

COLLEGE OF MARIN

Machine & Metals Technology/Welding

Monday, November 13, 2023

4 – 5:15 p.m.

MINUTES

Attended:

Padraig McGee, College of Marin (COM), Welding Instructor

Grant Kerr, COM, Machine and Metals Technology Instructor

Ron Palmer COM Auto Technology Instructor, Chair of Career Education Dept

Heather Rahman, COM, Program Coordinator, Career Education

Kathleen Antokhin, COM, Program Coordinator, Workforce Projects

John Callas, Teacher, Terra Linda HS Auto Dept

Mark Martin – BACCC (Bay Area Community College Consortium), Regional Director,
Manufacturing <https://bayareamanufacturingcareers.com/programs-by-college.html>

Matt Stanton, Age West Industries, Metal Fabricator, architectural metal shop in San Rafael;
former COM welding student

Dan Sunia, Apprenticeship Coordinator for North Bay Area (CTMAA) CA Tooling and
Machining Apprentice Association

Joe Osborn, OMW, Aerospace Manufacturing

Che Rocchild, Boilermakers Local #549

Mike Maendl, Protofab, Inc.

Tanya Paredes, COM, Administrative Assistant for Career Education

Action items are highlighted below. Please refer to the presentation slides attached at the end of this document.

Welcome and Introductions, Career Education/Program Overview, and Labor Market Information	Heather Rahman gave a brief overview of Career Education, Machine Metals and Welding programs. Feedback on Labor Market Information: - Regional Labor Market Info – the median earnings data is recent, but the data tends to lag 2 years based on tax filings. The committee stated that the wages listed are lower than current rates. Also, benefits are usually included in larger shops. - Wages can range at \$29 for machine tool handlers, lower end jobs + benefits, \$39 for programmers - AT OMW, they are starting to diversify – have more women machine operators and quality control. Managers mostly white male. Overall, 65% non-white: Hispanic, north African Muslim more recently in past 5/6 years.
Open Share-outs and Discussion	- Most COM welding students have little/no welding experience when they begin their first classes. - Question for the group - where do you hire candidates from? - o Joe - OWM will hire COM graduates from machine metals after they have transferred and earned a UC bachelor/master degree. Also, not all jobs are machine metals/welding related – quality inspectors, highly skills assembly, documentation. - For machine metals, career-minded students are more of the focus, but there are also some students who like to have access to machine shop for personal projects.

	- Quality Control is a growing trend along with jobs that require measuring and assembly. - John – would like more info from COM to share with students. Terra Linda HS is organizing Career Week next semester, and it would be great to have COM attend. - Skills mentioned by the committee included CMM (Coordinate Measure Machine), CAD (Computer Aided Design) Advanced Manufacturing Inspection, Quality Assurance, precision measuring - Grant is interested in creating a video and presentation to demonstrate about the COM MACH program - Terra Linda HS has the new CTE center. - Dan - Petaluma High has an articulation agreement (students get college credit for their HS classes) with SRJC (Santa Rosa Junior College), but could one also be created with COM.
Machine Technology Program Updates and Discussion	- Currently we are modernizing the curriculum. - MACH 100 - new entry level course with intro to the career, will have guest speakers- machinists, programmers, shop owners, engineers. - Fab Lab (Fabrication Lab) – landing pad for new students. We may offer a summer program or 1 unit class for HS students, especially those with STEAM program - Would be good to have Spanish-speaking part time instructor to help promote the program. - New equipment – tool room mill - Include CAD (Computer Aided Design) Advanced Manufacturing

	Inspection to spark interest in higher-level technology - 24 units is a certificate of achievement, 60 units needed for AS. - Question – would a fast-track CAD course be helpful for hiring or starting an apprenticeship? Feedback that fast-paced course may be helpful - San Rafael HS has new STEAM lab and could potentially collaborate
Welding Program Updates and Discussion	- Welding has separated from Machine Welding to create our own department. - Working on Certificate of Achievement – 20 units and will be recognized by Chancellor’s Office. Currently this is in our approval process; it takes about a year for the process. - The shop has new TIG welders, flux core has taken the place of stick welding. - Oxy acetylene welding – not that relevant to current welding, but helpful because portable outside, brazing. Good place to start to get into TIG welding, students can see how metal reacts. - Most utilized welding for Boilermaker’s Union is stick welding. Tube welding preferred, but fundamentals still need to be taught. - CMM – coordinate measuring Machine (programming) - Most of female welding students are art or auto dept students - ACTION: Grant will contact John to arrange a metal shop tour. - ACTION: Grant would like to meet with Joe to discuss how modernization of the program is going.

	- ACTION: Heather will check-in with Marin County Office of Education to revisit options for an articulation agreement. - ACTION: Padraig invites John to bring students to visit welding program. - ACTION: Padraig to connect with Che for tour options. - ACTION: Heather will share program materials for high school students.
Summary/Wrap-up	The committee intends to convene next year. Please contact Heather for any questions or to schedule additional meetings.



MACH/WELD Advisory Committee Meeting

Monday, November 13, 2023

AGENDA

Welcome &
Introductions

Updates and
Overview

Labor Market
Information

Industry Share
Outs

Machine &
Metals Updates
and Discussion

Welding
Updates and
Discussion

K-14
Connections
and Outreach

Summary
wrap-up



Hello!

Please share your name, role, organization.

