and employers;
- Reflect a regional view of workforce needs and assets
- Provide opportunities for more systemic, ongoing engagement that includes workforce partners in key industry sectors.

Regional Advisory meetings help inform decisions on needed investments and enhancements for Career Education (CE) programs to help fill the growing demand for middle-skill positions. This meeting proceedings report includes key findings, best practices, and minutes from the Spring 2023 Regional Advisory meeting focused specifically on the breadth of careers in Advanced Manufacturing.

Valley Vision supports a robust talent pipeline through our multiple Workforce Development initiatives. We prepare our regional workforce for the future by addressing skills gaps, advancing research, aligning efforts and strengthening systems. Valley Vision's workforce efforts are supported by the Sacramento Employment and Training Agency (SETA), Golden Sierra Workforce Development Board (WDB), North Central Counties Consortium, Yolo WDB, City of Sacramento, local community college districts and others.

The Strong Workforce program provides Career Education opportunities to increase social mobility and fuel regional economies with skilled workers.

Key Findings

- Manufacturing jobs have traditionally been characterized as blue-collar and low skilled jobs, however the sector has a breadth of career pathways with higher than average wages. Electronic Computer Manufacturing, Railroad Rolling Stock, Roasted Nuts and Peanut Butter have Average Earnings per job at over \$100K a year and positions in Soft Drink Manufacturing, Farm Machinery and Equipment, and Concrete Product Manufacturing have an annual Average Earnings per job at over \$80K.
- Labor market research data shows that the Greater Sacramento region's manufacturing industry had fewer job losses during the pandemic than the rest of California. Additionally, the Greater Sacramento region's manufacturing recovery after the pandemic was at a greater improvement rate than the rest of the state. Currently, there are a greater number of jobs available than students achieving industry specific awards relevant to these positions in the region. Annual openings are five times greater than annual industry-specific awards.
- The Sacramento region's manufacturing jobs are projected to grow and many positions are Middle-Skill, which means they do not require a Bachelor's Degree. 43% of occupations in the Greater Sacramento Region are Middle-Skill, and 39% are Below Middle-Skill.
- Community Colleges play a pivotal role in ensuring the existence of a prepared workforce by offering programs that prepare individuals for manufacturing careers in the Middle-Skill area. California Manufacturers & Technology Association is developing scholarships for students in programs that offer certifications and credentials in manufacturing.
- The specialized industries with employment concentrations higher than the state average in the Greater Sacramento area are Rail, Food and Beverage, Construction Components. The highest earnings careers are in Computer Electronics, Rail Stock, and Nuts, and the top job postings by occupation cluster are in Maintenance & Repair, Production and Sales.
- All employer panelists stated they offer internships, apprenticeships and on-the-job training programs to help train new employees interested in a career in manufacturing. These work-based learning opportunities expose candidates to hands-on experience in the field and help prepare candidates for mid-level positions.
- Facing a lack of diversity in the industry, the employer panel detailed various approaches to diversifying their workforce that included working with Diversity, Equity, and Inclusion firms and non-traditional partners. For instance, panelists discussed work with

community-based organizations to increase awareness about manufacturing careers in the communities served by the CBOs.

Meeting Proceedings

Welcome and Overview

The Advanced Manufacturing Advisory Meeting opened up with Valley Vision's Communications and Research Specialist, Danielle Susa, and Sierra College's Dean of Career, Continuing and Technical Education, Amy Schultz, who explained the meeting's focus on emerging trends and the future of manufacturing. As a Greater Sacramento regional advisory supported by the Los Rios Community College District's Strong Workforce Program, Susa went on to further describe its objective in having industry partners inform community college faculty, high school instructors, and education and training partners on the skills and credentials needed to create a stronger regional pipeline.

