

November 2016

Recruiting HVAC Technicians for the Next Decade

A Special Feature of the Western HVAC Performance Alliance

Note from Chief of Staff Mark Lowry – The WHPA is, by mission, composed of a wide range of stakeholders, in fact 27 categories, united by a common interest in HVAC Energy Efficiency in California and beyond. This special issue of the WHPA quarterly newsletter provides data and many experienced voices providing their views on the topic of “Recruiting HVAC Technicians for the Next Decade”. We hope this stimulates you to join in the dialog, whether through WHPA Committees and Working Groups or in other ways. This is a challenge that we all must work to solve in order to meet energy efficiency goals.



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HVAC technicians might seem to have it made. [Eventually] they're paid well, there's always work, and many of them go on to run their own businesses. Despite these truths, the HVAC industry is facing a challenge that will impact contractors and consumers; there is an abundance of good jobs that need to be filled and a shortage of qualified people to fill them.



According to the Bureau of Labor Statistics, HVAC mechanic and installer jobs nationwide are expected to grow 14% from 2014 through 2022. That's double the average rate of all occupations.

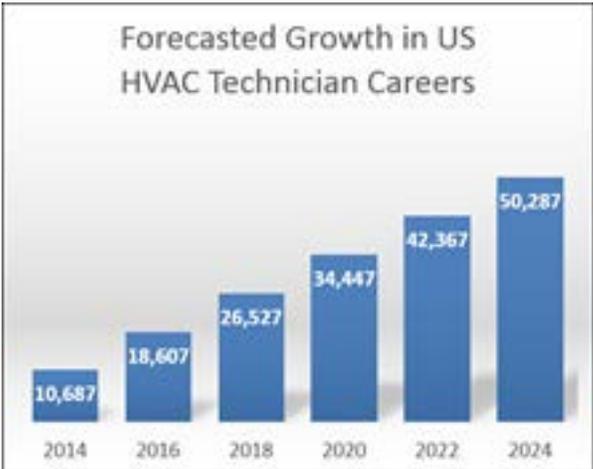
In California HVAC is booming even more, largely because of the critical link between HVAC and California's energy efficiency initiatives.

According to the California Community Colleges Centers of Excellence 2016 report, public and private training programs in the state produced only about 1,000 new HVAC workers – only half the number needed for the year.

We might start by asking why the supply of people entering an HVAC career is less than the demand. HVAC offers many opportunities for young Americans entering the job market:

- ▶ It offers the prospect of a well-paid career for which there is always demand. The US needs more stable jobs that cannot be outsourced and HVAC offers just that.
- ▶ HVAC jobs are well suited to mechanically-inclined individuals.
- ▶ Learning the HVAC trade requires minimal personal expense compared to a 4-year college degree.
- ▶ Hourly wages for a trainee often start \$5 an hour or more above minimum wage, and can increase to a living family wage after completion of an apprenticeship or non-union training.
- ▶ Many HVAC technicians become business owners over time.

The individuals interviewed for this special feature offer many observations as to why too few people enter the

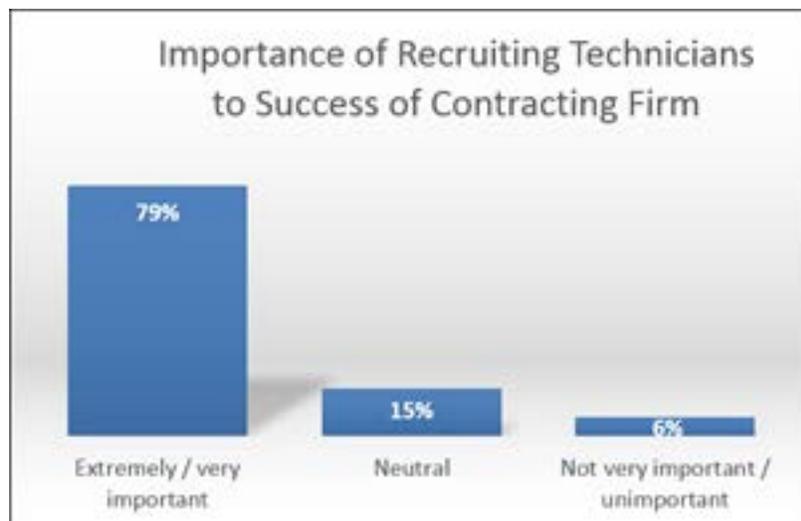


HVAC trade. You can read their views in depth in the accompanying articles. Some of the factors cited the most are:

