

A blue triangular area in the top right corner of the slide, containing a white network diagram. The diagram consists of numerous small white dots connected by thin white lines, forming a complex web of connections.

# Inland Empire Regional Mobility Dialogue Series

## Results and Summary



**Developing  
the Transportation  
Workforce of the Future**

Oct 29, 2019

## Introduction

The transportation industry is rapidly changing with technology advancements and the development of service delivery modes that could not be imagined just 10-years ago. The next generation of transportation practitioners at all levels will need new and different skill sets to adapt to these rapid advancements. Transportation service providers, equipment manufacturers, planners, engineers, and policy makers are having to revise and update their skills as a result of these changing trends in technology and service delivery. This Dialogue looked toward the future and discussed what skills will be needed by those seeking employment in the transportation field. Many jobs in transportation will require information technology, modeling, software, social media, and outreach skills, which were not commonly needed in the past.

Our experts focused on the specific skills that will be required of tomorrow's workforce and how the industry is responding to these rapidly changing requirements. Our expert speakers included:

- Yvonne Lopez-Diaz, Vice President, Director of Human Resources, HNTB Corporation
- Nicholas Kochek, Experienced Executive Operations Officer and a Certified John Maxwell Coach, Trainer and Speaker
- Kenny Melancon, Assistant Professor, San Bernardino Valley College
- Teri Fisher, CEO & Managing partner, Insight Strategies

The main takeaways included how to better prepare the next wave of transportation professionals for emerging jobs across the industry sector.

### Yvonne Lopez-Diaz, Vice President, Director of Human Resources, HNTB Corporation

Yvonne Lopez-Diaz is the Human Resources Director for the Central and Western Regions at HNTB Corporation. Lopez-Diaz has been with HNTB for nearly two decades. "I enjoy what I do in my role at HNTB. I spend a lot of time focusing on how we prepare our organization for the future relative to our number one asset that we have, which is our people," said Lopez-Diaz. Yvonne spends most of her time focusing on organizational strategy, helping leaders plan for the next five years, and supporting clients such as airports, departments of transportation, and transportation agencies.

The question is what do we need to be doing now to develop the transportation workforce for the future? How do we repurpose the staff that we have today? "We've got a lot of wonderful workers out there that don't have the skills that we are going to need in the future; especially as it relates to the advent of autonomous and automated vehicles that are coming very fast." Add to this, 40-50 percent of the current workforce in the country are part of the baby boomer generation and will be retiring. All of the institutional knowledge will be gone. Industry, working with educational and public sector partners, needs to deliberately develop their workforce so it is prepared for the fast approaching future demands. "Engineers will have to engineer

differently. Planners will have to plan differently. Construction personnel will have to construct differently, a lot of things will change with the technology,” said Lopez-Diaz. For example, planners are working currently on expanding our roads, but transportation patterns are changing as we see with the millennial generation who own fewer cars. The younger generation prefers public transportation if they can take it, so road expansion may not be the right idea moving forward. This is just one example of how the working environment will change for planners moving forward. Another example can be found in transportation agencies. Engineers and planners will have to construct and design street lanes to accommodate automated vehicles along with vehicles driven by people. These changes are bringing about the need for unique approaches to workforce development.

Additional examples of jobs that will change are taxi drivers, IT professionals, cybersecurity professionals, and land developers. Taxi driver jobs are changing with use of transportation network companies. IT professionals will be in high demand as more data analysts will be needed to manage big data, and new technologies are integrated into our transportation systems to help us make better decisions and move more efficiently. With new connected technologies, there are increased cybersecurity threats, and a demand for cybersecurity professionals. Land developers will need to rethink what communities look like and the use of space will change. “So, the whole ecosystem of trucking, transit, and transport. That whole logistics element, that ecosystem will require a new set of skills, so we have to work with each other to ensure that we are developing the workforce of the future.”