Keynote Speakers

Lance Hastings, President and CEO of the California Manufacturers & Technology Association, in his keynote speech addressed the state of the manufacturing industry in California. He stressed that the manufacturing industry is a strong pillar of California's economy, noting that the sector was designated as a critical industry that operated at 75-80% capacity during the COVID-19 lockdown mandate. Hastings explained that increased demand and supply chain disruptions at the height of the pandemic resulted in a shift to developing domestic supply chains. Hastings closed out by stating that a well-prepared workforce will help sustain the manufacturing sector.

Additional Keynote Speakers Michelle Burris, Policy Researcher & Cohort Leader at The Century Foundation, and Tanu Kumar, Advisor at Urban Manufacturing Alliance, shared information on various initiatives in their respective organizations aimed at diversifying the manufacturing workforce given that it is predominantly male and white. Both organizations collaborated with twelve community colleges in the Industry and Inclusion Cohort in the 2022-2023 year. This cohort is aimed at industry partners to deepen the impact of their manufacturing credentialing programs and increase equity and inclusion in their local manufacturing workforce. The program utilizes culturally competent instruction, employer Diversity Equity and Inclusion (DEI) training and implementation, work-based learning, mentoring, and trauma-informed support services to support BIPOC students. Michelle explained that community colleges, CTE programs, and K-12 systems are a hub to identify prospective students and workers. Furthermore, efforts need to be made to demonstrate to underserved communities that the manufacturing sector offers stable careers that pay well. The introductory presentations on the manufacturing industry were concluded with a case study from North Baton Rouge, Louisiana, presented by our final Keynote Speaker Dr. Girard Melancon, the President and founder of Durango Work Corps.

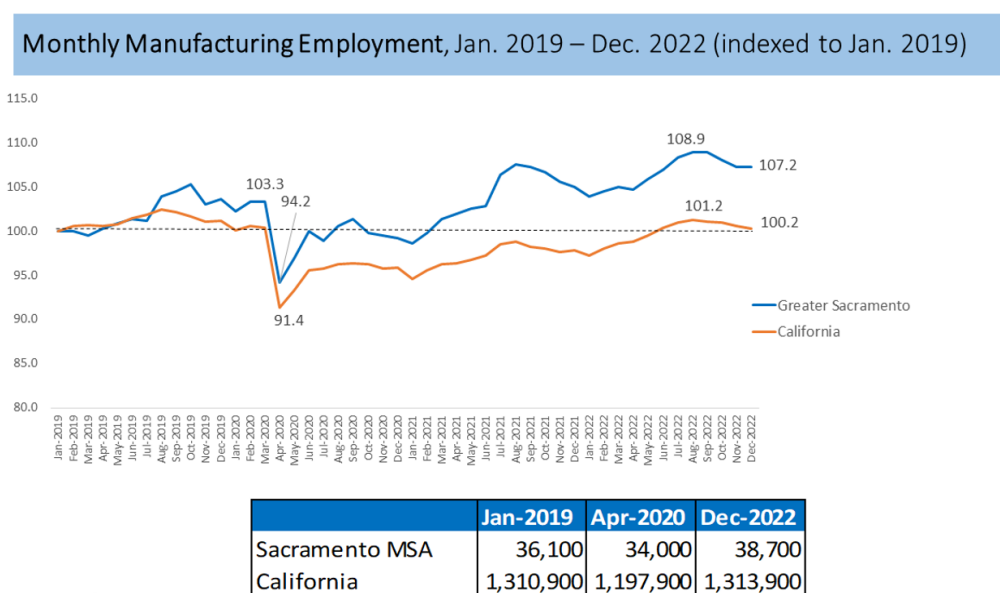
Labor Market Information Overview

Aaron Wilcher, Regional Director of the Greater Sacramento Region's Centers of Excellence, provided labor market and trend analysis. The Center of Excellence's research ensures that the Community College Career and Technical Education programs are aligned with high growth and high wage jobs. This information gives an outlook on local labor market conditions, skills and credentials needed, as well as industry hiring trend data.

