

Energy, Construction, & Utilities Meeting Minutes SW Carpenters Training Center September 21, 2018

MINUTES

Industry Advisors (Panelists)

1. **Jamison Soule**, Holliday Rock, *Manager*
2. **Brad Austin**, Griffith Company, *Chief Estimator – Structure Division*
3. **Gretchen Gutierrez**, Desert Valley Builders Association, *CEO*
4. **Max Murphy**, Southwest Regional Council of Carpenters, *Administrative Assistant*
5. **Richard Lopez**, Sempra Utilities, *CSF Training and Development Manager*
6. **Todd Straiger**, Neff Construction, *VP Field Operations*
7. **Chris Compton**, HVAC EDU, *Founder/CEO*
8. **Julie Goodson**, Delta Power Inc., *Business Development Manager*

9. **Jennifer Cusack**, Southern California Edison, *Government Affairs Manager*

Industry Panel Questions

Question 1

What types of training, education, or community college credentials are desirable for entry-level positions in your field?

Question 2

Please expand on industry-recognized certifications; what third-party credentials are valued?

Question 3

What does your hiring process look like?

Question 4

What interpersonal skills are most important in your industry?

Question 5

What foundational/technical skills are necessary for entry level positions within your industry?

Question 6

What skills/knowledge is being required of new employees to address the latest trends in technology, equipment, regulations, laws, etc.?

Question 7

What skills have become obsolete in your industry due to changes in technology, equipment, regulations, laws, etc.?

Question 8

What new technology and/or equipment should we be incorporating into our courses?

Question 9

Where do you see the field of *Energy, Construction, and Utilities (ECU)* going from here? Important Trends?

Question 10

Based on current trends, what **entry-level** jobs could be attained at your company by students graduating from high school or community college?

Question 11

Does your company offer Internships? If so, what are the technical/non-technical skills needed? Also, what type of work do interns participate in?

Question 12

Any important last words?

Q & A

Breakout Group Questions

Educators**Question 1**

What changes are currently taking place in your programs on your campus?

Question 2

What technology are you currently using?

Question 3

What new courses and technology do you see in your departments in the next five years?

Question 4

What advice would you give to ROP and high school teachers that would help them better prepare students for transition to community college?

Question 5

What are some of the biggest skills gaps that you have identified within the incoming student population?

Other Questions?

Panel Notes: Industry Partners/Advisors

#	Panel Members	Company	Sub-Sector
1	Jamison Soule	Holliday Rock	Heavy Construction
2	Brad Austin	Griffith Company	General Contractor
3	Gretchen Gutierrez	Desert Valleys Builders Association	Construction
4	Max Murphy	SW Regional Council of Carpenters - Ontario	Construction
5	Richard Lopez	So. Cal Gas Company/ Sempra Utilities	Energy & Power
6	Todd Straiger	Neff Construction	General Contractor
7	Chris Compton	HVACR EDU.net	HVACR Mechanical Installation
8	Jennifer Cusack	Southern California Edison	Energy & Power
9	Julie Goodson	Delta Power, Inc.	Energy & Power

Question 1

What types of training, education, or community college credentials are desirable for entry-level positions in your field?

Panelist

- 1 Diesel Tech Certificate from Community College; ASC Certification
- 2 Basic Computer Skills, Basic Skills, excellent work ethic, MS Office/Excel experience
- 3 Job Ready: Apprenticeship program, fieldwork, skilled laborer, hands-on & basic skills
- 4 Soft Skills: Attitude, coachable, verbal communication, problem-solving, critical thinking measurable results
- 5 HVAC certificate desirable; soft skills as listed above; interactive communicator, high school graduate, 18 or older, clean background, shop classes, work with tools, ability to drive/clean license to drive
- 6 Soft Skills as listed above: Personal drive; math skills; hard worker, takes initiative
- 7 Good work ethic, knows how to use tools, verbal and written communication skills, customer service and computer savvy, excel experience
- 8 High school certificate program or trade school certification; physics, drafting, planning – reading maps, safety, ethics, dangerous job – onsite training
- 9 Technical training for an entry-level position – safety, logical thinking, conscious of surroundings. Must be passionate about the job.