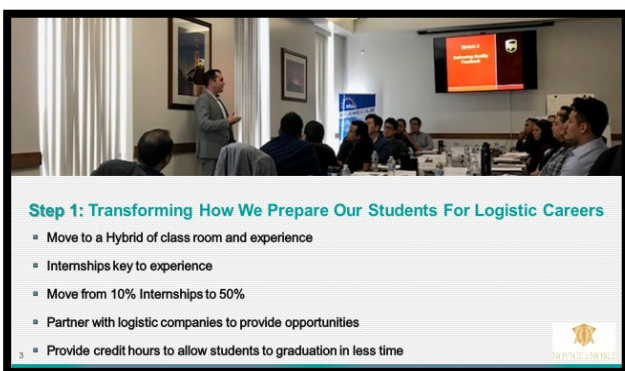
She continued by highlighting a couple of important areas where the future workforce will need to be better prepared. Companies are going to need individuals that have a technologically competent skill set in engineering, information technology, architecture, planning, critical thinking, and collaboration. “I think it’s important for us to look at our organization and determine that what we need are individuals who are confident and situationally adaptable. They can change and they can go with the flow of change,” said Lopez-Diaz. The future of transportation will need innovative thinkers, so that companies can bring to their clients that innovative technology. Soft skills are also important. Leaders will need employees who have self-awareness and know where their strengths and areas of opportunity are. “At HNTB, one of our core cultural elements is what we call the leadership characteristics. This is what we look for in all of our people,” said Lopez-Diaz.

She concluded her talk by stressing the importance of focusing on how we attract talent as we think about the jobs of the future. Employers will not be able to simply recruit the way they have always recruited. They have to think of innovative ways to attract talent. Solving the workforce shortage today will require a diversity and inclusion focus on how we will solve our issues. The advancements of technology will send more people behind computers. Recruiters will have to be more deliberate about communication and engaging with each other. It is vital that companies invest in upscaling their workers. “Partnering with educational organizations, to help develop curriculum. Engaging the workforce to be excited about transportation. Most of

our young professionals that we need in the future don't think about transportation as a societal need." This is something we need to focus on as partners.

Nicholas Kocek, Experienced Executive Operations Officer and a Certified John Maxwell Coach, Trainer and Speaker

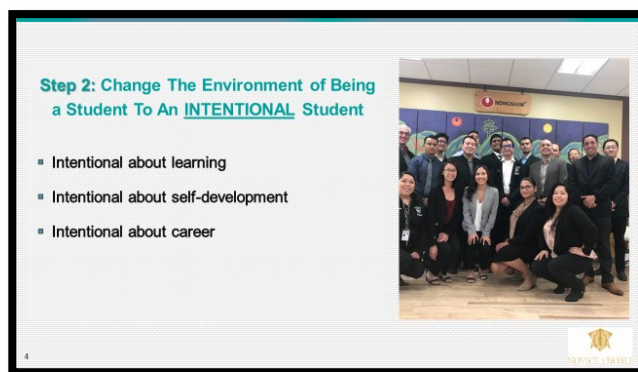
Moving the conversation forward, Nicholas Kocek, a certified John Maxwell Coach, Trainer and Speaker, discussed the ten steps to the future of employment in logistics. Kocek believes these ten steps show us how academia and the logistics community can learn from each other through collaboration with the goal of finding and onboarding new talent. "I was with UPS for 38 years and had a great career. East Coast and West Coast, most of it in operations and industrial engineering, HR and all that good stuff," said Kocek. After he retired, he met with the president of UPS and started an intern program called Novice2Noble. The internship program provides credit hours, to incentivize students to not only network and have an internship, but also learn from it. These ten steps are based in what Nick has learned thus far from the Novie2Noble interns.



Step one, transforming how to prepare our students for logistics careers. Students in the program provided the following feedback – more hybrid classes; meeting on a Monday and the rest of the week going to the workplace; learning about logistics and engineering functions; and learning more human resources functions. "The one thing that I understand working with this university is that the talent pool is amazing. In Cal State San Bernardino, all

the Cal States, the talent pool is amazing," said Kocek.