Manufacturing Industry Job Trends and Specializations

Wilcher's presentation began with data on the manufacturing sector, specifically on the recovery that the Greater Sacramento Region made after COVID versus California's manufacturing sector recovery. Figure 1 (below) illustrates the month-to-month change for Manufacturing employment in the Greater Sacramento Region and across California. Sacramento had 7% more manufacturing jobs compared to 2019 while the rest of the state reached parity in the same period.

Figure 1: Monthly Manufacturing Employment, Jan. 2019 – Dec. 2022 (indexed to Jan. 2019)



The Center of Excellence presentation then narrowed its focus to regional industry detail analysis. As seen in Figure 2, below, **Top Specialized Manufacturing Industries in the Sacramento Region**, the sectors that have high job concentrations and highest earning potential are rail stock and nuts. The figure below highlights above average annual earnings per job and the location quotient, which measures industry concentration in terms of employment. Any location quotient above 1 indicates the Greater Sacramento area has a higher concentration of employment as compared to the nation. Railroad in the Greater Sacramento is the standout of higher job concentration with 11.64 times the concentration of employment.

Figure 2: Top-Specialized Manufacturing Industries, Sacramento Region

Top - Specialized Manufacturing Industries, Sacramento Region

NAICS	Description	2021 Jobs		2016-2021 Jobs %Change		% of All MFG Jobs	
		Greater Sacramento	CA	Greater Sacramento	CA	Greater Sacramento	CA
334111	Electronic Computer Manufacturing	1,968	69,154	-15.0%	15.8%	4.7%	5.2%
336510	Railroad Rolling Stock Manufacturing	1,627	1,941	188.9%	112.3%	3.9%	0.1%
312111	Soft Drink Manufacturing	1,296	10,451	18.0%	-7.6%	3.1%	0.8%
311911	Roasted Nuts and Peanut Butter Manufacturing	1,104	5,774	12.9%	-0.9%	2.7%	0.4%
312130	Wineries	980	39,179	44.1%	8.2%	2.4%	3.0%
321911	Wood Window and Door Manufacturing	913	4,134	43.2%	13.0%	2.2%	0.3%
332321	Metal Window and Door Manufacturing	777	5,909	-1.3%	1.5%	1.9%	0.4%
312120	Breweries	739	11,828	124.7%	45.2%	1.8%	0.9%
311423	Dried and Dehydrated Food Manufacturing	673	3,603	13.4%	4.9%	1.6%	0.3%
333111	Farm Machinery and Equipment Manufacturing	663	4,375	10.8%	14.1%	1.6%	0.3%
327390	Other Concrete Product Manufacturing	623	4,284	-29.8%	-9.3%	1.5%	0.3%
321991	Manufactured Home (Mobile Home) Manufacturing	503	2,580	282.1%	93.1%	1.2%	0.2%

Sizeable employment:

- Computer electronics
- Wineries

Higher shares of sector vs. CA :

- Rail stock
- Food & Beverage manufacturing
- Beer
- Construction components

Wilcher also shared data on Top Employers in the region and “middle skill” jobs that would be relevant to community college programs. The presentation shared occupational data on the range of positions in job postings in the Greater Sacramento Region and the skill level that would be required to attain them.

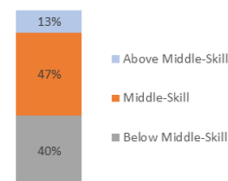
Workforce Jobs Postings Findings – Occupation and Skills Context

Figure 3.1: Manufacturing Occupation Data by Skill Level and Category, Sacramento Region (2016 – 2026)

Manufacturing occupation data by skill level and category, Sacramento Region (2016 - 2026)

Production

Occupational Skill Level	Employed in Industry (2021)	2016-2021 Employed %Change	Projected 2021-2026 Employed %Change	Range of Median Hourly Earnings	2021-2026 Avg. Annual Openings
Above Middle-Skill	2,653	-3.5%	22.5%	\$37.68-\$80.36	1,584
Middle-Skill	9,791	8.1%	14.5%	\$14.44-\$37.04	4,653
All Skill Levels	20,750	5.4%	14.4%	\$14.44-\$80.36	9,177