- ▶ Shop classes are far less common in middle and high school than they were 50 years ago.
- ▶ High school, and society in general, have established college as the de-facto goal for students
- ▶ There are very few “trade track” educational programs in high school.
- ▶ The pool of entry-level candidates who can comply with drug, criminal record, and clean driving records is smaller than in the past.

What is the impact, if there are not enough HVAC technicians entering the training pipeline in California?

- ▶ Barrier to achieving California’s energy efficiency goals – The 2016 California Community Colleges “Workforce Barriers” report states, “Mounting evidence indicates that workforce quality has become a barrier to Energy Efficiency goals... set by (California) Assembly Bill 32 in 2006.”
- ▶ Rising costs to consumers – When demand exceeds supply, prices increase.
- ▶ Restricts future business success of mechanical contractors – A survey by HVACR Business found that 79% of contractors viewed their ability to recruit technicians as critical to the future success of their business, while only 6% said that it was not important. Unfortunately, 64% of them said finding these technicians was very difficult.



Source: HVACR Business Contractors Study 2016

The Western HVAC Performance Alliance (WHPA)’s mission is to contribute to the advancement of energy efficiency in the HVAC industry by providing a forum where a wide variety of stakeholders provide experience, expertise, and opinion to help inform state policies and utility programs.

In this feature, “Recruiting HVAC Technicians for the Next Decade,” we have asked a number of our members – representing experience from residential and commercial mechanical contractors, distributors, labor, education, and more – to add their voices to this important discussion.



Terry Tanker - Pages 5 & 6
<http://www.performancealliance.org/TerryTanker/tabid/2592/Default.aspx>

California Community Colleges

Jim Caldwell - Pages 7 & 8
<http://www.performancealliance.org/JimCaldwell/tabid/2598/Default.aspx>



Bob Wiseman - Pages 9 & 10
<http://www.performancealliance.org/BobWiseman/tabid/2593/Default.aspx>



Don Langston - Pages 11 & 12
<http://www.performancealliance.org/DonLangston/tabid/2594/Default.aspx>

Sheet Metal Workers Local 104

Dave Dias - Pages 13 & 14
<http://www.performancealliance.org/DaveDias/tabid/2596/Default.aspx>

Brenkwitz High School

Joshua Moran - Page 15
<http://www.performancealliance.org/JoshuaMoran/tabid/2597/Default.aspx>

Below are links to referenced research on the HVACR workforce, WHPA groups that are currently working on Workforce Education and Training (WE&T) topics, and the WE&T work product that the WHPA has produced.



Research on the HVACR Workforce - Page 16
<http://www.performancealliance.org/Communications/WorkforceReferences/tabid/2584/Default.aspx>



WE&T Committees and Working Groups - Pages 17
<http://www.performancealliance.org/WHPAWETCommitteesandWorkingGroups/tabid/2599/Default.aspx>



WE&T Work Product - 18 & 19
<http://www.performancealliance.org/WHPAWorkProductsWorkforceEducationTrainin/tabid/2600/Default.aspx>



Contractors Are Worried, According to a Recent Survey

An interview with Terry Tanker, HVACR Business

HVAC contractors are plenty worried about the scarcity of entry-level technicians, according to a survey that is being published this month (October 2016) by HVACR Business.

The AHRI ACCA PHCC 2016 HVAC Contractors Study, conducted by HVACR Business, offers statistically validated proof of concerns that are often expressed by individual contractors.

- ▶ 94% identified hiring of quality technicians as very or critically important to their company's overall growth;
- ▶ 75% reported difficulty finding qualified and motivated technicians most or all of the time;
- ▶ 80% cite lack of job-readiness of new hires who have just completed post secondary HVAC education;
- ▶ 73% say their business growth is negatively impacted by a lack of technicians.