Step two is changing the environment of being just a student to an "intentional student". In other words, making sure the students are intentionally there, and want to be there. They are mindful and intentional about their decisions. "You have to have a timeline, you have to know exactly where to go and when you're doing it. We have to encourage that with the help from academia; students need encouragement to be intentional about everything they do, especially with self-development," said Kocek.







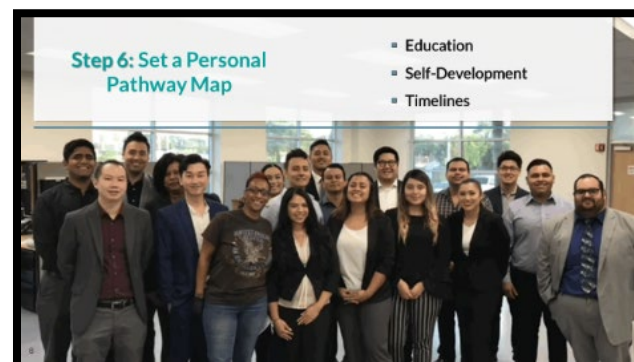
In step three, Novice2Noble calls their student interns, Driven Positive Disrupters. The program encourages the students to be positive, to disrupt, and to be driven. In today's fast paced world, in order for students to compete and excel in their workplaces, they need to be ready to move quickly, develop new systems faster, and challenge the status quo.

Step four is all about networking. Students are encouraged to join an association, or a non-profit. They teach them the importance of networking. "You can't have enough networking. Network, network, inside the organization and outside the organization. I think it is just as important both ways," said Kocek.




For step five, the interns learn how to interview. This is an important part of the intern process. Within 12 weeks, students need to have four interviews inside of the organization. The students must seek out leadership and interact, and learn how to develop their skills, this is all a part of the process.

As part of step six, the interns are asked to create a career map to set a timeline for their education and self-development. "Get an intern position, volunteer for a non-profit, achieve your degree, join a professional organization, secure your position, become a board member of a non-profit, get to the next level, enroll in your masters, and keep going and going and going. Map it out," said Kocek.



**Step 7: The Multiplier Effect**  
Teach – Coach – Give Back

- Help Teach a class
- Mentor a classmate
- Volunteer in the community



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In step seven, the interns help teach a class, mentor, or volunteer in a community. By volunteering and mentoring, these students gain a ton of experience and make new connections along the way. Looking back at step four, this is a great way to network.

Step eight is called stretching the rubber band. This analogy is used to describe how far the program can stretch the students. Have them accomplish things they think are impossible: joining a non-profit; going to school full-time; having a part-time job; volunteering on weekends.

**Step 8: Stretch the Rubber Band**

- Do more than you think is possible
- Don't Procrastinate
- Take Initiative
- Build up others



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**Step 9: Learn Financial Discipline**

- The Rule of Compounding
- Tools to save
  - 401K
  - Real Estate Investment
  - Limit your student loans
  - Limit your credit card debt
  - Make your own coffee
  - Make your own lunch

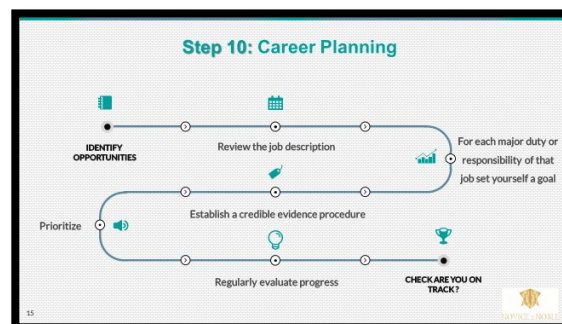


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Step nine is learning financial discipline. Many of these students come out of school with financial debt and might not have been taught the tools needed to effectively manage their money. "Some of that debt may not be needed because you know what, I go to Starbucks every day, that's five bucks; I go out for lunch, that's 12 dollars; that's 17 dollars total each day. I multiply that by five days a week for 52 weeks. What

could you do with that money?" Teaching them financial discipline when they're 20 years old will help them when they get into an organization.

Step ten is career planning. Once they get into an organization, what does that look like? This step teaches students to think about when they get that job, how do they master it and the steps to take to move up within an organization.



