Sacramento Capital Region Next Economy Cluster Workforce Action Plan: Advanced Manufacturing Cluster Forum Proceedings

January 13th, 2016
Sierra College
Series 1 of 6

Introduction

In Fall 2016 Valley Vision, supported by JPMorgan Chase & Co. and in partnership with Los Rios Center for Excellence (COE) and the Burris Service Group, initiated a project to identify the current workforce needs of the six Next Economy high growth business clusters in the six-county Sacramento Capital Region. Next Economy is the region's Comprehensive Economic Development Strategy (CEDS) as designed by the U.S. Economic Development Administration (EDA). This assessment was accomplished through quantitative research reports and qualitative validation of the data and emerging trends through employer and partner forums. These activities set the stage for action plans that identified priorities for each of the clusters.

Purpose

In 2011, Valley Vision along with leaders across the region undertook a major initiative called Next Economy. The goal was to transform a $97 billion annual economy that suffered widespread hardship and a lagging recovery into one that is diversified, robust and sustainable. In 2012, as part of that effort, a region-wide economic analysis turned attention to six promising business clusters that could be catalyzed for job creation. They were identified as business clusters where the region has innate advantages and the strongest potential for growth based on economic performance indicators. Fast forward to today: our economy has recovered all the jobs that we lost, but the character of our economy is different.

JPMorgan Chase & Co.

Sierra College

Overview of Next Economy Cluster Update Research & Forums

Valley Vision, the Los Rios Center of Excellence, and Burris Service Group, supported by JPMorgan Chase & Co., conducted economic research and employer and stakeholder forums to:

- Update the 2011 analysis of the six Next Economy high growth business clusters
- Identify emerging workforce needs and opportunities
- Generate workforce action plans
- Advance strategies to address critical workforce skills gaps
- Better align education and workforce development resources to meet employer and workforce needs
- Improve the regional economy

This document summarizes the results of the Advanced Manufacturing cluster forum. The research report can be found at:

http://valleyvision.org/resources/advanced-manufacturing-cluster-update-report-workforce-needs-assessment

Next Six High Growth Next Economy Clusters

Advanced Manufacturing

Clean Energy Technology

Education and Knowledge Creation

Food and Agriculture

Information and Communications Technology

Life Sciences and Health Services

The goal of the Next Economy Cluster Workforce Action Plan is to update the region's 2012 cluster economic analysis; identify critical workforce skills gaps that exist within the six clusters today; mobilize and align cluster stakeholders around job creation strategies, and create targeted workforce action plans for each cluster that target critical skills gaps, education and training resources, and implementation priorities.

Process

Los Rios Center for Excellence (COE), in partnership with the Burris Service Group and Valley Vision, prepared six research reports, one for each cluster, that describe the workforce and economic characteristics of each cluster and education and workforce development resources for middle-skilled jobs, defined as jobs requiring more than a high school degree. Valley Vision convened six Workforce Cluster Forums in the Winter and Spring of 2016 in collaboration with a wide range of partners. The first forum convened was for the Advanced Manufacturing cluster.

Forum Overview and Purpose

The purpose of the Advanced Manufacturing forum was to present the initial economic research findings to employers, industry experts and community partners and collect feedback on data findings. Feedback was gathered through a facilitated discussion where participants identified pressing workforce needs, current and future occupational demands, education and training resources, and potential priorities for a cluster action plan. The action plan is intended to tackle current and emerging cluster workforce needs and gaps. See Appendix A for Forum agenda.