Terry Tanker, publisher of **HVACR Business** for the past 10 years, spends his workday plugged into the issues faced by HVAC business owners and managers. In addition to sharing this survey with the WHPA, Terry offered these observations:

Terry Tanker: “Contractors, especially residential, are very concerned about the type of employee they are going to send into a customer’s home. A home is very personal. They don’t want technicians with arrest records or a history of drug or alcohol abuse. And technicians need a clean driving record for insurance reasons.

“The pool of technician candidates continues to shrink. Contractors find it challenging to find people who meet the “must” criteria - those who have a good customer manner, work ethic, and technical skills or at least the aptitude and motivation to develop those skills.”

Terry, who went to high school during the 70’s, has some advice for educational policy makers. “The #1 way to get our workforce back on track is to re-institute skilled trade classes back in junior high and high school – woodworking, electrical, plumbing. These are all skills that our country is going to be desperate for sooner rather than later.

“The #1 way to get our workforce back on track is to re-institute shop classes back in junior high and high school.”

“Skilled trade classes better known as shop classes were eliminated from many schools back in the 70’s, when I was in middle school and high school.



Everyone was routed to a college track.

“The consumer will pay for the lack of skilled trade workers. HVAC technicians are retiring at a greater rate than new people are entering the industry, so owners are going to be forced to pay higher and higher wages to attract people, and they are going to pass those costs along to the customer. It will be a lot less painful for all concerned if we attracted those younger people into the HVAC work force right now.

“Talk about a recession-proof job. If you have HVAC technician skills you will never be out of work.

“HVAC can give a person the very realistic possibility of being a business owner. Contractors who do this right make a fantastic living, and they are providing better lives for their employees.” The recent contractor survey, while discouraging in the difficulty of finding strong candidates for technician positions, strongly affirms the opportunities available to young people entering a HVAC technician career path.

Other voices heard in this feature – labor, community college, trade associations, and contractors – are contributing to the development of the next generation of technicians.

Terry would say that, if skills development and respect for a career in the trades started in high school or even junior high, future contractor surveys may tell a more positive story.



CA Community Colleges Collaborate on Education

An interview with Jim Caldwell, California Community Colleges

Jim Caldwell is Statewide Director and Sector Navigator for Energy, Construction & Utilities for the California Community Colleges. He engages with many of the players in training and certification, including labor, colleges, and credentialing organizations, and also commissions research to supply data to inform policy making.



In addition to the interview below, Jim has authored a document “Workforce Barriers to Meeting California’s Energy Efficiency Mandates” (Sept. 2016) with further information on the next generation of HVAC technicians.

Let’s start with the numbers. How many extra technicians does California need?

Jim Caldwell: “We identified a gap of 1,200 credentialed HVACR workers in 2014. The state’s training institutions – community colleges, apprenticeship programs, and private training institutions - supply about half of the 2,000 new HVAC workers needed annually.”

You have expressed concern about the potential impact of HVAC workforce quality on California energy efficiency.

“... workforce quality has become a barrier to Energy Efficiency goals for the built environment set by California Assembly Bill 32 in 2006.”

“Mounting evidence indicates that workforce quality has become a barrier to Energy Efficiency goals for the built environment set by California’s Assembly Bill 32 in 2006. SB 350, the Clean Energy and Pollution Reduction Act of 2015, calls for a doubling of these goals, potentially creating thousands of new jobs but adding further concern about workforce quality related to achieving the state’s mandates.

“The California Energy Commission estimates that up to 50% of new HVAC systems and up to 85% of replacement systems are not installed and maintained to a quality level of specification. This issue is attributable to the fact that more than 70% of all HVAC workers never completed an accredited HVAC education or training program.”

The State has energy efficiency and workforce goals that relate to HVAC. As a state employee, how do you see the multiple goals coming together?

“Policies at multiple state agencies have allowed fragmentation and misalignment. Current policies create many separate workforce agendas and funding streams among community colleges, apprenticeship programs, private training organizations, workforce development boards, and community-based organizations.