This ten step process has proven to be very effective. "We have had amazing success with the talent from this university – 14 have full-time careers, ten are more likely in the next six months, and they all have proven to be top performers within months in the organization," said Kocheck. Included in these interns are six from Valley College in business development

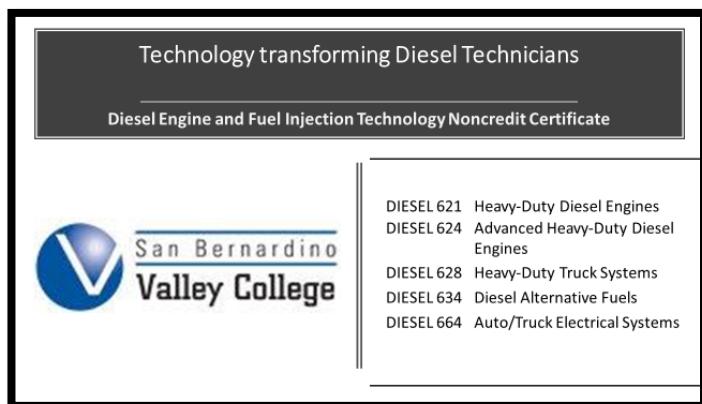
careers. Between all of them, they have accumulated over \$4.2 million in sales. This program teaches our students to be driven positive disrupters for change within this industry.

Kenny Melancon, Assistant Professor, San Bernardino Valley College

San Bernardino Valley College plays a significant role in developing the next generation of diesel mechanics into electric technicians. Professor Kenny Melancon was hired by San Bernardino Valley College in 2012 to manage the Heavy-Duty Truck Department. Since his hiring, he has brought in new technologies with the support of trucking industry companies. “When you heard the word diesel years ago, it was pretty much a dirty word, everything was heavy. The thought was they are greasy, dirty, work with big parts, expensive, and black smoke. The list goes on and on,” said Melancon. The definition and terminology of diesel mechanics are changing with the advancement of technology. It was previously mentioned that a large portion of our workforce will be retiring and the same goes for diesel mechanics. The new wave of diesel technicians are coming in and they will need a mentor as Nicholas Kochek discussed.

“The next generation of professionals will need new skill sets to adapt to the technological advancements,” said Melancon. A few examples of the technology the new technicians will be working with include:

- On Guard Collision Mitigation Systems
- Adaptive Cruise Control
- Forward looking cameras for lane departure
- Mobile communication platforms
- Roll Stability
- Anti-lock Braking Systems
- Engine Control modules
- Body control modules
- Automatic Transmission Control modules



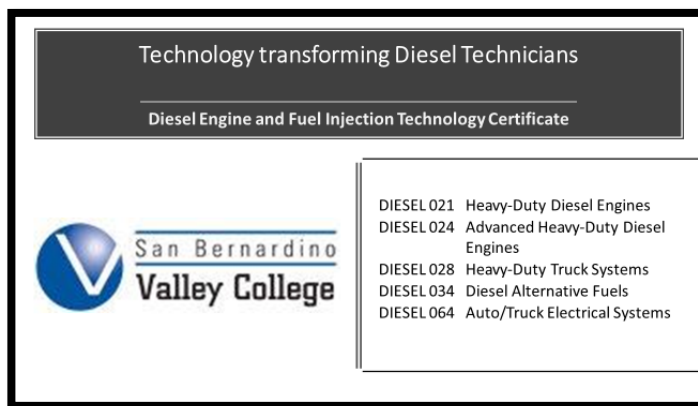
It is not only the truck cabs that are becoming more intricate, but the trailers come with ABS controllers and tracking systems. The controller is used for refrigerated units that run on shore power when the trucks are parked at the loading dock. This translates into inverted/converted technology. “So, the diesel mechanic is now a heavy/medium duty diesel technician. They have a very strong

background in multiplexing, electrical diagnostics, electrical theory, and specialize in their field.”