Question 2

Please expand on industry-recognized certifications; what third-party credentials are valued?

Panelist

- 1 ASC Certification, diesel/engine/auto certifications, DOT air brake certification
- 2 BA Degree – will train on the job
- 3 Soft Skills Certificate
- 4 Pre-apprenticeships, “helmets to hardhats” program for Vets, they train on site
- 5 HVAC Certificate
- 6 Carpenters Union apprentices; word of mouth
- 7 EPA 608; word of mouth
- 8 Lineman electrical certification; administrative skills; computer skills; trustworthy; excellent references; also, law, finance, operations, call center, HR additional job opportunities
- 9 Veterans; Basic Electrical interest

Question 3

What interpersonal skills are most important in your industry? What type of training tools?

Panelist

- 4 Communication, no cell phone, basic skills – complete a personality profile test; types of communication tools are face-to-face verbal, being able to read body language, professional communication. Jobsite leadership training is provided.
- 5 Update training material to electronic; 3D imagery; possible use of virtual reality
- 7 Speak their language – millennials – use video, web-based education, virtual reality – can provide student training in the sequence of operations

Question 4

Where do you see Energy, Construction, and Utilities (ECU) going from here? Important new Trends? What is becoming irrelevant/obsolete?

Panelist

- 7 The laws of physics stand, that’s what makes HVACR work, this is not changing – everything is mechanically based; as in many technical trades new technology is the digital revolution
- 6 GPS is huge but you need math; we have fewer men to do more work; old stuff still works. Teach software that goes along with GPS.
- 5 There are end-user changes, customers are more demanding. The smart meter is the most effective technology. Sell gas and keep the consumer comfortable.
- 4 Re-fabrication and panelization, control costs, safety
- 3 Students need to learn political science, building code updates, rules and regulations, and California law. The state of California has 54 government agencies regulating building, safety, and compliance. New regulations emerge before training practices can be implemented.
- 8 Rooftop solar, electrical transportation, 100% renewable energy by 2045, reduce greenhouse gases by 40% by 2030 and 80% by 2050 from 1990 levels

Panel / Audience Q & A

Question: How do you communicate with high school teachers?

Response:

- * Offered to teach soft skills, did not get follow up from teacher
- * SCE offers training for high schools, you can request speakers at SCE.com
- * Instead of just talking to them show them
- * Carpenters union offers training for students
- * Delta Power will visit your classroom
- * The InTech Center in Fontana will bring students into their training center

Question: How do you counsel these “new kinds of students?” Are there ECU jobs for students who have physical limitations?

Response: Many jobs are more suitable for some students, in gas and electric there are jobs such as manager, planning, support roles, accounting, engineering, etc.

Non-physical support roles still require knowledge of the trade. Workers in these jobs need to have the same technical knowledge as those working with utility equipment.

The Gas Co. will bring in an entry-level employee and reimburse a portion of their education.

Question: Why isn't solar thermal catching on? Should we be teaching this?

Response: Currently there is no demand for this technology, even though it is a good option

It is the consumer's choice. More consumer education and promotion are needed for demand to catch on.

Question: Do you have apprenticeship or internship programs?

Response: Summer internships are offered at Desert Valley Builders (DBVA) The Carpenters Training Center has an apprenticeship program EdisonCareers.com, internships offered through Cal Poly Pomona. Not available at the high school level at this time.

Question: A lot of HS students are not aware of ECU careers. How do we make them more aware of ECU careers and how do we direct them to places where they can find jobs?

Response: Schools need to teach students how and where to research online. How to do a job search, write a resume, etc. Students research careers and salaries as an assignment in class.

HVAC industry is not as active in getting the word out about opportunities. Carpenters Union 3rd year apprentices can make over \$100K with benefits. Training can be started as a sophomore in high school.

Breakout Sessions - Group Notes

Regional CTE Advisory Community – Energy, Construction & Utilities (ECU)

Breakout: *Mechanical Systems Installation and Repair*

Community College & High School Faculty

Question 1

What courses and changes are currently taking place in your programs on your campus?

