I&I ROUNDTABLE CONVERSATIONS

CROSSCUTTING SOLUTIONS FOR A MORE INCLUSIVE MANUFACTURING ECOSYSTEM

By the Urban Manufacturing Alliance and The Century Foundation



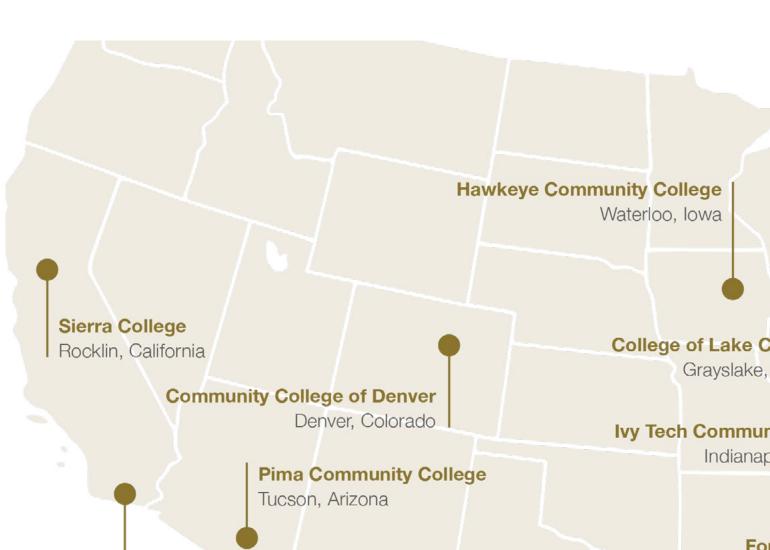


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Norco College Norco, California



INTRODUCTION

Sierra College first opened its doors in 1936, nestled in the outskirts of Sacramento in the suburb of Auburn, California. Today, its four campuses encompass more than 3,200 square miles covering the Roseville, Rocklin, Grass Valley, and Truckee regions. Within this area, the coming manufacturing boom is palpable. Bosch recently announced plans to invest \$1.5 billion in a semiconductor fabrication plant in neighboring Roseville.1 But this Sacramento area facility is just one among many in the semiconductor industry that stand to benefit from efforts to bolster the domestic chip supply. Bosch's neighbors include chip design facilities owned by Intel and Micron in nearby Folsom.2 On top of that, the Sacramento suburbs are home to several facilities that are a part of the green energy manufacturing base and poised to see a surge in demand for their business with billions in federal investments pushing our country towards a clean energy future.3

This region is no stranger to economic shocks. After all, the birthplace of the Gold Rush is just 30 miles from Sierra's main campus at Sutter's Mill, and Silicon Valley and its capacity for innovation is just a few hours' drive away. We returned to the region with Sierra College leadership and its regional partners to discuss how to map a path for an inclusive and diverse manufacturing workforce, so that this time, the prosperity it can bring will be broadly shared.

Some of the key lessons gleaned from this wide ranging conversation are outlined below.

¹ McGough, Michael, "German conglomerate Bosch to buy Roseville tech company, plans \$1.5B investment at site." Sacramento Bee. April 26, 2023. https://www.sacbee.com/news/business/article274735776.html#storylink=cpy

² Semiconductor Industry Association, US Semiconductor Ecosystem, https://www.semiconductors.org/u-s-semiconductor-ecosystem-map/

³ Blue Green Alliance, Map and Analysis: Building a Strong Manufacturing Base for Clean Energy in the US, May 31, 2023, https://www.bluegreenalliance.org/resources/clean-energy-supply-chain-analysis/

"I CAN BE WHAT I CAN SEE" MENTORSHIP, ROLE MODELS, & EARLY EXPOSURE

A significant body of research has shown that diversity in the classroom boosts the performance of historically disenfranchised groups. Students of color in diverse classrooms are more likely to stay in school and enroll in postsecondary education.4 Students tend to perform better academically and have higher aspirations when they have teachers who share their racial and cultural background. For instance, Black students who had just one Black teacher by third grade were 13 percent more likely to enroll in college - and those who had two were 32 percent more likely.5 Furthermore, students of color are more likely to report inclusion, belonging, and cultural understanding in their classrooms when paired with a teacher of a similar background.6 Similar evidence of

positive impact appears for women in male-dominated fields like math and science, or arenas where there are few professional women at all.⁷