Advanced Manufacturing Cluster Definition

Advanced Manufacturing is a process that integrates the coordinated use of information, automation, software, sensing and networking to improve the efficiency and reduce costs of manufacturing. Although Advanced Manufacturing methods may be utilized by any manufacturing industry, high use of these methods tends to cluster in the following six subsectors:

- Aerospace Manufacturing
- Chemical Manufacturing
- Computers/Electronics Manufacturing
- Machinery Manufacturing
- Plastic Products Manufacturing
- Transportation Manufacturing

Source: COE, Advanced Manufacturing Report, page 4

President Willy Duncan, Sierra College, welcomed participants and provided an overview of Sierra College's programs supporting Advanced Manufacturing. See Appendix B for list of participants. Following President Duncan, Kari Dohn Decker, Head of Corporate Responsibility for the Western Region, JPMorgan Chase & Co., discussed JPMorgan's sponsorship of the project. Kari touched on the company's launch of a $250 million, five-year nationwide workforce readiness initiative -*New Skills at Work*- to help close the skills gaps in sectors where employers struggle to fill vacancies, and to assist job seekers to access the education and training required for those positions.

Presentation of the Research

Theresa Milan, Director for Northern California Region Los Rios Center of Excellence, gave a presentation on workforce training gaps within the Advanced Manufacturing cluster. A definition of Advanced Manufacturing subsectors was provided along with industry examples. As of 2015, the cluster consisted of 16,100 jobs, equating 1.5% of the total regional employment, with an average earning of $86,060. The cluster is projected to grow by 5% over the next five years, compared to overall manufacturing, which is projected to grow by

less than 1%. Looking at new jobs, the cluster is projected to add more than 755 job openings. Openings and replacement jobs in selected high demand occupations is projected at 2,530 jobs over the next five years.

The cluster directly and indirectly employed 16,100 people in the region with a high multiplier, contributes $10.6 billion in output. It is important to note that the trajectory of projected jobs can be accelerated or improved through targeted strategies. The full research report is available through the link provided on page one.

Employer Panel

The goal of the panel is to understand the regional workforce challenges that employers in the cluster are facing. President Duncan facilitated a discussion with a panel of four employers and a representative from a statewide manufacturing association, listed below:

- Nick Bruno, President of Harris and Bruno International
- Shauna Harrington, Senior Director, Outreach and Executive Talent for VSP Global
- Rich Palilonis, General Manager of TWT Products for Teledyne Microwave Solutions
- Rob Sanger, Manager of Training Services for California Manufacturers & Technology Association (CMTA)
- Don Whitaker, Founder and CEO of Ceronix

Each panelist provided a brief introduction of his/her company or industry with an overview of company products and services, location, employment characteristics and target customers. The panelists were asked a series of questions:

- What surprised you about the research findings/information? Are they on target?
- What kind of positions do you have most difficultly filling?
- What skill sets are currently in greatest demand?
- What educational and training gaps do you see that we should address?
- What kind of workforce challenges do you see your company/industry facing?
- What is the most critical priority that an action plan should address?

Panel Summary

Panelists voiced concerns regarding the aging workforce and the large workforce gap between current employees, who have a range of 20-40 years of experience, and entry-level applicants. One issue that was common amongst employers was changing workforce characteristics. Many employers stated that once they hire someone who is "somewhat qualified," they put that employee into a two-year training program. Once their two-year training is complete the employee often leaves to pursue other opportunities. Many entry-level applicants are often under qualified yet have high expectations for pay, status and job responsibilities because they feel entitled with a four-year college degree.

Some regional education programs are highly regarded by the panelists. Employers cited Sierra College's Mechatronics program, which provides students with a well-rounded curriculum and hands on work experience, as a model program. The panel stressed the importance of having more programs such as Sierra College's across the region.

Other workforce challenges that were identified:

- Applicants want to work in a "sexy/cool" company, such as Google, Facebook, etc., and the perceived realities of manufacturing work does not appeal to graduates.
- The Computer Numeric Controlled (CNC) machinist position is difficult to fill but there is no training program available in the region. The machinery and its operation is too costly to do CNC in-house training.
- There is an employee training lag - training requires 1- 1 ½ years to get people "up to speed."
- One thousand two hundred and fifty people (1,250) graduate annually from the region and high majority leave the area.
- Employers emphasize the importance of practical knowledge and hands on experience over solely "book smarts" for engineers. Classes need to focus on building hands- on skills, not theory.
- Robotics will be a subsector that will grow and create jobs, and we have no training programs for this, which will put our region further behind.
- Workers who operate expensive and complex machinery need to be experienced, not recently high school graduates, certificate, or AA students without previous hands-on experience.
- It is very difficult to find people with manufacturing AND supervisory skills, for positions such as Factory Floor Supervisor.
- Governmental barriers make it difficult to scale up businesses in the state, compared to international and out-of-state locations.