“As a result, most of California’s multiple workforce agendas and funding streams are not currently mapped to the state’s various energy efficiency mandates nor are workforce development and educational entities in alignment on their initiatives.



“For example, labor market data identifies demand that is twice the current supply of HVACR workers across the combined graduates of community colleges, apprenticeship programs, and private training institutions in California.

“Further, there are few common initiatives or leveraged funding streams among these entities to address the gaps in HVACR workforce competencies clearly identified in research that resides on the WHPA website.

“So, just bridging the currently documented workforce gaps is a challenge, complicated by lack of a common roadmap for statewide alignment of WE&T programs with the state’s energy efficiency mandates. The dearth of common metrics for workforce contribution creates further difficulty in achieving these mandates.”

Among all these challenges some really good work is being done. What are you seeing on the solution side?

“In 2014, once the Community College team quantified the technician gaps by region, we began to address them in collaboration with our colleges and apprenticeship programs.

There are 23 California community colleges with HVACR programs. My team, the Southern California HVACR Collaborative, led a collaborative of five colleges in HVACR curriculum alignment and capacity building initiatives to close the gaps. The collaborative benchmarked all HVACR curriculum across the five colleges to a 3rd party list of competencies for employment-ready certification.

“This 3rd party list of competencies is being validated by the WHPA Whole Building Career Lattice Working Group with various credentialing bodies.”

The approach you use as a Sector Navigator is very data-oriented. What was a “surprise” that you have seen from the research results?

“We wanted to identify third-party workforce credentials that employers value when hiring new workers and compensating those who achieve higher levels of proficiency. We did an extensive survey of job ads for HVACR workers in the Bay Area and greater Los Angeles over a year’s time, collecting the actual recruiting language used in the ads.

“We found that none of the 170+ industry certifications were in the top 20 recruiting terms. The top credential was EPA 608 and next was a California Driver’s License.

“So what do employers value in hiring new employees? We spent a lot of money to align the five community colleges in the collaborative with an employment-ready standard. Now we need to go through a validation process with employers to see if that credential is valuable to them.”



Challenges for Technicians and for Contractors Too

An interview with Bob Wiseman, Canoga Park Heating and Air Conditioning; IHACI

Bob Wiseman has more than three decades of experience as the owner of a HVAC company, and is a respected and trusted leader with HVAC and energy efficiency organizations. He is Chairman of the Board of Institute of Heating and Air Conditioning Industries, Inc. (IHACI), an association of HVAC/R contractors, manufacturers, distributors, and utility firms.



Bob believes that one of the greatest challenges facing the industry is recruiting and training HVAC technicians. “It’s been an issue for a very long time,” said Wiseman; a sentiment echoed by many contractors.

Bob wrote the following comments for this WHPA feature:

HVAC technician job getting harder

Bob Wiseman: “Attracting people to this industry is very difficult and it’s getting worse. The job requirements just keep getting harder. The technical aspects of the equipment have become more complicated to work on; more electronic oriented.

“Attracting people to this industry is very difficult and it’s getting worse.”

“When I came into this industry many years ago, working on residential furnaces was a relatively simple process. Today, they are complex pieces of equipment, and consequently, it takes a long time to properly train people.

“Today, we ask so much more of technicians. Back in the ‘70s and ‘80s, we didn’t focus on duct leakage. ‘Whole house’ wasn’t a mainstream concept;

now, we expect service technicians to not only understand these concepts, but to effectively communicate them to consumers.”

Let’s encourage the trades in school

“The removal of vocational education and training from the high schools has been a huge disservice to everyone. While high school counselors push the college bound, there doesn’t appear to be much left for the mechanically/ technically gifted student who isn’t interested in spending 4 years in college. We certainly embrace education, but it can’t be a one-size fits all mentality.

“We’ve got to explore alternatives and encourage growth and participation. Outreach to K-12 is an absolute necessity. HVAC/R is one of several trades responsible for building California’s infrastructure and is a leader in energy conservation and savings. Isn’t it time to embrace and introduce this very important business sector to students?

“Hopefully, in time, we’ll get to a point where HVAC/R is appealing to high school



students as they begin to start making life decisions. HVAC/R certainly has the potential to create a solid career and livelihood should one desire.”