HS Report-out:

1. Hesperia HS- brings in projects for local business for students to complete

CC Report-out:

1. College of the Desert-
 - a. HVAC program has expanded beyond residential and small commercial into industrial as well
 - b. Added stackable certifications
 - c. Collaborating with other departments, such as architecture, engineering
 - d. Starting a Building Energy Systems Professional Program
 - i. Includes math and science courses
 - ii. Part of SWP
 - iii. Piloting with the hopes of implementing statewide
2. El Camino-
 - a. Writing soft skills curriculum as a free, non-credit course that will serve as the entry into a pathway

** Discussion led to talk about how there is lots of collaboration with partner CCs and a reminder that public institutions' curriculum is OER (Open Educational Resources). They must share!

***Hesperia HS also shared the frustration that there are barriers in recruiting and enrolling students due to the (Admin/counselor/parent) mentality of all students should be "college bound" and only take college prep courses.

CRY-ROP concurred that this is still an issue even though a majority of their courses are A-G and/or articulated.

Hesperia also noted that the CTE shop-style classes are still inundated with students that do not have strong academic skills who then struggle with the academic content in CTE classes.

Industry Recommendations:

Industry/Name: NO industry present

Question 2

What technology are you currently using?

HS Report-out:

1. No input

CC Report-out:

1. College of the Desert-
 - a. Uses Canvas LMS
 - b. Online tests that mimic certification tests

- c. Updating labs
 - d. Use “electrical trainers” to demo skills
2. El Camino-
- a. Most instructors still paper-based
 - b. Some starting to implement Canvas LMS

Industry Recommendations:

Industry/Name: NA

Question 3

What new courses and technology do you see in your departments in the next five years?

HS Report-out:

- 1. No input

CC Report-out:

- 1. All- Solar!
- 2. Upcoming tech = propane refrigerant, but no courses/curriculum even planned yet
- 3. Rep from HVAC Edu talked about the NATE exam which is an industry recognized cert for HVACR and how organization, HVAC Excellence works to help institutions on accrediting their schools/programs nationwide in HVAC

Industry Recommendations:

Industry/Name: NA

Question 4

What advice would you give to ROP and high school teachers that would help them better prepare students for transition to community college?

HS Report-out:

- 1. Hesperia HS
 - a. incorporate basic academics into CTE
 - b. incorporate PBL (project-based learning) opportunities into your programs
 - c. connect with local elementary and middle school programs for early exposure and recruiting
- 2. CRY-ROP
 - a. Connect with counselors and site admin to educate them on the benefits of CTE for ALL students ((soft skills, work-readiness skills, get a job to “earn while they learn” for college bound students, articulation credit (free college!), A-G approved courses, etc.))

CC Report-out:

1. College of the Desert and SBVC-
 - a. Incorporate “trade math”/applied math into academic courses

2. El Camino-
 - a. Take teacher, counselors and students on tours of the CTE programs (and shop programs), not just the “college” itself, which usually just includes academic programs

3. HVAC Edu-
 - a. Take a shop class!

4. SBVC-
 - a. Does tours for 5th graders as well as high school

Industry Recommendations:

Industry Name: NA

Question 5

What are some of the biggest skills gaps that you have identified within the incoming student population?

All: Math, reading critically, soft skills

Other Needs/Comments?

** Discussion led to talk about how there is lots of collaboration with partner CCs and a reminder that public institutions’ curriculum is OER (Open Educational Resources). They must share!

***Hesperia HS also shared the frustration that there are barriers in recruiting and enrolling students due to the (Admin/counselor/parent) mentality of all students should be “college bound” and only take college prep courses. CRY-ROP concurred that this is still an issue even though a majority of their courses are A-G and/or articulated.

***Hesperia also noted that the CTE shop-style classes are still inundated with students that do not have strong academic skills who then struggle with the academic content in CTE classes.