College Updates, Trends, and Outcomes

Heather Rahman, Program Coordinator, Career Education at College of Marin

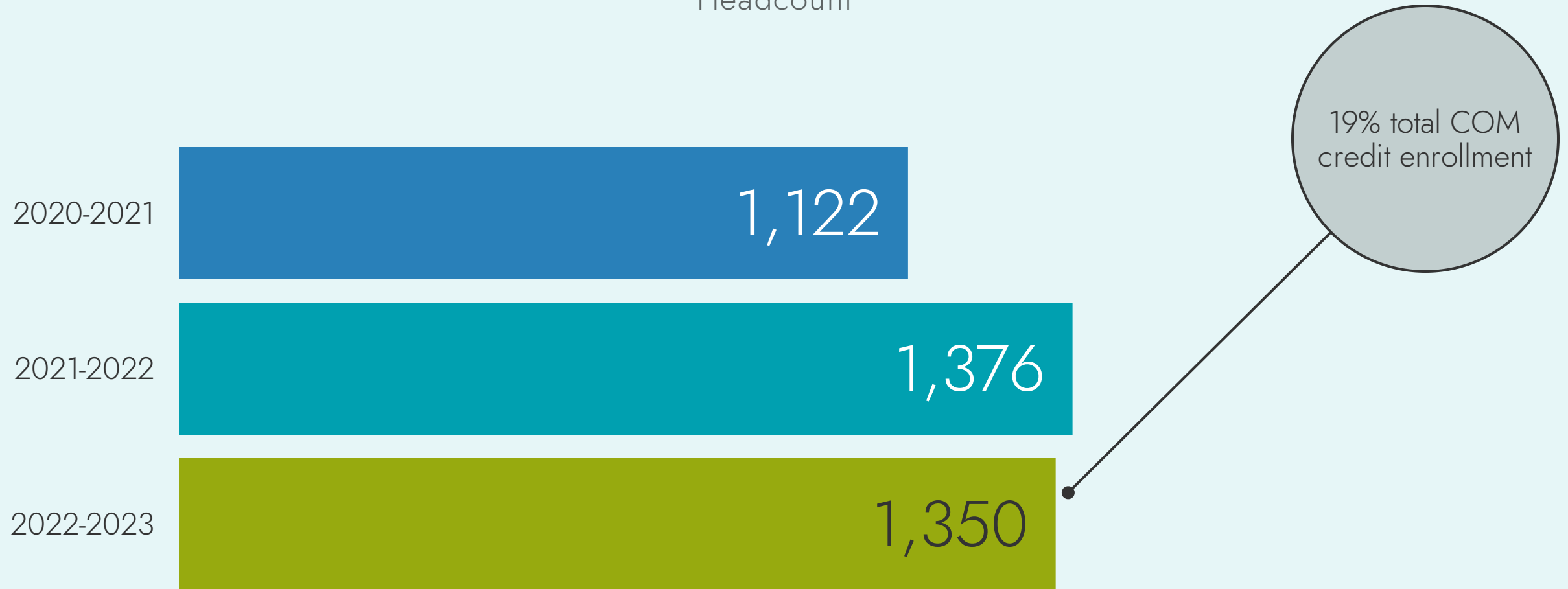
Career Education Programs



- Administration of Justice
- **Auto & Industrial**
Auto Collision Repair; Auto Technology;
Electronics; **Machine & Metals**; Theater
Technology - Stage Carpentry, **Welding**
- Business
Applied Accounting; Business Administration;
Entrepreneurship; Hospitality Management;
Real Estate
- Computers & Multimedia
Computer Information Systems; Graphic
Design; 3D, Video, Game Dev; Web Design
and Development; MS Office Specialist
Certification
- Court Reporting
- Early Childhood Education
- Health Sciences
Registered Dental Assisting; Emergency
Medical Services; Medical Assisting;
Registered Nursing; FIRE Foundry Program
- Education 2 Career (E2C)
 - Construction/OSHA 10
 - Certified Nurse Assistant/Home Health
Aide
- Summer Career Academies
- Apprenticeship Programs
 - ECEPTS-Early Childhood
 - Golden Gate Transit Bus Coach Operator

Career Education Unduplicated Students

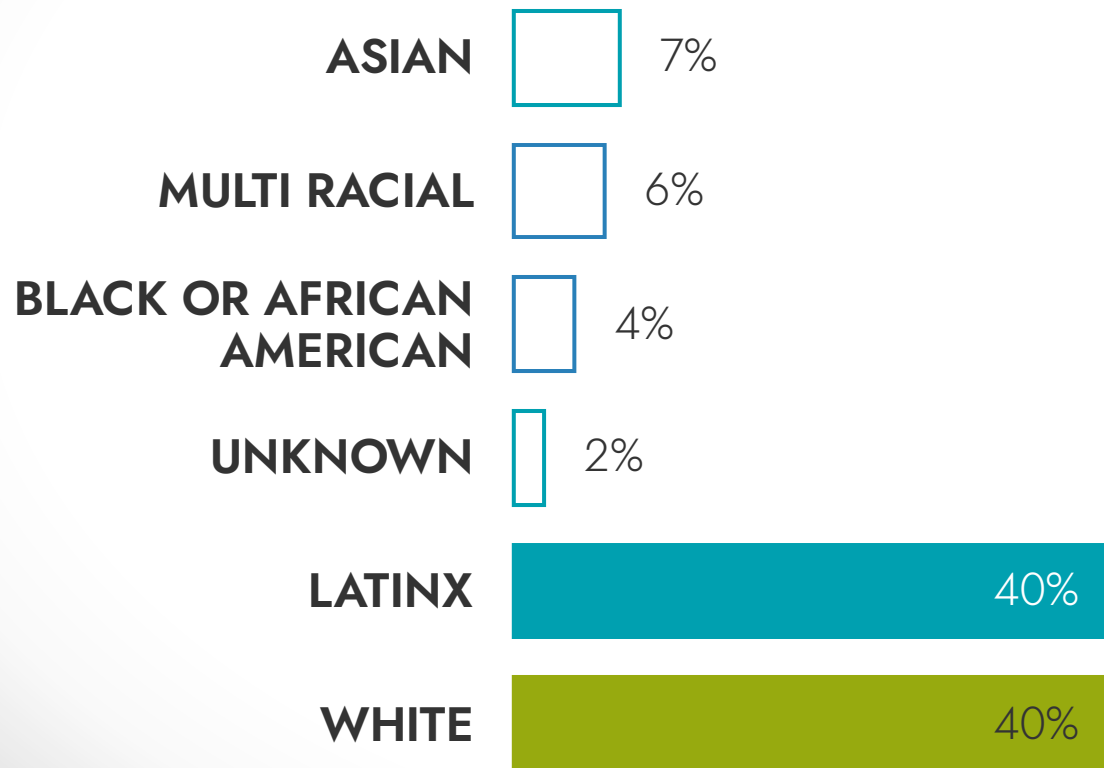
All CTE including Nursing, WEXP, ECE, Business N=21% COM Enrollment and 30% COM Unique Student Headcount