In-house training isn't enough any more

“Many contractors spend a tremendous amount of time in-house training. It's a traditional method that's been used for the past 60 years. But in-house training is not enough anymore, particularly in California, where energy regulations/requirements constantly change.

“It's no longer a matter of just keeping up with the technology; service technicians need to comprehend and incorporate energy regulations to their skill set. This is an ongoing process. It doesn't stop with the completion of any given HVAC training program.”

IHACI trains 13,000 students a year

“IHACI [*ed. note: Bob is Chairman of IHACI, a HVAC trade association*] has a statewide California Quality Installation, Maintenance and Service (QI/QM/QS) training program as well as a training series to prepare for a North American Technician (NATE) certification. The training was developed for the industry, by the industry and is targeted to the incumbent workforce. The focus is on what technicians will face in the field and provides them with essential training such as: electrical, refrigeration cycles, air distribution, whole house performance, etc.

“Contractors and employees have embraced the training and as a result of the support of the Investor Owned Utilities (IOU) and industry, a critical need in the HVAC/R industry has been and continues to be met.

“Contractors are also reaching out to trade schools, talking to students and teachers, donating equipment, doing all they can to bolster those programs.”

Legitimate contractors need a level playing field

“There's a great deal that needs to take place in order for contractors to remain competitive and attract the best and the brightest in the industry. In short, we're going to have to take care of our employees.

“Legitimate contractors could certainly use a helping hand in this area. Something is going to have to be done to create a level playing field. Those who comply with the laws and regulations governing the State are outnumbered by those who don't. This does nothing to improve the livelihoods of our employees.

“As the challenges of recruiting, retaining, and training technicians are better understood by regulators, academia and the industry at-large, we can positively impact the future of HVAC/R workforce. There's great potential and opportunity in the HVACR industry.”



ACCA Executive Plans to Rebrand Technician Jobs

An interview with Don Langston, ACCA; Aire Rite Airconditioning and Refrigeration

What do you see as strategic issues around recruiting technicians for the next decade?

Don Langston: For contractors, the quality of many of the applicants for technician positions in our companies is a concern – work ethic, expectation of pay, need for work/life balance, commitment to staying with a company for more than a few years. Contractors spend a lot of time and money investing in each new technician. As a commercial HVAC contractor, we work on a variety of complex equipment that requires a lot of training. The maturation period for a proficient technician is measured in years, not months.



Are you saying that recruiting and training residential HVAC technicians has different considerations than on the commercial side?

Yes. While the technician's job is getting more complex in the commercial world, residential is to some extent moving toward DIY. I call that the Amazon effect; making things easier for the consumer. Amazon is a market disrupter on retail and supply chains. It goes back to that convenience factor. The goal is to give a technician an iPhone and products that are more modular so that HVAC service and installation can be done with someone who can do basic, Ikea-type assembly. Manufacturers are there to sell units. They are under pressure internationally to have a low price point, so they will be making [residential] equipment that is easier to install and maintain.

There has been a division of sorts in the required skills of HVAC technicians, with residential and light commercial on one side, and complex commercial above 15,000 square feet, on the other. In complex commercial you get different types of building systems that talk to each other and need to work together – heating, AC, lighting controls, even solar batteries that are storing power. As whole building integration becomes even more common, it will be a bigger challenge to mechanical contractors to have technicians with the installation and service skills for that environment.

How do you think California high schools are doing in preparing candidates for a career in the trades?

I think California high schools have been failing some of the students for a long time. There is the mantra to get everyone to college because trade skills are looked down on. But carpentry, masonry, plumbing, and HVAC are all skills that are needed out in the real world. I've asked high school principals, "How can you, with a good conscience, do that to young people? Just encourage everyone to go to college?" There are a bunch of people who have college debt and are working at Starbucks.

How do you make HVAC jobs exciting to young people?

As incoming chair for ACCA, I want to help the millennials understand what the HVAC industry is about, how they can have good paying jobs that cannot be



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outsourced to China or Mexico. Yes, the job is physical and it is challenging, and it is not developing video games, but it's a great career. When I talk to young people and tell them what they can earn in HVAC their jaws drop. The parents are there. I say "How would you like to put your kids through a two-year program and at the end they can get a job at \$15 to \$20 an hour?"