Maintenance and Repair

Occupational Skill Level	Employed in Industry (2021)	2016-2021 Employed %Change	Projected 2021-2026 Employed %Change	Range of Median Hourly Earnings	2021-2026 Avg. Annual Openings
Above Middle-Skill	-	-	-	-	-
Middle-Skill	821	-11.5%	27.8%	\$18.63-\$38.8	1,520
All Skill Levels	1,310	-2.7%	24.6%	\$18.63-\$38.8	2,799

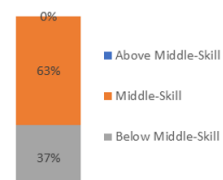


Figure 3.1 and 3.2 offer a deeper insight in terms of the industries and businesses in the region. Throughout this detailed view, the prominence of middle skill positions shows ample opportunity for those without a college degree. Middle skill occupations require more than a high school diploma but less than a bachelor's degree. The presentation shared that 43% of jobs in manufacturing require middle skills and 39 % require at least a bachelor's degree and therefore offer a lot of potential to community college and CTE career track programs.

Figure 3.2: Manufacturing Occupation Data by Skill Level and Category, Sacramento Region (2016 – 2026)

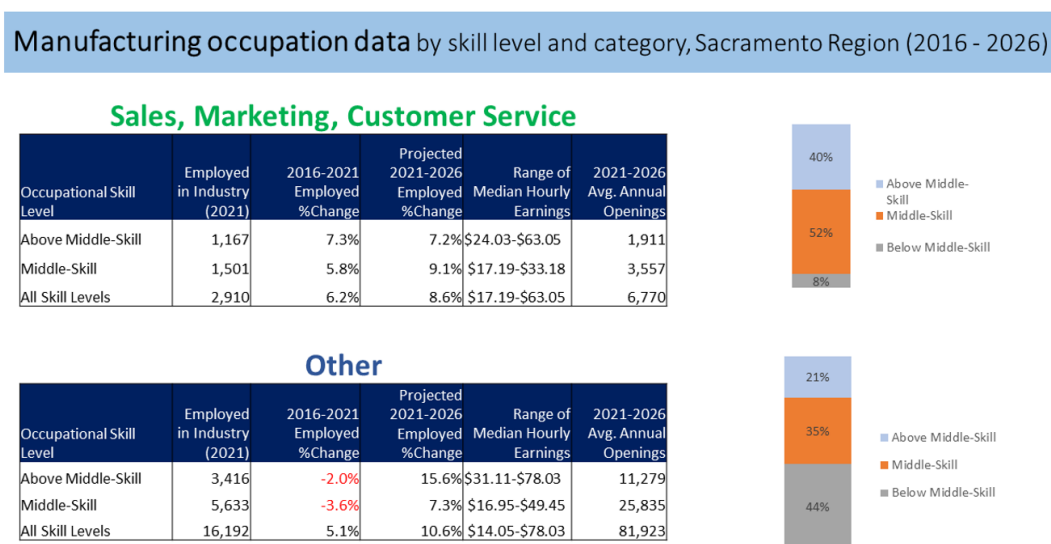
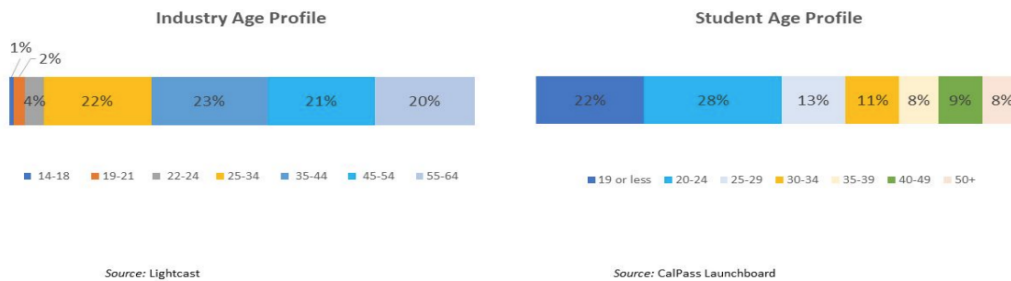


Figure 3.2 illustrates the level of skills mentioned by job postings. While many skill demands are highly technical, Wilcher explains that within these job listings many positions are in sales, marketing, and customer service. These are areas that require a more general level of proficiency, a middle skill set that can serve various positions in demand in the manufacturing industry. These skill sets can be acquired from short-term training programs.