NATIVE HAWAIIAN, PACIFIC ISLANDER, AMERICAN INDIAN, ALASKA NATIVE MASKED N<1%

Career Education Student Demographics *

***2022-2023 N=2,508 for all Top CE Codes including, ECE, Business, Nursing**



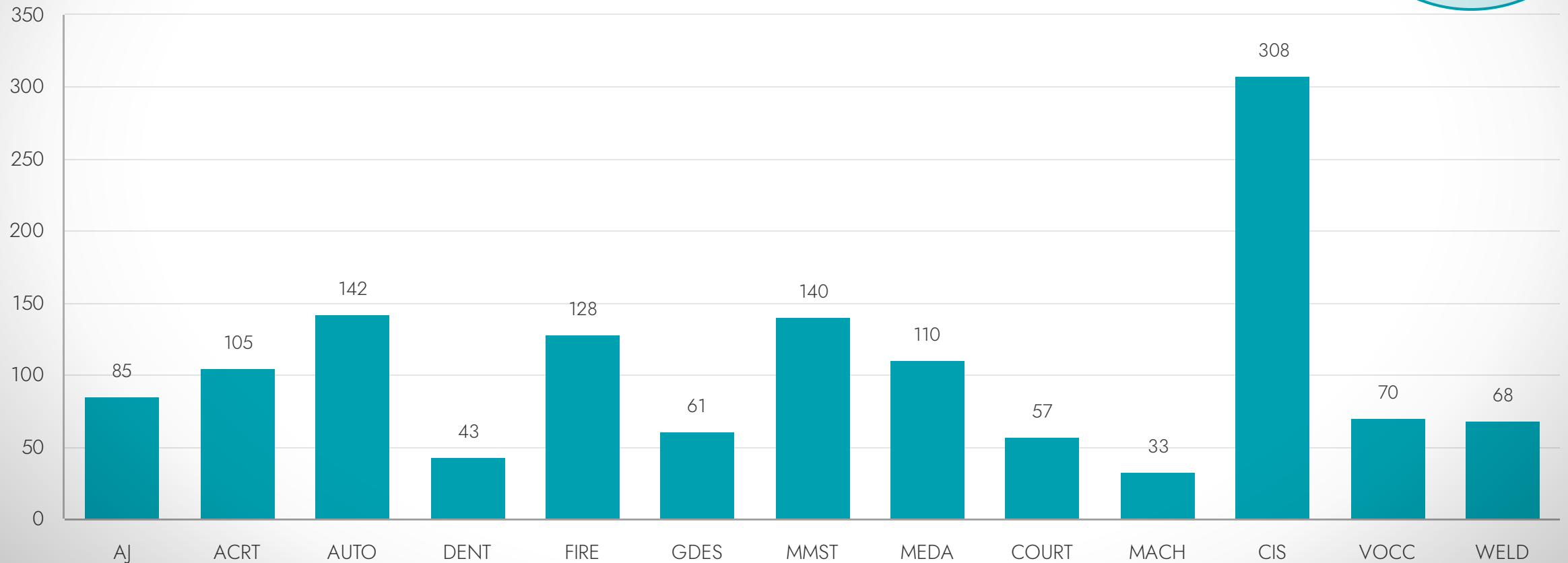
CAREER EDUCATION ALIGNED WITH ALL OTHER COM STUDENT RACE AND ETHNICITY DEMOGRAPHICS