Summary of Group Discussion

The employer panel was followed by a facilitated group discussion, where all forum participants were encouraged to provide feedback on high needs workforce gaps, key resources and recommended priorities. The group was asked two questions:

- What are the most critical workforce needs in the Advanced Manufacturing Cluster?
- How can employers, education, workforce, and economic development address these needs?

Figure 1 summarizes key issues that were discussed regarding the region's most critical workforce needs.

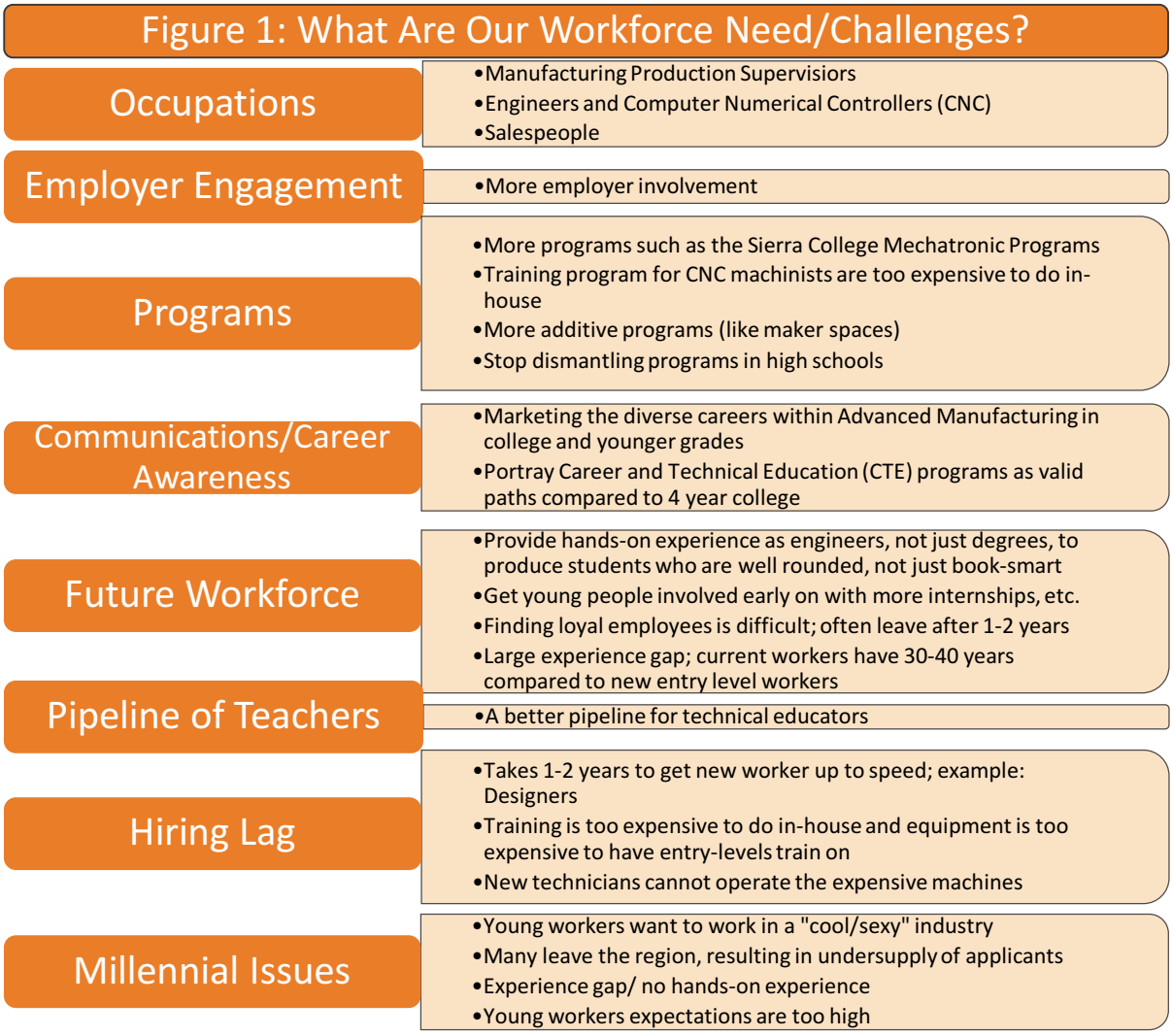