⁴ The Century Foundation, "The Benefits of Socioeconomically and Racially Integrated Schools and Classrooms." April 19, 2019. Accessed May 2023. https://tcf.org/content/facts/the-benefits-of-socioeconomically-and-racially-integrated-schools-and-classrooms/

⁵ San Diego Foundation, "Why is Teacher Diversity Important?" March 18, 2022. Accessed May 2023. https://www.sdfoundation.org/news-events/sdf-news/why-is-teacher-diversity-important/

⁶ Egalite, Anna and Brian Kisda, "The many ways teacher diversity may benefit students." August 19, 2016. Accessed May 2023. https://www.brookings.edu/blog/brown-center-chalkboard/2016/08/19/the-many-ways-teacher-diversity-may-benefit-students/

⁷ Card, David et al, "The Impact of Female Teachers on Female Students' Lifetime Well-being." NBER. September 2022.
Accessed May 2023. https://www.nber.org/system/files/working_papers/w30430/w30430.pdf;
Bailey, E.G. "Female InClass Participation and Performance Increase with More Female Peers and /or Female Instructors in life Sciences Courses." CBE. September 2020. Accessed May 2023. cbe.19-12-0266 (lifescied.org)

In the words of Amy Schulz, the Dean of Career, Continuing, and Technical Education at Sierra College, they have set out to replicate these successful models into their classrooms –

"We have a wonderful faculty and staff who are also a big part of that, to build an inclusive welding department and we've seen an increase of women and people of color in our welding programs. So a big piece of that has been intentional in our hiring...And so that our instructors and [instructional assistants] are able to connect with students on a different level."

At the roundtable with Sierra College, welding student Emma Fick noted the importance of having the right mentors in her community, in particular Aleda Vaughn, a welding instructor who was also in attendance. Emma described the hurdles she faced in choosing this career path –

"I'm super happy that I chose this. But it has been pretty difficult because I've had a lot of people – my parents, family members, different mentors – I've had tell me I shouldn't because I was a girl or because there are too many men, and there are too many things that could go wrong, or that I should go into something more feminine... It really spurred me on more. Having a woman role model in welding."

Not only does an instructor (or instructor's assistant) serve as a role model for particular

students, they also serve as the arbiter of cultural norms for the classroom and create an environment where everyone can feel safe and succeed. Welding instructor Aleda Vaughn noted that problematic, sexist (and racist) behavior only comes from a small minority of men, but it's important to address and discuss it with the whole class –

"Women need to know that they are in a safe place in a manufacturing environment. And they need to know that there are a great many men who are there and willing to help them if there is an issue."

Beyond the needs of increased diversity for community college instructors, the roundtable participants were also concerned about the lack of early exposure to manufacturing - particularly through access to Career and Technical Education (CTE) programs for young students. Dean Peckham, the Executive Director of Sacramento Valley Manufacturing, spoke to the challenges of developing the diversity pipeline at the high school level –

"It's difficult these days to get schools to start CTE programs, especially around manufacturing, because it's fairly expensive to build a program and it's even more challenging at the high school level to find qualified instructors...

"Finding female instructors, and finding instructors or color to teach at the high school level, or even the junior high level, you

know, goes a long ways towards providing that trust and safe space."