Academic year 2022-2023

Enrollments by Program

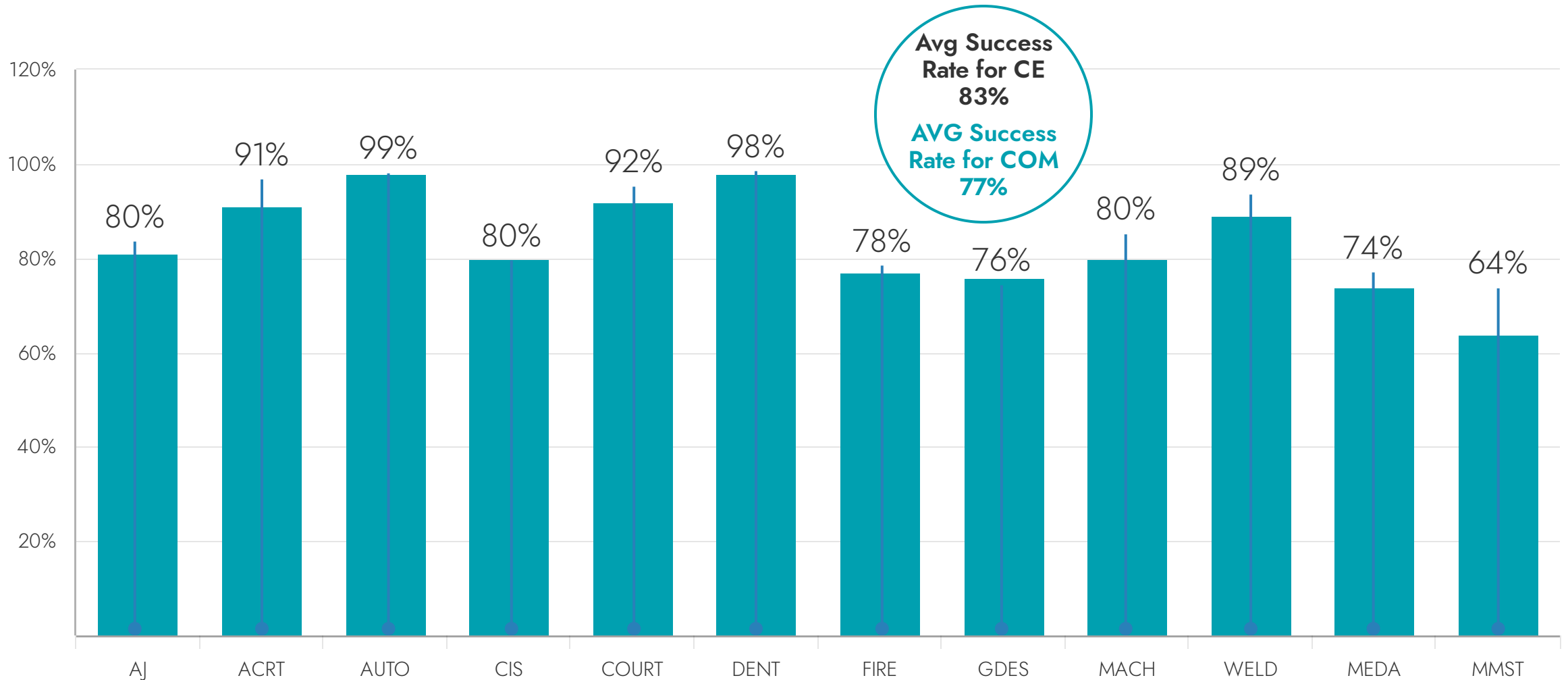
N=1,282 Credit Students

6,695 Total
COM Credit
Students 2022-
2023



Course Completion

Success percentage average across all credit programs, all modalities for 2022-2023



Career Education Outcomes

Source: Awards Transfers-Career Ed 2020-2022



33% of Total College Awards and Aproximately 36% of all degrees at COM

27

Degrees 2020 -2021

67

Certificates 2021-2022

143

All: Noncredit
certificates, skills,
Chancellor's approved,
and/or degree on a
TOP code assigned to
a vocational sector

Total COM Awards 2020-2022 N= 430

Career Technical Education Outcomes Survey (CTEOS)

EMPLOYMENT DATA

18 months after college completion

85% Goal

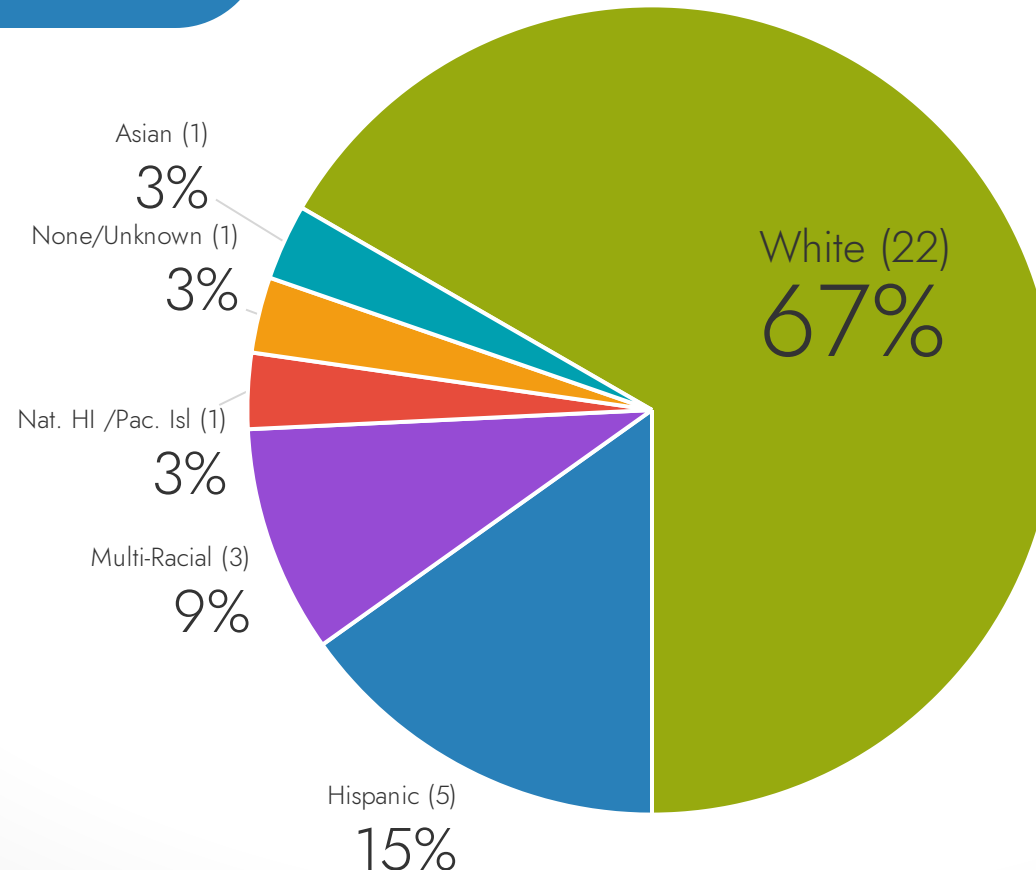


206 Student respondents

Student Demographics

MACH Program 2022 - 2023

94% Male (31)
6% Female (2)