Figure 1: *The region's most critical workforce needs in Advanced Manufacturing*

Participants were asked to suggest actions by employers, workforce, economic development and education to respond to these needs. Figure 2 summarizes the input.

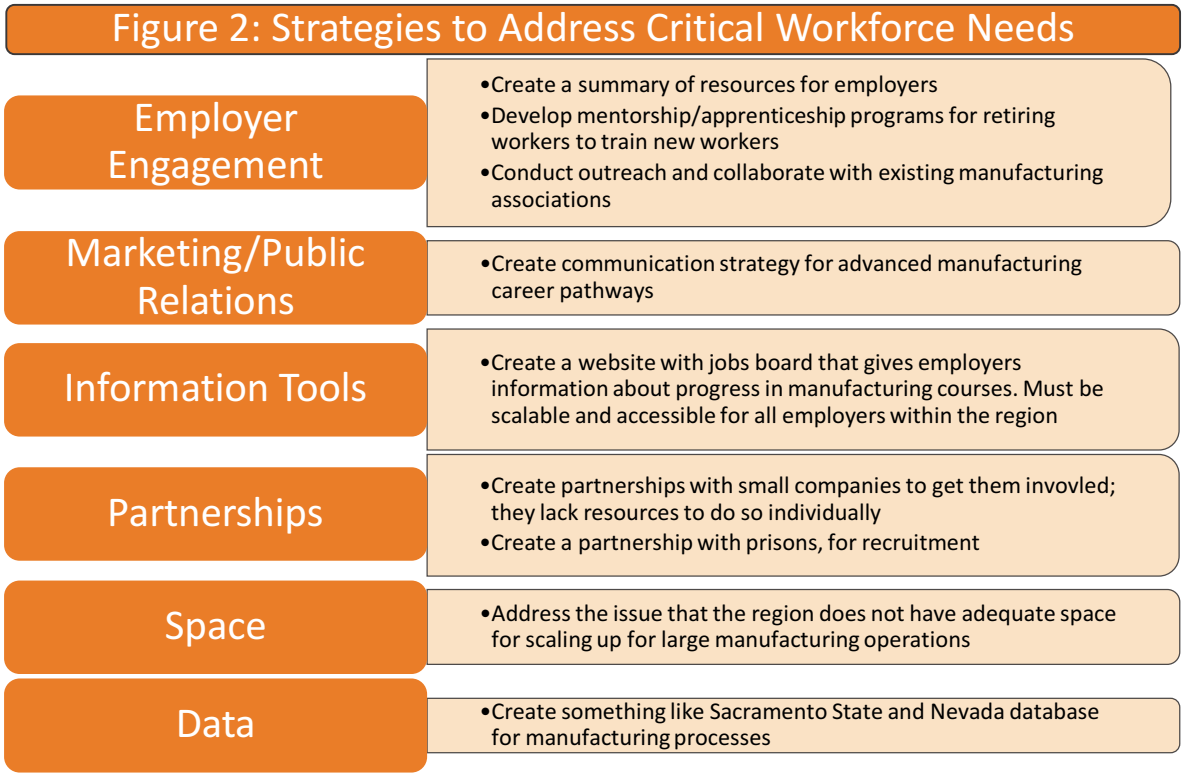

Figure 2: *Strategies to Meet Workforce Needs in Advanced Manufacturing*

Participants also discussed the assets that exist in the region to build upon and for new strategies to address cluster workforce needs. Figure 3 summarizes the assets that were identified.