The Center of Excellence included a demographic profile of the industry and community college students in manufacturing programs. The data compared age, gender, race and ethnicity. Interestingly, the Age Profile showed that over 40% of manufacturing employees are aged 45 and over, however the Age Profile of students in manufacturing programs is the opposite. Wilcher explained that this shows how industry needs to be recruiting from this population, and these programs need to be engaging with the industry partners in the region.

Figure 4: Manufacturing Demographic Profile by age

Manufacturing demographic profile- industry & CC students, Sacramento Region



After sharing about the manufacturing-related Community College Career Education programs in the north area colleges, Wilcher shared an analysis of the demand in the industry in terms of occupation annual awards compared to average annual openings. The data shared shows a striking gap of average awards compared to annual job openings as shown in Figure 5 (below).

Figure 5: Manufacturing Occupation Data by Skill Level and Category, Sacramento Region (2016 – 2026)

Manufacturing Awards, Enrollments, Openings, North/Far North region strategic plan 2023

<u>Avg. Enrollments</u> 3,100	<u>Avg. Awards</u> 450
<u>Avg. Annual Openings</u> 2,900	<u>Awards:Openings GAP</u> 2,500

Key Takeaways and Actions from the Labor Market Information

At the end of his presentation, Wilcher noted that the data indicates there is a lot of room for continued investment in the manufacturing sector. The labor market research presented many

key takeaways that can help align industry and community colleges to prepare students for manufacturing-related jobs. These takeaways include:

- The Sacramento region's manufacturing job growth is outpacing California at large, and we should build on that momentum
- Top detailed industries in manufacturing in Sacramento are Rail, Food and Beverage, Construction Component
- Highest earnings careers are Computer electronics, Rail Stock, Nuts
- Annual openings are five times greater than annual industry-specific awards
- The demographic age in the industry compared to the student population in manufacturing programs are opportunities for future talent pipeline streamlining to avoid a skills gap from the retiring labor force
- Focus on creating and maintaining support systems for transfer pathways in the manufacturing sector

Employer Panel Discussion

The advisory meeting's employer panel was assembled to inform community college curriculum development and faculty engagement with the manufacturing industry. The following employer representatives participated in the panel:

- **Sara Lausmann**, TSI SemiConductors, Line Maintenance Manager
- **Derek Palos**, Origin Materials, Technical Recruiter
- **Kevin McGrew**, Siemens, Director of Quality Management
- **Fraser Marshall**, DMG Mori USA, Inc. General Manager of Organizational Development & Learning
- **Jeppe Johansen**, TOMRA, Regional Service Director for North America

TSI SemiConductors is a world-class semiconductor technology development and volume production CMOS fab. Their Roseville location provides versatile process technologies and specialized foundry services that utilize novel materials, structures and devices. The company has 275 employees. Sara Lausmann is the Line Maintenance Manager at the company and supervises 43 technicians. She received her training in the Mechatronics program at Sierra College, which led her to the role at TSI SemiConductors.

Origin Materials is a world-leading carbon negative materials company. The company repurposes the carbon found in biomass into useful materials, while eliminating the need for fossil resources and capturing carbon in the process. The company employs approximately 200 people and has doubled in size within one year. Derek Palos is a technical recruiter who helps hiring managers recruit talent for the company.

Siemens builds rail bound passenger vehicles and trains. Its workforce has expanded to approximately 2500 people. Siemens works to cultivate relationships with its current employees and potential employees. Kevin McGrew, the Director of Quality Management, is president of the Sacramento Valley Manufacturers Association whose mission is to support and promote manufacturing pathways and support organizations that have manufacturing programs.