COLLEGE OF MARIN CREDIT STUDENT CHARACTERISTICS

Gender: Male 41% Female 57%;

Median Age: 22

Race/Ethnicity:

Asian: 440 (6%)

Black/African American: 215 (3%)

Hispanic: 2245 (34%)

Multi-racial: 441 (7%)

Native American: 9 (0.1%)

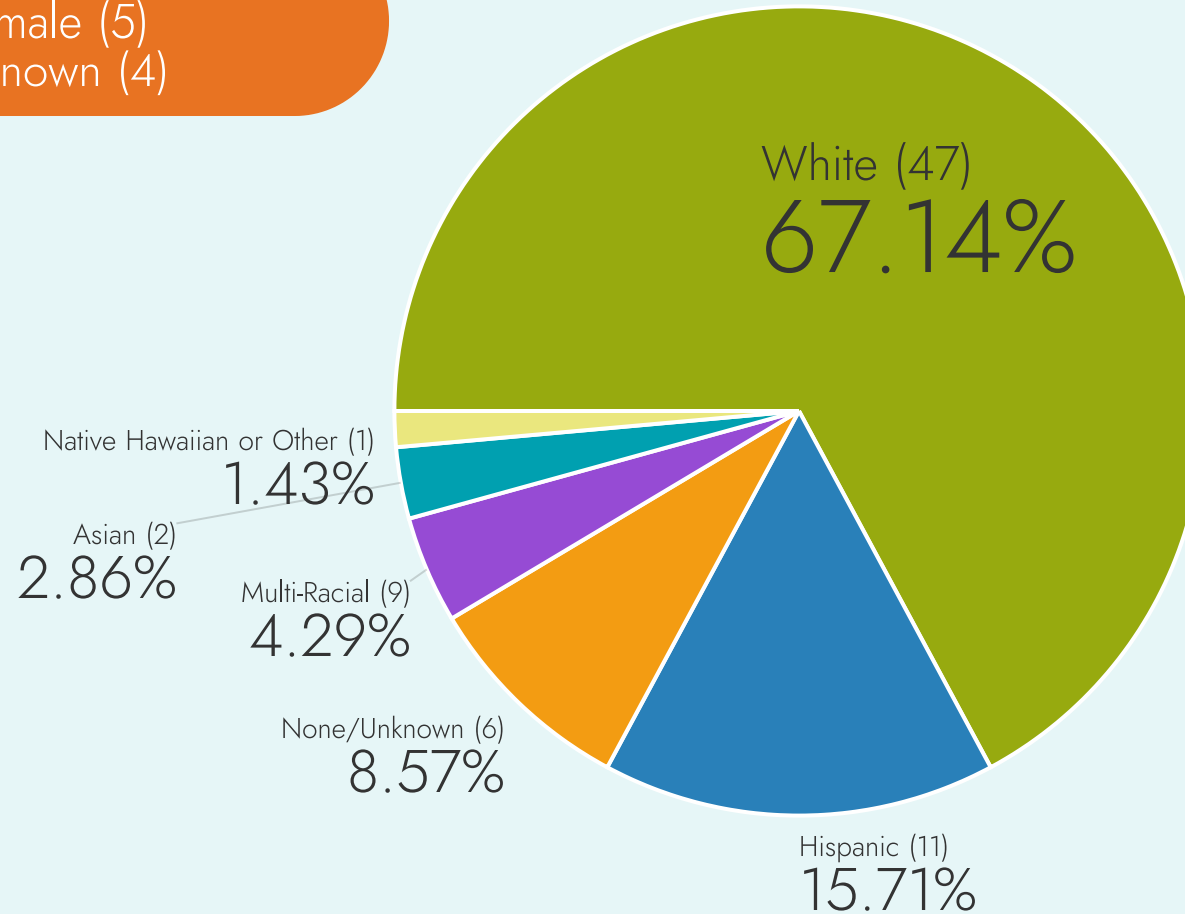
Native Hawaiian/Pacific Islander: 15 (0.2%)

White: 3135 (47%)

Student Demographics

WELD Program 2022 - 2023

87% Male (59)
7% Female (5)
6% Unknown (4)



COLLEGE OF MARIN CREDIT STUDENT CHARACTERISTICS

Gender: Male 39% Female 59%;

Median Age: 24

Race/Ethnicity:

Asian: 538 (8%)

Black/African American: 219 (3%)

Hispanic: 2,170 (31%)

Multi-racial: 445 (6%)

Native American: 15 (0.2%)

Native Hawaiian/Pacific Islander: 13 (0.2%)

White: 3,377 (49%)

Regional Labor Market Information

Sources: Centers of Excellence Demand Tables

Regional Counties:
Marin, Napa,
Sonoma, Solano,
San Francisco and
San Mateo, Contra
Costa, Alameda

"Welders starting
wage are typically
higher with benefits."

Occupation

Median Earnings

Annual Job Openings projected through 2026

CNC Machine Tool Operators

\$51,376/year (24.70/hour)

1,498

CNC Machine Tool Programmers

\$81,723/year (39.29/hour)

272

Machinists

\$56,347/year (27.09/hour)

2,351

Welders, Cutters, Solderers and
Brazers

\$57,450/year (27.62/hour)

2,865

"Top-end
employees will
make
significantly
higher wages,
even double."