ASSETS:	Sierra College: Program to develop apprenticeships for employers for replacement workers	Sacramento Valley Small Manufacturing Engineers	Support from multiple groups/organizations
Strong Workforce Boards	Launch Path: Electronic Internship matching tool	Innovation/Maker Space: •VSP, the Shop •Hacker Lab	Next-Ed, CAP, Crane/ Deputy Sector Navigator
Existing research forums	One-stop Centers	New research to help guide resource and investments	Doing What Matters for Jobs and the Economy Inititative

Figure 3: *Assets in the Sacramento region to support Advanced Manufacturing cluster*

Participants then were given three votes to indicate the highest priority issues. Figure 4 shows the top priorities.

Figure 4: Top Action Items/Priorities
1. Make the Capital Region a national center for the maker space movement, expanding development of maker spaces and other non-traditional career technical education centers through education/employer/community partnerships and investments.
2. Work with industry association partners to organize a robust regional Manufacturers Network for increased partnerships with education, expanded awareness of industry opportunities.
3. Accelerate the pipeline for high demand occupations, including CNC machinists, supervisors, engineers and technicians.
4. Create a pipeline of technical educators.
5. Develop more customized training programs with employers to upskill existing workers.
6. Internship programs/apprenticeship to match students and employers early on.
7. Build a map of resources, decision tree & public awareness campaign strategy to generate awareness early on.
8. Increase site visits, including on-the-job training for (K-12) students to promote career awareness.
9. Expand outreach to future generations and build on regional career pathways/opportunities.

Figure 4: *Top Action Items/priorities voted on by participants*

Overarching Themes and Advanced Manufacturing Specific Recommendations

On May 3rd, Valley Vision hosted the 2016 Capital Region Workforce Summit at UC Davis. The Summit presented new research findings on high priority skill gaps facing the Next Economy clusters, and cluster specific action plan priorities from all six cluster forums held with regional employers, education institutions, workforce development agencies and industry partners. Valley Vision presented both overarching themes that emerged from the cluster forums and research, and cluster-specific recommendations to support each Business cluster.

The overarching themes across all clusters were the need for:

- Career Awareness: Implement a major region-wide Marketing and Communication campaign to elevate awareness of high demand career opportunities across all business clusters. Targets include: elementary and middle school, millennials, workers in need of re-skilling and parents
- College/Career Readiness: Accelerate the number and type of internships, apprenticeships, and on-the-job training opportunities for students and current workers. Expand non-traditional apprenticeships; increase the number of maker spaces and access to state of the art equipment; address barriers to employer partnerships

- Diversity of the Workforce: Adopt and invest in successful employer models to increase workforce and employer diversity, including women, low income and minority students and workers. Provide access to STEM programs for all; bring career awareness earlier through schools (K-12)
- Additional Research on high demand occupations and skills: Conduct in-depth research with employers on projected and emerging in-demand occupations, skills requirements and training resources not captured in the research data. Areas include: Clean Economy, Food and AG, Education, and cross-cluster opportunities such as ICT & Health
- Alignment of education and training resources: Increase engagement and alignment of resources and institutions across employers, educational systems, economic and workforce development and community partners. Align community colleges with 4-year institutions and strengthen pathway programs.

The issues that were of the highest priority in Advanced Manufacturing were:

1. Make the Capital Region a national center for the **maker space** movement, expanding development of maker spaces and other non-traditional career technical education centers through education/employer/community partnerships and investments.
2. Work with **industry association partners** to organize a robust regional Manufacturers Network for increased partnerships with education, expanded awareness of industry opportunities.
3. Accelerate the **pipeline for high-demand occupations**, including CNC machinists, supervisors, engineers, and technicians.
4. Create a **pipeline of technical educators**.