Currently only CNG (compressed natural gas) or electric trucks are on the market, diesel is no longer available. Therefore, the new wave of technicians will need to know and understand CNG in addition to electric vehicle technologies. This includes being certified to perform tank inspections, and CNG motors. The heavy/medium duty truck technician, CNG specialist, and electrical engineer are now all rolled into one technician.

San Bernardino Valley College is focusing on these skills and offers a diesel engine and fuel injection technology certificate that gets students into the industry working, as well as continuing their educational career. In addition, they also offer a non-credit certificate for students. “We know there are people out there that just can’t afford to go to college and we give them the opportunity. All they have to do is

register, come to class and sit right alongside the student that is getting this technology certificate. They are paying for a certificate to go towards an associate degree,” said Melancon. This certificate allows the student to be in the same class, get the same knowledge and opportunity as someone that is paying. Once they pay, they can give the official certificate and credits towards their associate degree.



Valley College is providing students with the skills needed to adapt and is transforming diesel technicians for the new era of zero emissions vehicles. The new technicians will need to be experienced in electrical assessments and high voltage applications. There are now 700 volt applications used in vehicles, and technicians will need to know how to work on those. Valley College is also working with Rio Hondo College on the Volvo LIGHTS Project. “The Volvo LIGHTS Project stands for Low Impact Green Heavy Transportation Solution. We are writing the curriculum for the industry to bring students/technicians up to speed on how to work on these vehicles safely,” said Melancon. The certificate Valley College offers for the heavy/medium duty clean vehicle technology also teaches the AC (Alternating Current) and DC (Direct Current) repairs of the electric motors and high and low voltage applications.

Recommendations from the Center of Excellence (COE) states employer demands for electric vehicle technicians is challenging to quantify using traditional labor market data and employer job posting research. “What that means is, the literature review shows that electric vehicles will enter the market as soon as 2020, but there are very few mentions of the demand for electric vehicle skills across California over the last 12 months. There have only been 23 job postings between September 2018 and August 2019.” Employers are hiring and training from within their companies, rather than hiring new electric vehicle technicians, looking to join the workforce. This is not to say that electric vehicle companies in California are not seeking more



workers. They are, but the majority (86%) of these jobs are non-service technician jobs. Companies are not focusing on what will be needed in the future, and it is possible they will not be prepared. According to Melancon, the labor market demand for mechanics working specifically on fully electric trucks reflects this. “The COE recommends that local colleges identify and collaborate with employers to discuss their future hiring needs and training requirements for their electric vehicle workforce.” If things continue the way they are going, those industry positions will not get filled. Melancon invited more people to attend his department’s advisory meetings to provide suggestions on how to best disseminate this information to the industry.

### Teri Fisher, CEO and Managing Partner, Insight Strategies

Closing out this dialogue was Teri Fisher, CEO of Insight Strategies. Teri is an acclaimed consultant, facilitator, executive coach, author and speaker, and is known for integrating theory, expertise, and real-world business practices to her engagements. Ms. Fisher is recognized in the areas of Talent Management; Succession Planning; Strategic Initiatives; Leadership & Influence; Organizational & Interpersonal Communications; Team Alignment; Performance Management; and Mediation/Conflict Resolution. “So, as an organization transforms and change, so must its people. As an organization strives to be relevant, so must its people,” said Fisher.

Insight Strategies has been able to see the transit sector evolve since 1994. Today 50% of their client base is in the public sector transit. “One of the more notable events within the industry recently was TNC’s – transit network companies. The onset of Uber and Lyft coming into the space of the transit industry.” The industry was not prepared for this change and it was a wakeup call. Now that TNC’s have come into the picture, transit agencies have to compete for riders, and they have to compete for dollars.

We are on the brink of a new decade. We have come so far in a short amount of time. We used to have elevator operators, switch board operators, gas lamp lighters and milk deliverers. This was not that long ago. “Now, fast forward to the present, let us just come up to today right now. The jobs that didn’t exist even 10 years ago, customer experience officer, social





media manager, chief equity officer, there is a chief innovation officer – these jobs did not exist,” said Fisher.