"Nationwide, 2.1
million unfilled
manufacturing
jobs by year
2030"

<http://coeccc.net/>

Thoughts and
Reactions?



Discussion

Your Hiring and Staffing Needs

Grant Kerr, MACH Instructor

Padraig McGee, WELD Instructor

PRIORITIES AND CURRENT LANDSCAPE

Advisory Member Share Outs & Discussion



Staffing and Recruiting

- Where do you find your candidates?
- What wages can be expected for entry level positions?



Training & Professional Development

- What are the skills required? For which levels?
- Any emerging technology skills that should be considered?



Community Partnership & Impacts

- How should we best prepare our students to be qualified and competitive?



Needs and Priorities

- What are your current priorities and needs for hiring?



Other Key Items?

- What should we be aware of to support our future students?
- Potential technology, training, or emerging sectors?

Machine & Metals Technology (MACH)

Grant Kerr, MACH Instructor

MACH Discussion Points

- **Curriculum**

New Course MACH 100 - Career, Precision Measurement and Math for Industry

CAD/CAM and CNC modernization

- **Fab Lab**

A landing pad for new students

Project-based learning

- **Expansion Ideas**

ESL Support

Apprenticeship program

Strategies to increase enrollment, attract career minded students and diversify student population

- **Equipment**



Machine and Metals Technology Program

A.S. Degree and Certificate Options Available

- MACH100 - Careers, Precision Measurement and Math for Industry (4 units)
- MACH101 - Introduction to Machine Technology (4 units)
- MACH102 - Intermediate Machine Technology (4 units)
- MACH103 - Machine Tool Processes (2 units)
- MACH104 - CAD 3D Modeling and Drafting (3 units)
- MACH105 - CAD-CAM Production (3 units)
- MACH106 - Introduction to CNC Machining (2 units)
- MACH107 - CNC Programming for Mills and Lathes (2 units)

Total of **24 units**

MACH Discussion Points

- **Curriculum**

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CAD/CAM and CNC modernization

- **Fab Lab**

A landing pad for new students

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- **Expansion Ideas**

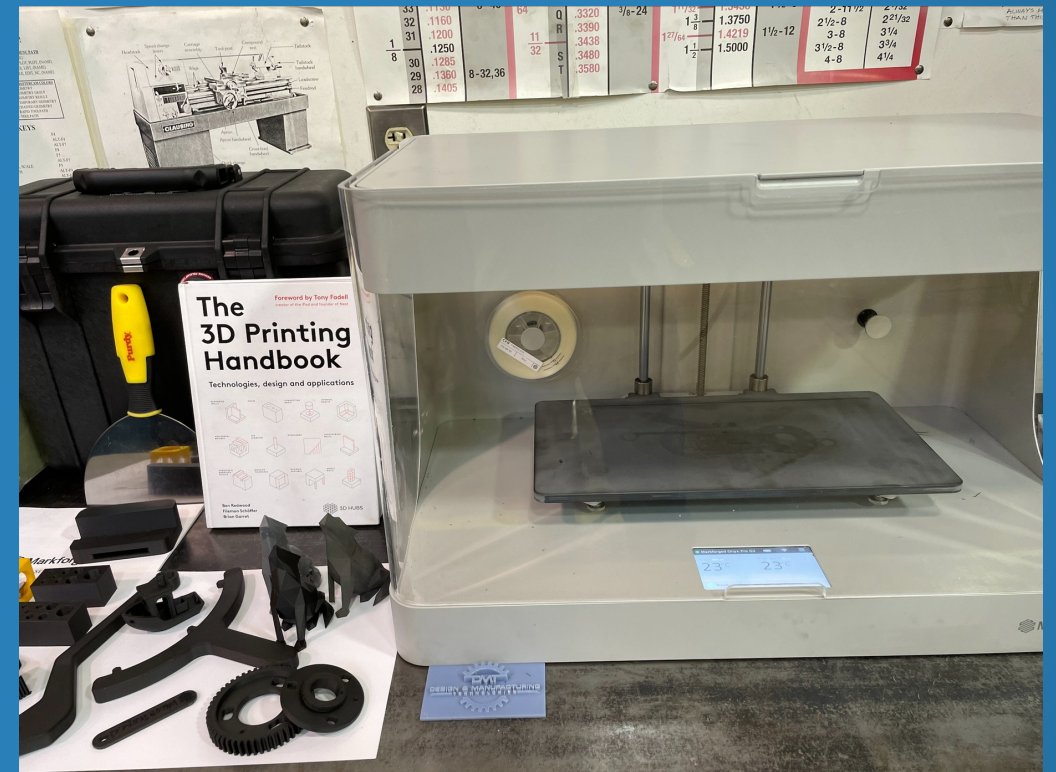
ESL Support

Apprenticeship program

Strategies to increase enrollment, attract career minded students and diversify student population

- **Equipment**





Newest Equipment

Welding (WELD)