Conclusion and Next Steps

The input from these forums provided specialized knowledge about workforce needs from local companies and educational and training institutions. Through this process, our region optimized the benefits of the economic recovery by mobilizing cluster stakeholders, creating an understanding of the current state of our clusters, and strategically planning for continued prosperity, job creation and growth. The economic cluster research, forums and Workforce Summit were key steps in better understanding current economic, educational and workforce issues that are at play in the current regional environment. These set the stage for action strategies to address the needs that were identified. Valley Vision will move into Phase II of cluster action plan implementation in Fall of 2016 and into Spring 2017.

Appendix A: Agenda

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VALLEY VISION Connect. Partner. Impact.

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SIERRA COLLEGE

Capital Region Advanced Manufacturing Workforce Cluster Forum

January 13, 2016
9:00 AM– 12:00 PM
Sierra College, Board Room: 5000 Rocklin Road, Rocklin, CA 95677

Project Partners:

Placer

NextEd Education for the next economy

California Manufacturers & Technology Association

Golden Sierra

City of Sacramento Economic Development

Seta

North Central Counties Consortium

Burris Service Group

metrochamber Sacramento Metropolitan Chamber of Commerce

AGENDA

9:00- 9:30 AM Registration

9:30- 9:50 AM Welcome and Introductions

- *President Willy Duncan, Sierra College*
- *Trish Kelly, Senior Vice President, Valley Vision*
- *Kari Dohn Decker, Head of Corporate Responsibility for the Western Region, JP Morgan Chase & Co.*

9:50- 10:15 AM Presentation of Cluster Analysis

- *Trish Kelly, Valley Vision*
- *Theresa Milan, Center of Excellence Director for Northern California Region, Los Rios Center of Excellence*

10:15-11:15 AM Employer Panel—*Facilitated by Willy Duncan*

- *Nick Bruno, Harris and Bruno International, President*
- *Rich Palilonis, Teledyne Microwave Solutions, General Manager TWT Products*
- *Don Whitaker, Ceronix, Founder*
- *Shauna Harrington, VSP Global, Senior Director Outreach and Executive Talent*
- *Rob Sanger, California Technology Manufacturing Associations, Manager of Training Services*

11:15 AM-12 PM Facilitated Discussion—High Need Workforce Gaps, Key Resources, and Recommended Priorities

- *Evan Schmidt, Project Manager, Valley Vision*
- *Trish Kelly, Senior Vice President, Valley Vision*

Appendix B: Participant List

First Name	Last Name	Company
Scott	Arfsten	Helix Electric
Michael	Bell	SME Sacramento Valley Chapter
Liz	Bosley	Economic Development Department
Jeff	Briggs	SME Sacramento Valley chapter
Nick*	**Bruno**	**Harris and Bruno International**
Jason	Buckingham	Executive Director of Golden Sierra JTA
Robert	Burris	Burris Service Group
Nancy	Crooks	Northern Central Counties Consortium
Kari	Decker	JP Morgan Chase & Co.
Willy	Duncan	Sierra College
John	Dunn	Cosumnes River College
Giovanna	Forno	Valley Vision
Darlene	Galipo	Golden Sierra
Farhad	Ghadamli	UC Davis
Bill	Halldin	Halldin PR
Kim	Harrell	Folsom Lake College
Shauna*	**Harrington**	**VSP Global**
Trish	Kelly	Valley Vision
Roy	Kim	Sacramento Employment and Training Agency
Jeff	McLaughlin	Economic Development, El Dorado County
Gabriel	Meehan	Sacramento City College
Donald	Merrill	California Department of Industrial Relations
Theresa	Milan	Los Rios Center of Excellence
Mike	Miller	Plastic Pack
Samantha	Minor	Valley Vision
Marc	Mondell	Economic and Community Development, City of Rocklin