It has turned into a mission for me to tell the story.

"I use the term 'green collar job' when I talk to high school students. HVAC can be a huge partner impacting the environment – an educational renaissance to a generation using smartphones."

I use the term 'green collar job' when I talk to high school students. This is a rebranding of the HVAC technician's job. HVAC can be a huge partner impacting the environment – an educational renaissance to a generation using smartphones. It is a big and growing component of the workforce for the 21st century.

So many aspects of day-to-day life are powered by electricity. Anything that is being delivered more efficiently will reduce the use of power and save energy. This is the future, and it's already here.

I was exhibiting at a high school career job fair; I had a solar panel, and a compressor powered off of a battery. The compressor had two cups; one was heating the water and one was cooling it. We are running this system off of the power grid, using a solar panel. The kids said Whoa. I told them, "You can be involved in keeping people cool, lowering energy cost, and lowering the impact on the environment."

I intend to make the need to redefine and rebrand our industry and the jobs of our technicians a centerpiece of my ACCA chairmanship. The value these green collar HVAC technicians can provide for their families, communities, our country, and for the environment. I plan to push initiatives that link green collar jobs to delivered efficiency. Where is our federal government in understanding that? And from an education perspective, how can we get many more people trained?

Editor's note: Research from page 29 of the recent study "Advanced Energy Jobs in California; results of the 2016 California Advanced Energy Employment Survey", by the Advanced Energy Economy Institute, supports Don's comments about green collar HVAC jobs with current and projected job numbers. It states, among many findings, that job growth in California in the Energy Efficiency sector, of which HVAC is the largest component, grew by 6% over 2014.



Labor Training Program - Over 60 Years of Experience

An interview with Dave Dias, Sheet Metal Workers Local 104

Dave Dias has been active in HVAC union labor for 33 years. He serves 49 counties in northern and central California as a Business Representative of Sheet Metal Workers Local 104.



Dave's experience with the supply of qualified technicians differs sharply from that of many non-union contractors and of the AHRI/ACCA/PHCC 2016 Contractor Study that was recently released. This may reflect the difference in supply and demand for union as opposed to non-union technicians.

Providing multiple perspectives is a core value of the Western HVAC Performance Alliance, and also a goal of this newsletter feature, so let's listen to what Dave has to say.

How do you determine how many people to bring into the apprentice program?

"The way labor sees it, once there is a demand, we fill the demand through apprenticeships. We have no issues filling apprenticeship jobs."

"The way labor sees it, once there is a demand, we fill the demand through apprenticeships. We have no issues filling apprenticeship jobs."

Dave Dias: "The way labor sees it, once there is a demand we fill the demand through apprenticeships. I will use the example of the Bay Area. Starting approximately four years ago there was about an 18 month gap where we did not bring apprentices into the labor training program because the economy was bad. Currently in the Bay Area we have about 950 apprentices in various stages of our five-year apprenticeship program. We spend about \$6.5 million a year training these people."

"There are so many different aspects of the sheet metal building trade and no one can learn everything. So we have three basic technician categories: fabricators/installers, service, and the testing adjusting and balancing. These are each separate apprenticeships, which allows contractors to hire technicians with the expertise that they need."

What is your current experience in filling contractor requests for workers?

"We have no problem filling contractor requests for apprenticeship jobs; we supply workers for both commercial and residential contractors."

"Sometimes we have an issue filling journeyman jobs with local journeymen, but we get them from other areas of the country; they have essentially the same training that we have in the Bay Area. It will take a few more years to graduate more local apprentices to become journeymen, then there won't be any issues."

"We go to school career fairs, talk to the students, and suggest that if they have mechanical skills then they should apply to the union apprenticeship"



program. The entire five-year program is free to the student, except for union dues and training funds. Also, all students get money going into their healthcare, pension funds and other benefits starting on day one.”

How competitive is it to be accepted as an apprentice?