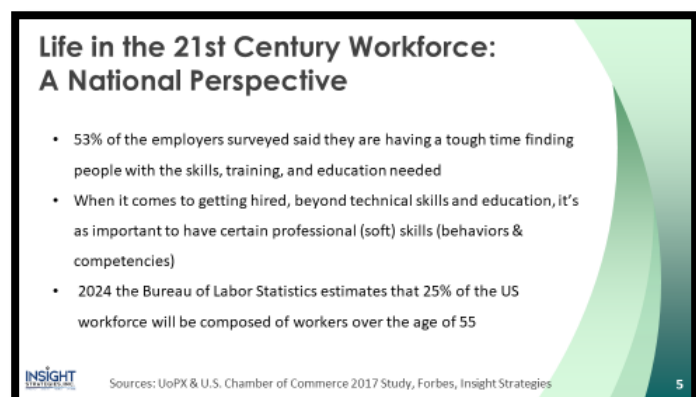
LA Metro was the first to create the Customer Experience Officer position and now those positions are popping up everywhere because it is all about the customer experience. Another new position is the Innovation Officer. Companies have to start recruiting for

these new positions and think about the skill set needed. They have to look through a brand-new paradigm.

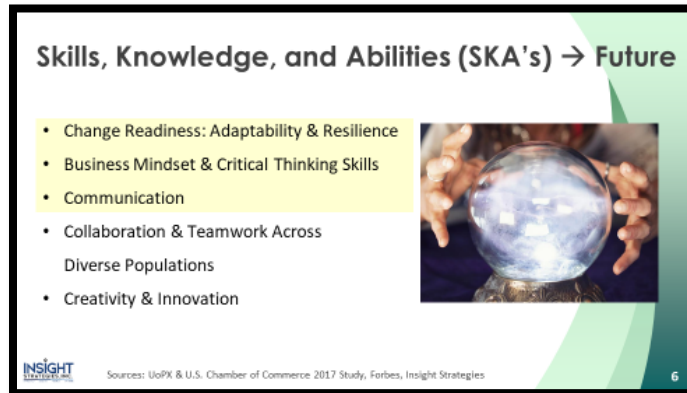
“Now we are going to look forward, what do we see? When we look at the future, how do we predict and prepare so that we are not caught off guard again?” asked Fisher. As a consulting and training company, Insight Strategies takes several things into consideration when trying to prepare for the transportation sector’s future. They use their own experience, look at what they have seen, what is evolving, and where the trends are headed. They also observe the financial and customer trends of the industry. “Competency research, it is like strategies, our own research based on what we know to be true about what creates success in an organization towards the future.” Insight Strategies has collected research from the Pew Center, Forbes, and the U.S. Chamber of Commerce to make informed decisions on the future competencies and skills in the workplace. Furthermore, they have monitored generational shifts. The transportation industry is going to be ahead of the curve in terms of retirements.

Once the data had been analyzed they went door to door to local transit agencies and offered their services to help with succession planning. “Leadership development has been popping up for the last few years, but succession planning, talk about high potentials. Who is going to be filling that executive turnover that was referred to in this session?” It is about readiness, it is about making sure you are treating people within the organization who are the future leaders special.

Fisher then addressed life in the 21<sup>st</sup> century workforce saying, “53% of employer surveys said they are having trouble finding people, hiring, training, skilling, educating – raise your hand if you can relate to that.” It is not only the technical skills that are needed, it is the professional soft skills that are missing as well. Technology has overloaded us with



information, and we are losing sight of connection.



Fisher highlighted the top five skills that Insight Strategies found in the research, focusing on the first two – Change Readiness, and Business Mindset & Critical Thinking Skills. An individual can work on these skills and try to prepare themselves as much as possible for the future in order to remain employed. However, what really helps is when the organization

insists upon it through its culture, by putting it on performance evaluations, and embedding it into their values. That is what is going to make a difference.