Regional CTE Advisory Community – Energy, Construction & Utilities (ECU)

Breakout: Energy & Power Technology

Community College & High School Faculty

Question 1

What courses and changes are currently taking place in your programs on your campus?

HS Report-out:

A high school has implemented a 2-year drone program. Baldy View ROP is offering a Logistics Program at their Career Training Center in Ontario.

CC Report-out:

A college is implementing a Water Supply and Technology course, which will be taken down to the high school level and a Green Energy Certificate; San Bernardino Valley College offers an Accelerated Electronics Technology Program; and Norco College is offering an Accelerated Certificate & Employment Program and also offers support for veterans.

Question 2

What technology are you currently using?

HS Report-out:

Canyon Ridge High School offers Pro Tools to develop a 3D Audio Workflow for Virtual Reality; Tinkercad for 3D printing; and Math and Digital Media.

CC Report-out:

Colleges are using Programmable Logic Controllers (PLC) automation; Q-Design Tools for CNC machines; home solar systems; supply chain automation; and Protonix lasers and optical systems.

Industry Recommendations:

None

Question 3

What new courses and technology do you see in your departments in the next five years?

HS Report-out:

GIS and logistic programs.

CC Report-out:

None

Question 4

What advice would you give to ROP and high school teachers that would help them better prepare students for transition to community college?

HS Report-out:

Communication, business math, algebra, and reading comprehension skills; integrated projects with colleges; integrating programs such as drone and math courses; partnering academic and CTE teachers in the classroom; use PLCs to create lesson plans.

CC Report-out:

High schools and college faculty working together; a-g and articulated CTE courses; teach practical application in lower grades; high schools teaching beyond the test; all teachers (CTE, Math and English) working together (maker mentality).

Industry Recommendations:

None

Other Needs/Comments?

From the Chancellor's Office, assessment test is going away and will be replaced with CASAS. CASAS is the most widely used competency-based assessment system in the United States designed to assess the relevant real-world basic skills of adult learners. CASAS measures the basic skills and the English language and literacy skills needed to function effectively at work and in life.

Workforce Innovation and Opportunity Act (WIOA) is landmark legislation that is designed to strengthen and improve our nation's public workforce system and help get Americans, including youth and those with significant barriers to employment, into high-quality jobs and careers and help employers hire and retain skilled workers.

The San Bernardino County Workforce Investment Board has established Generation Go! Career Pathways, a countywide program providing work-based learning opportunities to high school students. A key component of its work is ensuring that the county's youth are ready to enter the workforce with the skills needed to compete today and for the future.

Question 5

What are some of the biggest skills gaps that you have identified within the incoming student population?

HS Report-out:

Cognitively Guided Instruction (CGI) is only taught in elementary schools and a different model is taught in high school.

CC Report-out:

Big disconnect between math in high school and college; students don't retain information from high school to college; high school teachers need to teach real world applications; non-graded programs are needed to connect students to real-world experiences; CTE advanced math isn't necessarily at the same level as an advanced math class.

Other Needs/Comments?

Students in pathways have a 10 to 15% improvement in grades; the Carpenters Union offers a mathematics book for carpentry and the construction trades.

Regional CTE Advisory Community – Energy, Construction & Utilities (ECU)

Breakout: Residential and Commercial Construction

Community College & High School Faculty

Question 1

What courses and changes are currently taking place in your programs on your campus?

HS Report-out:

1. Changed course from woodworking to construction
2. Companies are approaching the teacher to work together
3. Construction Trades course teaches small projects first so students can learn manual dexterity, the use of trade terms and the vocabulary.
4. Woodshop should be first the construction

CC Report-out:

1. Students design projects on SketchUp and present the virtual rendering before building the projects

Industry Recommendations:

Industry/Name:

Question 2

What technology are you currently using?

HS Report-out:

1. Teach the mobile “out of the truck” approach like a carpenter would. They have the other equipment but focus on simulating going into the field. Set up tools like a job site.
2. CNC router and CAD to design a project. The design is put into the CNC machine to build the pieces of the project. Whatever the students can draft they can make and assemble.