A model for potential early exposure is a system used in Germany wherein German students by ages 15 or 16 can choose an apprenticeship track and immediately sign an employment contract with a company. For the next two to three-and-a-half years, their education is split roughly between 70 percent workplace learning and 30 percent in a vocational high school, and by the time they turn 18, they're ready to join their workforce.⁸

⁸ Cris Taylor, "Is the German Apprenticeship Model the Answer for US Manufacturing?" May 31, 2021, https://www.productionmachining.com/articles/is-the-german-apprenticeship-model-the-answer-for-us-manufacturing

Amy Schulz

Dean of Career, Continuing, and Technical Education at Sierra College

"We have a wonderful faculty and staff who are also a big part of that, to build an inclusive welding department and we've seen an increase of women and people of color in our welding programs. So a big piece of that has been intentional in our hiring...And so that our instructors and [instructional assistants] are able to connect with students on a different level."

Emma Fick

Welding student

"I'm super happy that I chose this. But it has been pretty difficult because I've had a lot of people – my parents, family members, different mentors – I've had tell me I shouldn't because I was a girl or because there are too many men, and there are too many things that could go wrong, or that I should go into something more feminine... It really spurred me on more. Having a woman role model in welding."

Aleda Vaughn

Welding instructor

"Women need to know that they are in a safe place in a manufacturing environment. And they need to know that there are a great many men who are there and willing to help them if there is an issue."

TRANSPORTATION & ACCESS TO ENABLING SERVICES

The Sacramento region, similar to other regional economies across the country, grapples with the intertwined challenges of lack of affordable housing and transportation. At the core of these issues is land use - as pointed out at the roundtable, workers and business owners are hard-pressed to find adequate housing and other services in reasonable proximity to workplaces. For the manufacturing industry, this is further exacerbated by the lack of land zoned for industrial uses in and near urban areas.

For example, in Sacramento County, only a year ago there was a shortfall of nearly 60,000 affordable homes for its lowest-income renters. In Placer County, where Sierra's main campus finds its home, renters would need to earn more than \$6,500 a month to afford the average asking rent. Adding another layer of difficulty are some of the most congested roadways in the nation. According to the Traffic Volumes report by Caltrans, California's state highways had an annual average daily traffic of 390,000 vehicles

per mile in 2017, which is the highest among all states. The report also shows that California's state highways had a peak hour volume of 9,600 vehicles per mile in 2017, which is the second highest among all states (after New Jersey).¹¹

Sacramento's Regional Transit system consists of a light rail system that covers close to 43 miles with 3 lines and 54 stations, as well as a bus fleet of more than 300 vehicles that provide more than 6 million trips to passengers annually. But with headways in the region that can range from 15 minutes to 30 or more, this may not be the most reliable way for employees to reliably get to work.

Dean observed that these spatial divides don't just present affordability and commuting challenges, but a lack of awareness as well –

"It's more kind of a function of land use around here that the manufacturers are so far removed from the residential population,

⁹ Mazzella, Danielle, "Sacramento County Housing Need Report 2022." May 2022. Accessed May 2023. California Housing Partnership (chpc.net)

¹⁰ Mazzella, Danielle, "Placer county Housing Need Report 2022." May 2022. Accessed May 2023. https://chpc.net/?sfid=181&_sf_s=placer&_sft_resources_type=housing-need+level-county

¹¹ Caltrans, Traffic Volumes. 2017. Accessed May 2023. https://dot.ca.gov/programs/traffic-operations/census/traffic-volumes

¹² Sacramento Regional Transit Fact Sheet, FY2022, https://www.sacrt.com/aboutrt/documents/SacRT_System_Fact_Sheet_2023.pdf

that unless you work there or you know somebody who works in that community, you don't know that manufacturing even exists... It creates a lack of awareness. It creates real transportation challenges at times, just to get people to those places of work."

in ensuring that we can build a more diverse manufacturing workforce.

Beyond the relationship between just the employee and the employer, many of the workers that we must recruit into manufacturing roles need a set of enabling services from the care economy to be able to work full time jobs. The proximity of those services will be just as critical



SUPPORTING AND TRAINING THE TRAINERS

As critical as role models are for recruiting people of color or women into manufacturing, the job is not complete unless their success is facilitated once they are in the door. Aleda Vaughn, a welding instructor at Sierra College, explained - "we can't assume that just because they got their butt in a seat, that they're prepared to stay there over the long term."