“In the Bay Area the labor/management training program receives over 1,000 applicants a year. Our apprentices are indentured by the process of scoring through testing. The highest score gets indentured first and so on, except for the direct entry apprentices. So if we need 200 apprentices for 2017 and 1000 apply we take the top 200 after they go through the testing process. Recently we have accepted about the top 20.

“After testing and other vetting, only about 20% of the applicants are accepted into the program. Up to 25% of the apprentices come in directly through special programs for disadvantaged communities and veterans.”

What’s your summary statement, after working with labor for so many years?

“We have been training and turning out skilled technicians since before the 1950s. Our guys graduate the program with a certificate and college credits because we are tied in with community colleges. Our guys are getting classroom and work experience at the same time and when they complete the program, they have a career they can be proud of.”



The Next Generation of HVAC Technicians A High School Teacher's Perspective

An interview with Josh Moran, Brenkwitz High School

High school teachers are on the front lines when it comes to preparing young people to enter the workforce. We spoke with a teacher at Brenkwitz High School in Northern California who sees firsthand how students decide what career is right for them.



Joshua Moran is a continuation high school teacher, spending his days working with students who haven't had the smoothest ride through school. He believes his role goes far beyond teaching the curriculum. One way Josh tries to help students succeed beyond high school is by guiding them toward a good career.

Does Brenkwitz High School offer trade classes, such as electrical or plumbing?

Joshua Moran: We don't directly offer vocational training, but we partner with a local Regional Occupational Program (ROP) that does. That allows the students to learn a trade from 12:30 to 3:30 during their school day while also earning high school credit.

Does your school connect students with potential employers?

Well, we introduce them to the people and programs that help them find work. The students go on field trips to meet contacts with local colleges and ROP programs. The students that go on these trips are mostly from general education [as opposed to continuation].

We also host career days where employers come and give presentations. One of these events recently prompted a student to enroll in the free HVAC program at a community college. It was a no brainer. Laney College has free trade programs for low-income students. They have it for specific areas like HVAC, 3d printing, welding, and construction. The student went with HVAC because it was free, the career is in demand, and the starting pay can be \$16 or \$17 per hour.

Do you see a lot of students go into HVAC?

Not really. Most of the guys want to be auto mechanics instead. They love auto tech and auto body – and painting. They like it; it's a cultural thing. They grow up working on cars with their cousin, brother, or uncle. They're comfortable with it and it's a cool thing to do.

* * *

Editor's note: The HVAC trade is growing three times faster and averages 19% higher pay than auto mechanics(1). While a technician's job is literally to make things cool, in a 17 year old's eyes, perhaps it isn't cool enough.

1) US Dept. of Labor Statistics – HVAC statistics; Auto mechanic statistics



References and Studies on HVACR Workforce

These reference documents all address the issue of “Recruiting Technicians for the Next Decade”, which is the subject of a special WHPA report.

- ▶ [US Bureau of Labor Statistics \(BLS\).](#)
- ▶ [Advanced Energy Jobs in California; results of the 2016 California Advanced Energy Employment Survey.](#) 2016. Advanced Energy Economy Institute.
- ▶ [Workforce Barriers to Meeting California’s Energy Efficiency Mandates.](#) Sept. 2016. California Community Colleges Workforce and Economic Development.
- ▶ [A Workforce for California SB 350 – Integral to Achieving Clean Energy & Carbon Reduction Mandates.](#) Mar. 2016. California Community Colleges Workforce and Economic Development.
- ▶ [Executive Summary - The HVACR Workforce: Demand Heats up as Supply Melts Away: A projection of the coming shortfall of HVACR Workers and how to fix it.](#) Sept. 2015. By HVACR Workforce Development Foundation.
- ▶ [Supply Report —The Next Generation of HVACR Installers and Technicians.](#) Sept. 2015 By HVACR Workforce Development Foundation.
- ▶ [Demand Report — Heating up: The Sweltering Demand for Heating, Ventilation, Air Conditioning, and Refrigeration Workers, prepared by Burning Glass Technologies.](#) Sept. 2015 By HVACR Workforce Development Foundation.
- ▶ [Workforce Issues and Energy Efficiency Programs: A Plan for California’s Utilities.](#) UC Berkeley Don vial Center on the Green Economy. May 2015.
- ▶ [HVAC Contractors Study,](#) 2016 sponsored by AHRI/ACCA/PHCC and published by HVACR Business. Oct. 2016.