Rich*	**Palilonis**	**Teledyne Microwave Solutions**
Gary	Panepinto	Manex Consulting
Dean	Peckham	Economic Development, City of Sacramento
Carol	Pepper-Kittredge	Sierra College, Deputy Sector Navigator for Advanced Manufacturing
Stella	Premo	Next-Ed
Eric	Riel	Yuba Community College District
Rob*	**Sanger**	**California Manufacturers & Technology Association**
Evan	Schmidt	Valley Vision
David	Snyder	Office of Economic Development, Placer County
Paul	Stark	Digital Dimensions
William	Walker	Sacramento Employment and Training Agency
Cara	Welch	Economic Development Department
Don*	**Whitaker**	**Ceronix**
* Indicates the attendees are panelist		

Appendix C: Employer Panel Bios

Nick Bruno, President of Harris and Bruno International:

Since 1948, Harris and Bruno has focused on delivering machinery solutions for printing and coating industries. In the beginning they built machinery for flexographic printing, various type of specialty packaging coating, and magnetic media. In 1986 the company entered a joint venture with its largest customer to develop an ultimate chambered doctor blade system. Today, the company is a leader in the industry with automated and reliable coating systems and inking systems for printing, worldwide. Offices are in Roseville, Germany and Japan along with distribution agreements in other areas of the world. Nick Bruno is the son of Louis Bruno, who founded the company and partnered with Mel Harris. Nick has a BS degree in Industrial Engineering from Cal Poly San Luis Obispo. Nick is very active in promoting manufacturing careers for tomorrow's generation.

Shauna Harrington, Senior Director Outreach and Executive Talent for VSP Global:

VSP was founded in 1955 in Oakland by a group of optometrists. The mission was to provide affordable, accessible, high-quality eye care and improve members' quality of life. In 1968, the headquarters moved from Oakland to Sacramento. VSP partnered with Google Glass in 2014 and is a worldwide provider for glasses for more than 57 million members. The company manufactures prescriptive eyewear and employs all types of engineers and designers. Shauna has been working at VSP for more than 25 years in Workforce Development and is enthusiastic about creating more advanced manufacturing jobs and making sure our labor force is well prepared for these careers. Shauna Harrington stated the VSP Lab in Folsom employed 450 people and plans to hire an additional 150 employees.

Rich Palilonis, General Manager of TWT Products for Teledyne Microwave Solutions:

Teledyne Microwave has over 50 years of experience as a worldwide leader in design, development and manufacturing of microwave components and integrated assemblies. The organization delivers high quality products for communication, aerospace, defense, aviation and instrumentation markets. Teledyne has created new products ranging from remote body scanners to radar and threat detection systems to ultra-compact satellite communication amplifiers. Teledyne Microwave employs 280 people, with six of them being engineers (focus on physicist). Rich joined Teledyne in 2010 as Program Line Manager of Aegis but quickly assumed management responsibilities for Ka-band and Traveling Wave Tube Amplifier product lines. Rich has a BS in Electric Engineering from Spring Garden College in Philadelphia.

Rob Sanger, Manager of Training Services for California Manufacturers & Technology Association:

Since 1918, the California Manufacturers & Technology Association has been working to improve and enhance a strong business climate for California's thousands of manufacturing, processing and technology companies. CMTA represents 400 businesses in manufacturing across all industries. Rob Sanger has been the Manager of Training Services for the last 13 years. Rob manages the operation of the internal learning management system database that compiled and filtered training and demographic data from participating companies and then uploaded required fields to the state and CA online database. He also has developed new business with 40 private companies such as Edward Life Sciences, IB, E. & J. and many more. Rob has

also directed a $6 million federal Department of Labor H-1B technical skills training grant that assisted over 1,500 trainees with needed skills to advance their careers.

Don Whitaker, Founder and CEO of Ceronix:

Ceronix monitors and circuit boards are used worldwide in gaming, lotteries, automated score keeping for bowling, amusement industry and anywhere else that needs high resolutions video monitors. Don Whitaker began developing Ceronix over 30 years ago. Don and his family grew the company from his small Northern California home to operations of 63,000 square feet, employees and customers worldwide. Ceronix assisted Steve Jobs in creating the touch screen for the smartphones and tablets. Ceronix is now the leading US developer and manufacturer of custom color monitors and circuit boards, and includes parts for products such as the iphone.