Padraig McGee, WELD Instructor

WELD Discussion Points

- **Curriculum**

History

Updates and Proposed Certificate of Achievement

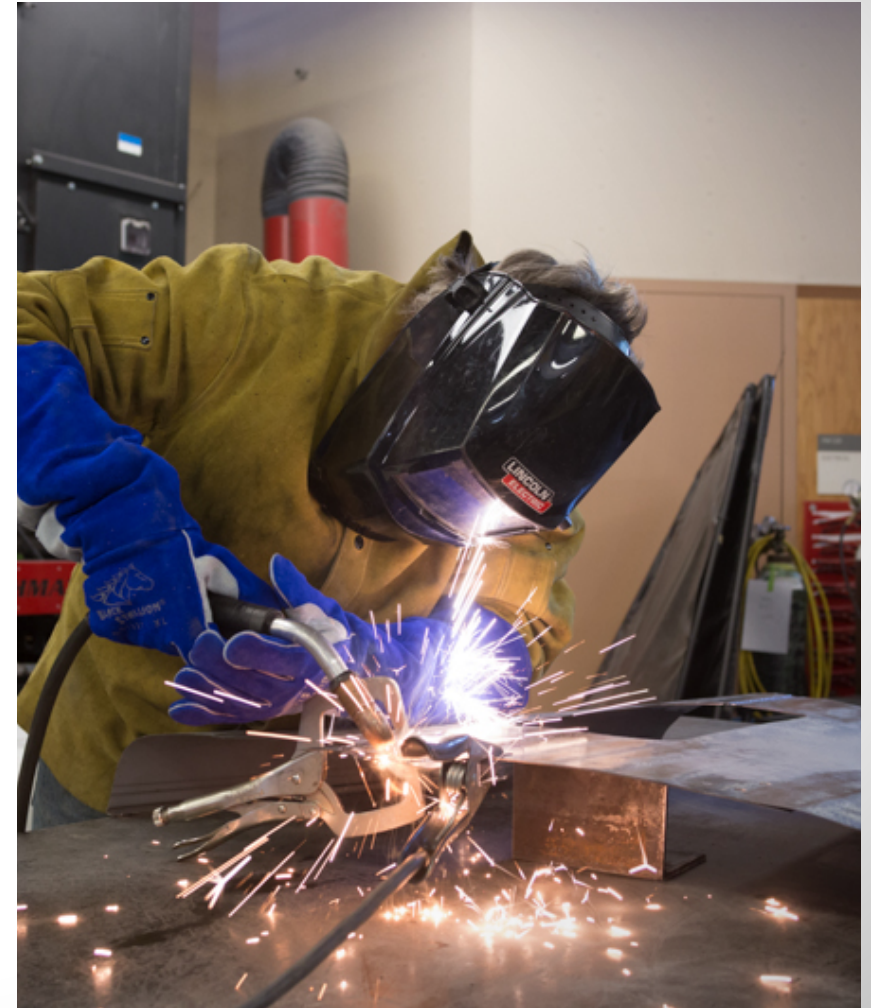
- **Enrollments - Outreach suggestions?**

How to increase enrollments

Where to recruit career-oriented students

Diversify

- **Equipment**



History of Welding Discipline

- College of Marin has been offering Welding classes for over 40 years.
- The Welding program was originally located on the Kentfield campus.
- It moved to IVC & became part of the Career Ed program in the 80's.
- Welding was originally its own discipline and merged with Machine Metals in early 2000.
- Recently Welding has been moved back to its own discipline. There are now 2 *separate* disciplines; Machine Metals and Welding.
- The Advisory Committee and the instructors of the Welding discipline have recommended creating a Certificate of Achievement.
- The Welding faculty & Department Chair have created a new Welding Certificate of Achievement.

Certificate of Achievement, Welding Technician

Catalog Description

Welding Technology Program provides an extensive background in cutting and welding processes, such as Oxyacetylene Cutting and Welding, Plasma Cutting, Carbon Arc Cutting, Shielded Metal Arc Welding, Flux Core, MIG and TIG. Welding include structural metal fabricator, pipe and steamfitter, welding inspector, and welding engineer. Welders who can qualify in these specialty areas such as TIG, Pipe Welding, and the welding of stainless steel and aluminum are always in demand. Many artists also learn to specialize in metalwork by taking welding courses.

