

## CADD Employer Advisory Board Meeting Minutes

Thursday, April 20, 2023

- **Welcome from Career Education Staff**
  - Continental breakfast will be available upon arrival
  
- **Introductions and program overview**
  - Raymond Ford, Group Manager – CAD Engineering Services, TMP NPI Mechanical Design, Solar Turbines Incorporated - his department has 500 seats 400 CADD seats
  - Gary Sheriff, Paton Group - education space. Supplies lathes, 3d printers, software
  - Laura Armstrong, Archytas Automation - working with community colleges (on CADD projects related to their company's industrial robotic arm)
  - Karen Caswelch, COO, Archytas Automation
  - Sergio Sandoval, National Aeronautics and Space Administration (NASA) - Entry/landing for aircraft. Finishing PhD, @ UCSD focused on 'optimization.'
  - John McCoy, Adjunct CADD Faculty
  - Ryan Paszkewicz, Electrical Consultants, Inc., build substations, used to go to "Maker Space", XPro
  - Tom Schultz, QCMI, Inc., sits on GUHSD advisory board as well (good high school connection)
  - John Adams, JAG Architecture
  - Charlene Alsbaugh, Cuyamaca College Career Education Team
  - Carmen Brown, Go Professional Cases
  - Ignacio Castaneda Garcia, Cuyamaca College - Automotive Program
  - Jerry Fregoe, Solar Turbines Inc.
  - Taylor Lemker, Cuyamaca College Career Education Team
  - Monica Rosas, Cuyamaca College Career Education Team
  - Cyrus Saghafi, Chair of Department of CADD Tech and Advanced Manufacturing
  - David Sellers, VDCI
  - Dave Sulli, Society of Manufacturing Engineers (SME) chapter 44
  - Juan Antonio Vasquez, U.S. Space Force Space Systems Command
  
- **Certificates and diplomas offered by CADD Technology Department**
  - Two main pathways: Manufacturing and Building Design.
  - "Professors Teaching Professors" bi-annual seminars in Berkeley.
  - **Current software:** SolidWorks, Fusion360, Revit, Creo CAD Software
  - **Future state:** On Shape (collaborative and cloud-based)
  - Geometric Dimension and Tolerancing (GDT) course -> well received by group.
  
- **GD&T is more important than drafting (Ray Ford)**
  - Asked if a GD&T certificate could be offered (professional certificate ASME Y 14.5)
  - Historically we have had to go external to private organizations for certificates
  - Industry would love a course focused on preparation for professional certificate / work towards partnership, becoming accredited by The American Society of Mechanical Engineers (ASME).

**Commented [TL1]:** where are these software mentioned in our course descriptions? Which courses?

**Commented [TL2]:** Action item for us! Investigate.

Program Coordinator – Dr. Cyrus Saghafi

- Need to be able to do “True Position.” 17-week course offered by QCFI

▪ **General Skill Gaps and Opportunities:**

- **For current workers:** 18-week evening course (asynchronous) meets industry needs. Upskilling.
- **For entry-level folks:** Struggling to find qualified entry-level talent.
  - ✓ Seems that the industry entry point has shifted from 2-year College to 4-year basis (for mechanical engineers.)
  - ✓ Difference between manufacturing engineers (do not need the 4-year degree) and other disciplines.
  - ✓ Promote opportunities that allow students to work with their hands/mechanical, building parts, lots of on the job training (OJT) available. *It is not dirty anymore!*
  - ✓ “We don’t care what degree you have; we want folks who want to learn on the job. That’s where my workforce is going to come from.” (Karen Caswelch)
  - ✓ ‘Material science’ understanding the property of material. Cyrus offered up our CADD class (?). We also have a Materials Lab course within the engineering program.
  - ✓ They need to be able to consider the environment that their designs will be placed in (Juan Antonio Vazquez)
  - ✓ ‘Statics’ or ‘Statics with Dynamics’ – skills that allow students to get their feet wet in the content they’ll see in a 4-year program.

**Commented [TL3]:** Make sure students have a baseline understanding. Cross-enroll with engineering materials lab?  
@Charlene Alsbaugh

▪ **Dr. Saghafi explained to board the lab machines and functions.**

- Cross-pollination between CADD and engineering curriculum. This knowledge belongs in both camps.
- **Critical component:** Isometric sketches, students being able to visualize new and different concepts. Select the best option and turn that into a 3D model.
- **Continuing Education Opportunities – Embedding Certs into Courses**
  - ✓ CAPM, PM Certifications – Project Management
  - ✓ Quality/Six Sigma Certifications
- **What is the Machinist secret sauce?**
  - ✓ GD&T Overview certification
  - ✓ Understanding how to learn CADD/software. Being able to adopt new software and ability to learn technically.
  - ✓ “ABCs of CADD” Sketching, 3D parts assembly, surfacing.
  - ✓ Dimensional Tolerances and Material Sciences
  - ✓ 2- or 4-year degree (Inspection/Quality Department talent)

**Commented [TL4]:** Students don’t realize the importance of GD&T yet. Need to build value around this knowledge.

**Commented [TL5R4]:** relevant across the entire field

**Commented [TL6]:** Might be one more piece here.

▪ ~~Tour of newly renovated campus lab facilities~~

**Recent changes in instruction**

▪ **CADD 128 Course Feedback**

- Traditionally low enrollment and courses have not run.
- Move GDT course (128) to the core curriculum within manufacturing track.
- Need to change verbiage around course description and outcomes.

Program Coordinator – Dr. Cyrus Saghafi

- Tying a 'real world skill' to particular software – hands-on examples of 'good dimensions' versus 'bad dimensions' in the software they're being trained in. Real-world application of 'Industry Standards.'
- Inserting a GD&T section into CADD 115 or CADD 120 – serves as a teaser for future *elective* course options.
- Software used in Manufacturing and Architectural Programs
- Advanced Manufacturing Program – Short Certificates
- Industry partnership
- Open discussion forum
  - ✓ SolidWorks v. On Shape Software
    - On Shape founded by SolidWorks folks, designed to be cloud-based and collaborative. Bought by PTC.
    - Karen believes it's worth exploring actual differences and adding to courses. Industry may not be comfortable with On Shape just yet, but it looks likely for future landscape.
    - Prepping On-Shape curriculum in the background, prepare for future industry needs. However, prepares the students for today's needs (SolidWorks.)
  - ✓ Industry Expectations: Knowledge, Skills, and Experience
  - ✓ Recommendations and Action Items/Committee Approval
- **Adjournment**
  - ✓ Next steps: Tom Schultz from QCMI will visit Lab on Tuesday 4/25 to tour and provide feedback on the equipment and set-up. Dr. Cyrus will coordinate this meeting.

**Commented [TL7]:** Didn't really touch on our existing certs, but GD&T is the astounding winner

**Commented [TL8]:** Notes on these topics are above. A bulk of today's conversation