CC Report-out:

1. Sketch Up for digital rendering
2. (Training organization) Provides MakerSpace for children of clients to use while they wait for the parents. Ages are kindergarten up.

Teacher Recommendation for Others: Learn how to program robotics.

Attend the Fab Tech trade show that has demonstrations on automation pieces, such as, robotic welding arms that weld perfectly.

Question 3

What new courses and technology do you see in your departments in the next five years?

HS Report-out:

1. In an advanced construction course - Metal building materials as part of the class materials.
2. Partner with community colleges for solar program.
3. Include cross-over skills so that students can branch out in the field.
4. Building Tiny Houses although there are variants in laws that accept Tiny Houses as permanent residences.

CC Report-out: Employment Training Site Report out:

1. New technology for commercial technical refrigeration machines.
2. Adding more solar and electrical conduit training

Question 4

What advice would you give to ROP and high school teachers that would help them better prepare students for transition to community college?

HS Report-out:

1. Tie pathway to a contractor union
2. Articulation
3. Site on Community College advisory
4. Know the community College tracks to your courses
5. Dual enrollment

CC Report-out:

1. They do not get high school students, but adults looking for skills training for higher paying jobs
2. Introduce high school students to building codes but keep it hands-on
3. Teach blue print reading

Industry Recommendations:

Industry Name: Union has curriculum with different achievement levels with allows them to earn a proof of achievement that documents what students can do. If a student reaches their level 3, then they may be able to go to direct entry.

Question 5

What are some of the biggest skills gaps that you have identified within the incoming student population?

HS Report-out: 1. Math - Students can't read a tape measure (fractions)

Regional CTE Advisory Community – Energy, Construction & Utilities (ECU)

Breakout: Materials and Heavy Construction Breakout Group/Questions for Educators

Community College & High School Faculty

Question 1

What courses and changes are currently taking place in your programs on your campus?

HS Report-out:

1. CRY-ROP still has articulations in place at high schools in their districts with the local community colleges. Getting students college free credit while in high school.

CC Report-out:

1. San Bernardino Valley College has a makerspace program that will be offsite on Highland and Del Rosa. It will be open to students and the public who are interested in STEAM based learning.

2. Riverside City College is planning to open more workspace on campus and expand their trade program (welding, C&C machine operating, conventional and pre-engineering).

3. The San Bernardino Community College District has Deputy Sector Navigators (DSN) to help with communication with industry and education.

4. Norco College is currently working with Fender Musical Instruments to offer an apprenticeship program to become a Fender guitar Master Builder. Fender picks and chooses which of their employees to send out to the college for training. Professional development is also offered. The trainee must be 18 years of age or older.

Industry Recommendations:

Industry/Name: Lehigh Hanson Company are always looking for good welders.

Question 2

What technology are you currently using?

HS Report-out:

1. CRY-ROP has virtual reality software and hardware for the high school welding program, to get students to learn basic technique and safety before moving on to real tools.

CC Report-out:

1. SBCCD has Excel training for all employees once a month. Partnership with companies.

Industry Recommendations:

Industry/Name: Griffith Company uses AutoCAD, not micro station. Basic Excel and computer skills are important to know. Being able to format a page is also good to know. If you know basic keyboarding then you can learn the software on the job. Tools can't always be learned in a class. They can be taught onsite.

Question 3

What new courses and technology do you see in your departments in the next five years?

HS Report-out:

1. None

CC Report-out:

1. Norco College will have a 4-year program that will teach things such as wiring and schematics. An earn while you learn program. They also have a Clean and Green program, teaching students about renewable energy.

2. Valley College's new Makerspace program will have new technology and tools that will be available at their new off-site location.

3. SBCCD is working on countywide job shadow or internships.

Industry Recommendations:

Question 4

What advice would you give to ROP and high school teachers that would help them better prepare students for transition to community college?

HS Report-out:

1. Hesperia Unified School District has to be tough on higher learning for adults in order for them to get a job out of class. Basic soft skills has to be taught. Basic common courtesies (please, thank you, hand shake, eye contact, etc..) should also be taught in the home.