Whose job is it to keep students on track? Aleda points the finger at instructors like herself – "The students may not know that they need the help. And as instructors, we are that first line of recognizing what help the student may need."

She goes on to suggest a model for instructors at Sierra College that is part CTE instructor, part college completion coach - "there does need to be some instruction that happens by the instructor that is not the content is not the welding content, not the mechatronics content, but the [content on] how do you navigate this educational system. Because a lot of students will make it in the classroom, but they don't make it through the program."

Replicating the proactive engagement that Aleda suggests will require deliberate effort on behalf of the institutions that employ them, including support networks and training.



SOLUTIONS THAT WORK FOR EMPLOYEES AND EMPLOYERS

Martin Ross, who also serves as the Chairman for the Sacramento County Appointee Equal Employment Opportunity Advisory Committee, suggested that the industry do some rethinking that restores some shared prosperity. In his words, employers should be thinking about "cultivating a great workspace that is not only amenable for the employee, but the employer."

Kevin McGrew is the President of the Sacramento Valley Manufacturing Alliance and a 36-year employee of Siemens in the area. He described some of the gestures that Siemens had made in this area –

"We used to hire our entry level production people as agency temporary workers. Why? Because we could and it was cheaper for us. But frankly, it wasn't fair to the new employees, predominantly new employees that really needed some of those benefits that they were not getting. We made a commitment as an organization – and I'm proud to say it – Siemens made a commitment: let's hire every entry level person, whether it's an engineer, the project manager, or material handler, as a full time Siemens employee to get the same benefits."

Manufacturers should consider a panoply of options and worker empowerment as the manufacturing rush starts to set in. Enabling services (noted above) target and help many workers meet obligations outside the workplace. Providing for children, aging parents, and the disabled with quality care enables many workers – disproportionately women – to join the workforce, contribute more hours to their paying jobs, and earn more. Roundtable participants also noted that physical alterations to the work spaces themselves could help encourage wider participation in manufacturing.

Additionally, the Century Foundation and the Urban Manufacturing Alliance have done some previous work encouraging small businesses to think about succession planning through an equity lens that could facilitate ownership to a new generation of diverse business leaders. ¹³ This work also highlights the positive contributions of a unionized workforce that advocates for higher wages, flexible schedules, and benefits that ensure employees reap rewards when businesses are successful.



¹³ Andrew Stettner and Audra Ladd, "The Challenge of Business Succession in Manufacturing and the Opportunities for Diversifying Ownership," July 2019, https://www.urbanmfg.org/wp-content/uploads/2019/07/Succession-Planning-for-Manufacturing.pdf

CONCLUSION

This roundtable was the first time that the major players for the Sacramento Valley manufacturing industry (from business, to community organization, and community college) had gathered to talk about diversifying the workforce.

In 90 minutes, the group left a request for more: more conversation, more coordination, additional problem solving, and a pathway forward. Key lessons from this conversation include –

1. Role models matter.

Sierra College intentionally hired diverse faculty in their welding department that helped recruit a diverse student body in manufacturing *and* created a culture to retain them. This model would apply to workplaces and higher education institutions alike.

2. Everything outside the workplace matters for the workday.

A long commute, a sick child, or stress paying the bills all affect how well an individual will perform at their job or in the classroom. Individuals from diverse backgrounds are often confronting difficult, systemic challenges – like decades' long failed land use policy that makes commutes longer, inconvenient, and expensive.

3. Supporting the trainers.

Instructors at community colleges are the first line of defense in making sure a student completes a manufacturing program. They'll be the first to notice when a student doesn't show up or struggles in class, and therefore, are the first responders. We shouldn't expect teachers to carry this non-curricular responsibility without ensuring that they have the appropriate training and financial support to do the job right.

4. Solutions that work for everybody.

When confronted with opportunities to invest in their workforce, employers should default to yes. From flexible schedules to turning contracting positions into full time employees, examples from the Sacramento area show that everyone benefits. This would also apply to approaches in solving challenges that employees face outside the workday, as well, like childcare, sick leave, and other benefits.