DMG Mori USA Inc is a worldwide leading manufacturer of high-precision machine tools and sustainable technologies that are at the center of global value chains. The company has 11 companies worldwide. It employs 12,000 people globally with 800 employees in the US. The location in Davis has 125 employees. Fraser Marshall is the General Manager of Organizational Learning and Development. He heads the academy for employee and customer training. His department runs a robust apprenticeship program.

TOMRA is the world's leading provider of reverse vending solutions. Every year, TOMRA enables the collection of more than 45 billion empty cans and bottles and provides retailers and other customers with an effective and efficient way of collecting, sorting and processing these containers. TOMRA partners with companies such as Blue Diamond Almond Growers and Mariani. The company also builds machines using AI technology to sort almonds and remove debris with high efficiency. Jeppe Johansen is the Regional Service Director for the North American Region.

Desired Competencies in Manufacturing

The panelists discussed relevant occupations and skills needed by their respective organizations. The skills and occupations range from welding and pipefitting, analytical technicians, chemists and industrial technicians, maintenance technicians and experience using personal protective equipment. The companies represented on the panel are intentional about increasing awareness of opportunities in manufacturing. For example, panelists stated that they offer internships and apprenticeships in addition to providing more training to prospective employees who have completed manufacturing programs in community college. They also offer on-the-job training and certification programs for various roles. In addition to diplomas, certificates and college credits, employers stated that they also consider any technical or mechanical hands-on experience an individual has, because this demonstrates interest in the manufacturing field. For example, TSI Semiconductors considers applicants who have experience working on their own cars. Because they are interested in well-rounded candidates, some panelists mentioned that they vet a candidate's level of experience working in teams as well as their aptitude and attitude. They also value candidates who have a continuous learning mindset because the industry is always evolving.

Recruitment Strategies

The panelists stated that they use standard recruitment practices such as posting jobs on LinkedIn and utilizing recruiters. However, to diversify the candidate pool, some companies post job openings on job boards used primarily by underrepresented groups. DMG Mori USA Inc holds "Tech Days" inviting students to visit their facilities and spread the word about open

positions. DMG Mori USA Inc will hold a “Tech Day” in Davis in 2023. TOMRA emphasized that events such as the manufacturing advisory provide networking opportunities to help recruit potential employees and cultivate interest in the career opportunities in the manufacturing industry sector.

Some organizations have partnerships with community colleges such as Sierra College and American River College. Students who gain experience by participating in internships with employers are able to develop networks that help them obtain employment after they complete the internship programs.

The Future of Manufacturing

The panelists concurred that the manufacturing industry in the region is projected to grow in the next three to five years. Supply chain challenges during the pandemic and in the last year and a half resulted in a resurgence in US manufacturing. Projects that slowed at the height of the pandemic are moving forward. Siemens mentioned that they have manufacturing contracts to build a fleet of buses that will require adequately trained employees as this contract extends to 2029-2030.

Additionally, this sector will increasingly leverage technological advancements in artificial intelligence and automation to improve efficiencies that require a workforce with these skills. Highly skilled welders and electricians will be highly desired across as well.

Diversifying the Talent Pipeline

The company representatives on the panel are employing various strategies to ensure they have a diverse workforce. Origin Materials works with a Diversity, Equity, and Inclusion firm and has DEI subcommittees to assist with their recruitment goals. Siemens highlighted that the California Mobility Center is collaborating with community-based organizations with the hope that manufacturing opportunities are accessible to all target populations and support the skill development of individuals in these populations. Panelists stated they are interested in hiring more females in technical positions in their organizations because it is evident that females enhance the consumer’s experience with their products and services. Additionally, companies are hiring individuals from diverse nationalities and cultures.

Conclusion

At the end of the advisory, faculty and employers were encouraged to continue to engage with one another for a stronger pipeline into the manufacturing fields around the industry. For more information about the report and labor market data provided, please contact:

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