CC Report-out:

1. RCC states that communication is stunted with today's students because of texting and phones. New students need to learn about surviving in the college environment.

Industry Recommendations:

Industry Name: Hanson Company collaborates with their local high schools and community colleges.

Question 5

What are some of the biggest skills gaps that you have identified within the incoming student population?

HS Report-out:

1. HUSD states that millennials need more motivation because they keep hearing how lazy they are. Life will hit them fast once they go out in the workforce

CC Report-out:

1. Norco College feels that new students don't have that personal drive to keep them going, or stay interested.

Industry Recommendations:

Industry Name: Griffith Company needs self-motivators. Students and new employees cannot read basic plans, or ask questions in order to learn. Deadlines are important to meet on time. The company cannot afford excuses. Job fit is important. Knowing how to interview does not mean you know how to do the job. Respect must be earned.

Other Needs/Comments?

HS:

1. CRY-ROP and HUSD can cover insurance and Workers Comp for any internships or job shadow for their students.

CC:

None

Industry Partners:

Industry/Name: Griffith Company might be interested in a job shadow but they feel that technical based information is too difficult to see and learn on a job shadow. There is too much process happening and the concept might be hard to understand.

The Human Resources Department might be a better place to job shadow and be able to ask questions and explain what the schools should do.

Regional CTE Advisory Community – Energy, Construction & Utilities (ECU)

Breakout: Cabinetry, Millwork and Woodworking

Community College & High School Faculty

Question 1

What courses and changes are currently taking place in your programs on your campus?

HS Report-out:

1. Yucaipa High School – Construction tech class builds houses, key component for her class getting millennials to understand product design, 80% computer lap 20% hands on
2. Fontana High School – Wood and Product Design
3. N. County Trade Tech H.S. – New industrial building, in the process of building his own program
4. Colton High School – Have new simulators to give students an experience. Also got a new 3-D printer
5. FUSD – Having trouble finding someone in the industry to teach the classes needed because industry folks are being paid more for less than teaching

CC Report-out:

1. **NO INDUSTRY PARTICIPANTS**

Industry Recommendations:

Industry/Name: **NO INDUSTRY PARTICIPANTS**

Question 2

What technology are you currently using?

HS Report-out:

1. N. County Trade Tech H.S. – CNC machine as well as traditional machines
2. Fontana High School – CAD (Computer system design)
3. Yucaipa High School – Sketch Up (3D Modeling program), Web based programs

CC Report-out:

1. **NO COMMUNITY COLLEGE PARTICIPANTS**

Industry Recommendations:

Industry/Name: **NO INDUSTRY PARTICIPANTS**

Question 3

What new courses and technology do you see in your departments in the next five years?

HS Report-out:

1. Yucaipa High School – Screen and iPads on TV since kids love video games
2. Colton High School – More integration of cell phone apps since students love to be on their phones – If you can't beat them, join them.
3. Integration of the cloud so that students can access assignments everywhere

CC Report-out:

1. **NO COMMUNITY COLLEGE PARTICIPANTS**

Industry Recommendations:

Industry/Name: **NO INDUSTRY PARTICIPANTS**

Question 4

What advice would you give to ROP and high school teachers that would help them better prepare students for transition to community college?

HS Report-out:

1. Yucaipa High School – Being able to see student's strengths and weaknesses. To use that to prepare them for the industry and build a relationship with students
2. Fontana High School – Middle schools should have a class where they get a sample of everything. Was available in years past, but went away in recent years

CC Report-out:

1. **NO COMMUNITY COLLEGE PARTICIPANTS**

Industry Recommendations:

Industry Name: **NO INDUSTRY PARTICIPANTS**

Question 5

What are some of the biggest skills gaps that you have identified within the incoming student population?

HS Report-out:

1. Yucaipa High School – Being engaged emotionally
2. Fontana High School – Making sure that students are in the right classes and that they're prepared not just for college but career as well
3. N. County Trade Tech H.S.- Communication and Drive
4. Colton High School – Teaching students how to properly present in front of people