For the first skill, adaptability means being able to shift gears when the context calls for it and responding accordingly. Furthermore, resilience is someone who possesses the ability to bounce back in the face of adversity, obstacles, disappointments, and failures. Then, there is business mindset and critical thinking. Connecting what you do to the impact on customers, clients, and to the bottom line. This includes an objective analysis and evaluation of an issue or problem to be solved. “So what we find, the leaders and public sector organizations that are most successful are the ones that come with the private sector mindset, protecting the taxpayer dollars. Not relying upon local, regional, federal funding to pull off what you want to pull off.”

### Moving the Dialogue Forward: Ideas from the Participants

After the presentations, the Dialogue attendees discussed the ideas presented and worked together in groups to discuss solutions to move it forward. The top three ideas from each table have been categorized and summarized below.

**Disseminate information to community and industry.** Many of the participants talked about how we need to find a better way to disseminate all the information to the community.

- Need more input from industry advisors on how to disseminate this information to the public.
- Distribute videos and transcripts of Dialogues to community, we need a forum with broader reach.
- Have all information available on a public platform to access, or develop email list of industries who need this information and disseminate it to them.

**Workforce retiring.** A huge portion of our transportation workforce is retiring over the next decade, some of the participants were discussing how we prepare for that.

- Baby boomers retiring and we need to start training the next wave of professionals to step up, fill in those gaps and learn all that knowledge that will be disappearing.
- 40% of the transportation workforce is retiring over the next ten years, the new workforce need to be taught from young age the skills needed to succeed in this industry.
- The workforce is changing. We need to think of innovative ways to retain and train employees.

**Ten steps to change.** There were a number of attendees that were very interested in utilizing the ten steps Nicholas Kochek talked about to move today's discussion forward.

- We should supply students with networking skills, use the ten steps, have our students develop a career path.
- Use the idea of positive disruption to move today's discussion forward. Shake things up in new innovative ways.
- It is important to urge students to join an association, or a non-profit and teach them the importance of networking, many of them do not learn these skills.

*The Leonard Transportation Center (LTC) at California State University San Bernardino (CSUSB), presented a bi-monthly dialogue series on topics relevant to the future of transportation in the Inland Empire. The series, which was open to the public, was sponsored by HNTB Corporation and was held every other month starting in February 2018.*

*Dialogue topics ranged from understanding the current mobility dilemma and its causes to potential solutions like congestion pricing, transit; emerging technologies such as autonomous and connected vehicles and new ways of funding transportation infrastructure. Attendees had the opportunity to hear from transportation experts and engage in vigorous discussion about the transportation challenges facing the Inland Empire.*

#### **About Leonard Transportation Center**

*The Leonard Transportation Center (LTC) at California State University, San Bernardino opened in 2006 with a focus on regional transportation needs. The vision of Bill and Barbara Leonard was to create a center that focuses on the unique transportation opportunities and challenges the Inland Empire faces. Today, the LTC is working to expand its research and student engagement programs. Focal points include transportation management and governance issues, development of new technologies, and transnational studies. Their vision is to work collaboratively to seek solutions to assist residents, businesses, government and nonprofit agencies, and international partners to work together on improving sustainability and quality of life in the Inland Empire. For more information, visit.*

#### **About HNTB**

*HNTB Corporation is an employee-owned infrastructure solutions firm serving public and private owners and contractors. HNTB's work in California dates back to its founding in 1914. Today, HNTB continues to grow in size and service offerings to clients in California from seven office locations, currently employing more than 350 full-time professionals. With more than a century of service, HNTB understands the life cycle of infrastructure and addresses clients' most complex technical, financial and operational challenges. Professionals nationwide deliver a full range of infrastructure-related services, including award-winning planning, design, program management and construction management. For more information, visit [www.hntb.com](http://www.hntb.com)*

#### **About San Bernardino International Airport**

*Conveniently located in the heart of the Inland Empire, close to major freeways and just 60 miles from Los Angeles, San Bernardino (SBD) International Airport is strategically positioned to meet growing aviation activity, including cargo, business aviation, general aviation, and commercial airlines by providing competitive rates for aviation companies and local businesses looking to stretch their wings and expand their horizons. With extensive stretches of pristine runway and acres of prime land available for aviation development, SBD International Airport is ready to help our community and region reach new destinations.*