WHPA WE&T Committees and Working Groups

One of the objectives of the Western HVAC Performance Alliance (WHPA) since its formation in 2009 has been to bring a wide set of knowledgeable HVAC and energy efficiency stakeholders together in committees and working groups to develop substantive work products. During the past six years there have been many work groups tackling different aspects of Workforce Education and Training.

There are seven WHPA work groups that are currently actively working on Workforce Education and Training Topics, which is the largest single focus area for the WHPA. You can find more information on each group by clicking on the link. Many are looking for additional knowledgeable and committee industry members to participate in their activities.

Current Committees and Working Groups (WE&T topics)

[Diagram of WHPA Committees](#)

[Compliance Committee](#)

[CQI Standardized Field Data Spec and Performance Evaluation Method Working Group](#)

[CQM Standard 180 User Guide Working Group](#)

[Existing Buildings Action Plan Committee](#)

[Whole Building Career Lattice Working Group](#)

[Workforce Education & Training Committee](#)

Completed Group (WE&T topics)

[Workforce Education & Training Sales Working Group](#)



WHPA Work Products – Workforce Education & Training

The Western HVAC Performance Alliance has delivered many work products over the years on aspects of workforce education and training. Below is each of the work products, with an abbreviated title. You can link to the complete work product.

WHPA Work Products are developed over months or even years by a volunteer committee or working group of subject matter experts. Each work product must be approved up through the WHPA organization and finally reviewed by the Executive Committee. If approved by the Executive Committee, it becomes a public document under the WHPA logo.

A complete set of WHPA Work Products may be viewed [HERE](#).

2016

- ▶ Existing Buildings Action Plan 2017 – input to CEC [Interim Work Product \(Final Draft\) – EBEE Action Plan 2017 Update Input \(Recommendations\)](#)
- ▶ Recommendations to Operationalize “Employer Support” [Recommendations to Operationalize “Employer Support” for the HVAC Sector Strategy](#)

2015

- ▶ Standard 180 - User Manual Report [CQM Committee ANSI/ASHRAE/ACCA Standard 180 User Manual Working Group Phase 1 Final Report](#)
- ▶ Standard 180 - Report on Economizer Maintenance (Table 5-12) [CQM Committee ANSI/ASHRAE/ACCA Standard 180 Maintenance Task Working Group Report - Table 5-12 Economizer Maintenance](#)
- ▶ Gaps and Barriers in the EBEE Action Plan - Input to CEC [Existing Buildings Energy Efficiency Action Plan Alignment Table \(Gaps & Barriers\)](#)

2014

- ▶ Commercial HVAC Sales Trainer Webinar [Commercial HVAC and EE Sales Trainer Teleconference/ Webinar](#)
- ▶ HVAC Sales Trainers Clearinghouse [HVAC Sales Training Providers Clearinghouse](#)
- ▶ Recommendations for HVAC Sector Strategy - Input to IOUs [Recommended HVAC Sector Strategy Problem Statements Performance Gaps](#)



- ▶ Standard 180 - Report on Rooftop Units (Table 5-22R) [CQM Committee ANSI/ASHRAE/ACCA Standard 180 Maintenance Task Working Group Report – Table 5 - 22 Rooftop Units](#)
- ▶ HVAC in Whole Building Performance Education Roadmap – [HVAC in Whole Building Performance Education Industry Roadmap](#)

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- ▶ Certifications Gap Report [Certification Working Group Gaps Report](#)
- ▶ Commercial QI/QM Gaps Report [Commercial QI/QM Working Group Gaps Report](#)
- ▶ Residential QI/QM Gaps Report [Residential QI/QM Working Group Gaps](#)
- ▶ Training and Education Gaps Relative to Codes and Standards [Codes & Standards Working Group Gaps Report](#)
- ▶ Training and Education Gaps Relative to [Sales Force & Service Working Group Gaps Report](#)