Certificate of Achievement, Welding Technician

Weld 100 - Career Math and Precision Measurement - 4 Units

Weld 101 - Introduction to Welding - 4 Units

Weld 102 - Intermediate MIG Welding - 2 Units

Weld 103 - Advanced MIG Welding - 2 Units

Weld 104 - Intermediate TIG Welding - 2 Units

Weld 105 - Advanced TIG welding - 2 Units

Weld 106 - SMAW Welding - 2 Units

Weld 107 - OFW and Welding Fabrication - 2 Units

Total Units: **20 Units**





Miller Dual Shield Welder



WELD Discussion Points

- **Curriculum**

History

Updates and Proposed Certificate of Achievement

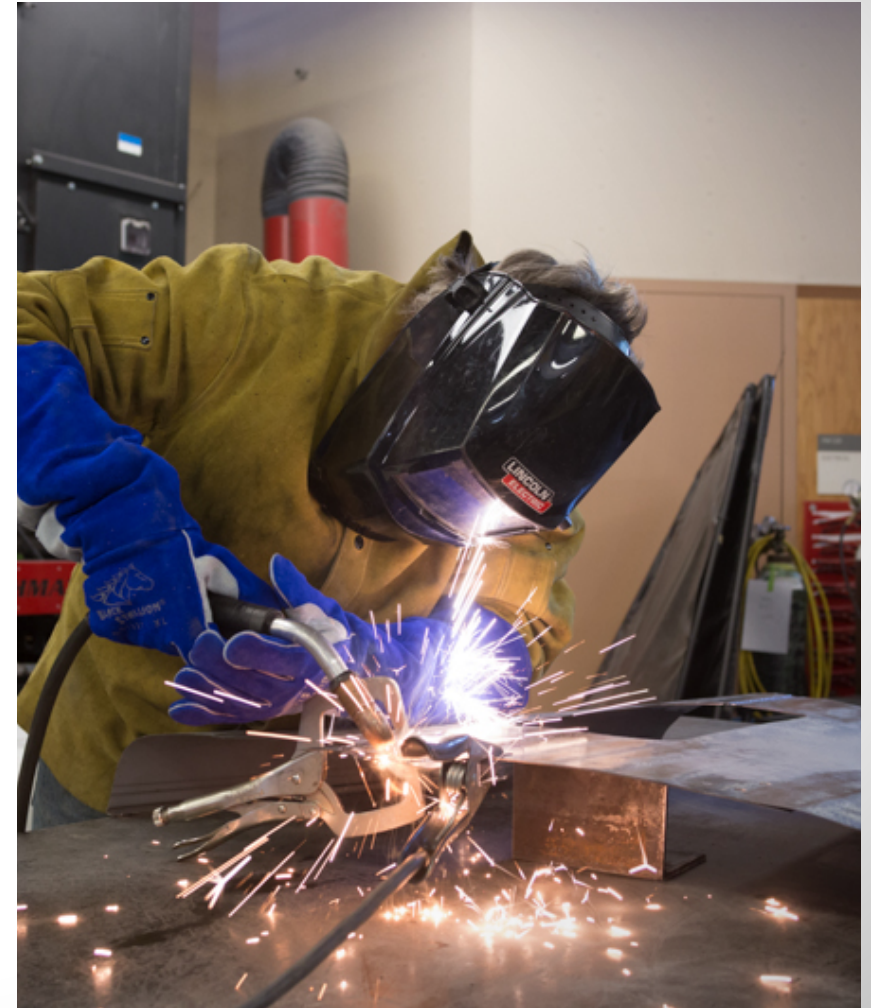
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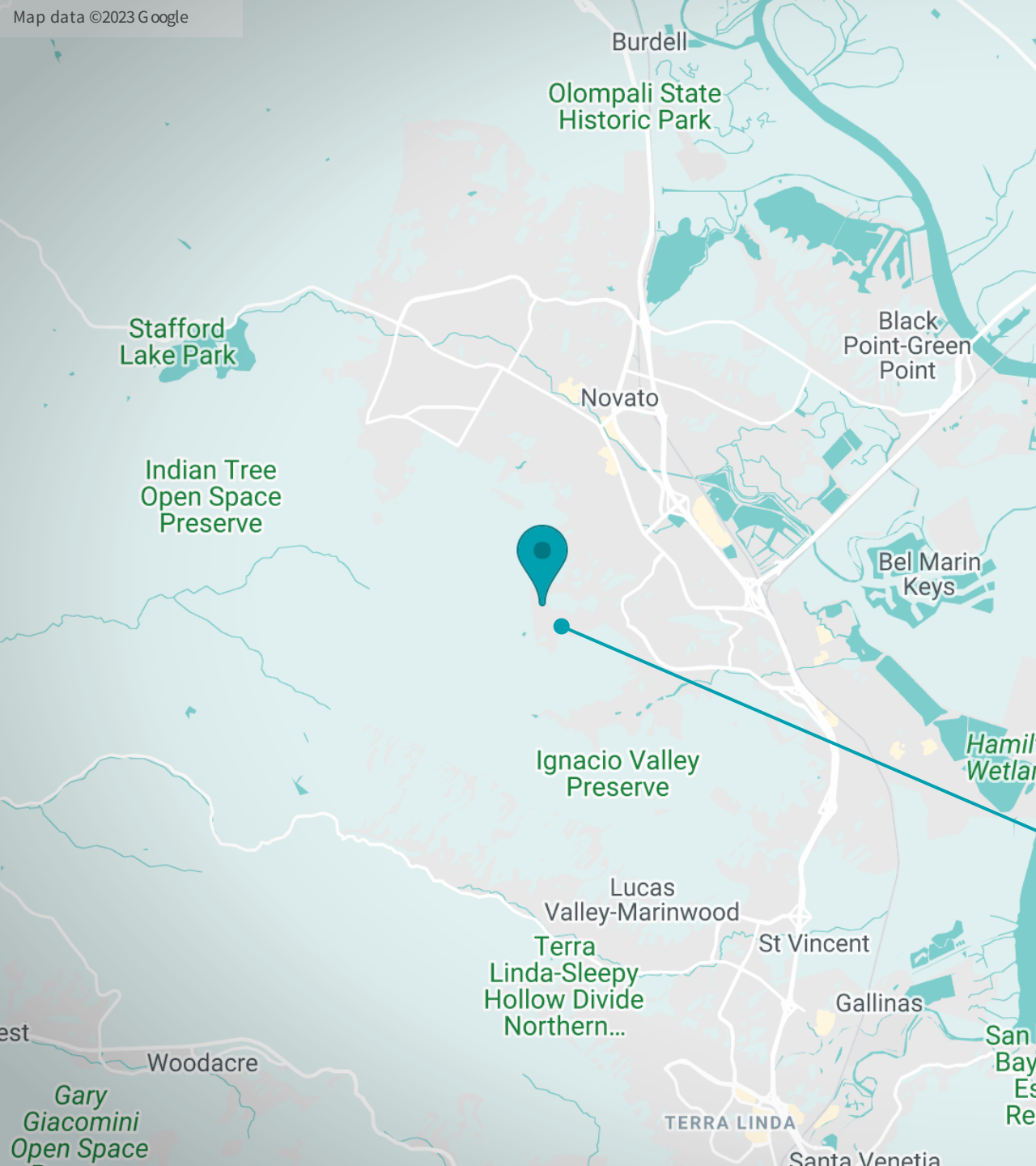
Diversify

- **Equipment**



Summary/Wrap-up
Thoughts? **Questions?**
NEXT STEPS





Thank You!

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College of Marin, Indian Valley Campus