ITS PCB Community College Workshop

Session 2: Thursday July 2, 2020 | 1:00 p.m. -2:30 p.m. ET

Andy Berthaume (U.S. DOT) summarized the knowledge, skills, and abilities (KSA) identified in the first sessions. Kara Chisholm (U.S. DOT) introduced the goals of this session.

Tom O'Brien (California State University, Long Beach) shared his perspective on the alignment between community college programs and the ITS workforce.

- Freight ITS sector is using a phased approach; e.g., integrating active steering and LiDAR sensors before full automation.
- Management-side ITS in freight includes financial tech (e.g., payment systems) and telematics (monitoring driving behavior).
- Covid-19 is causing accelerated tech adoption, disrupted demand, adoption of digitally shared documents, and redefining/reinforcing communication and collaboration skills in freight ITS.
- ITS will be embedded in all levels of the occupations "pyramid" – from warehousing and transportation staff to management.
- It is important to consider equity issues in the ITS workplace. ITS jobs, like most high technology job, suffer from skills, identity and spatial mismatch, which hurts both employer and community college graduates.
  - Skills mismatch: community college grads do not have the skills necessary to work in ITS.
  - Identity mismatch: students/graduates do not see their identities reflected in the ITS workforce.
  - Spatial mismatch: ITS jobs are located away from low-income neighborhoods and are not accessible by transit/without a personal automobile.

Bob Koch spoke about Community College of Allegheny County's Automotive Technology program.

- Bob and colleagues taught a project-based course drawing from data analysis, auto technology, and mechatronics in Spring 2020. Students came from each discipline and learned transferable skills from each other through hands-on experience.
- The course covered electricity basics, programmable logic controller (PLC) basics, sensor data, and auto systems.
- The original plan was to use a connected Raspberry-Pi controlled "Donkey Car" to navigate a course, but they were unable to do so due to Covid-19.
- The course was intended to prepare students for the ITS workforce through:
  - Exposure to data analytics in a transportation setting
  - Introducing students to automotive sensing technology
  - Writing and executing a simple PLC program

Missy Blair described Pima Community College's Autonomous Vehicle Driver & Operations Specialist certificate program.

- 12-credit, program to instruct CDL drivers in ITS skills, including courses on OSHA 10, logistics/warehousing, computer information systems (hardware), advanced industrial technology-electronics, and autonomous vehicles (AVs)
- New program in line with college-wide emphasis on AI, automation, cloud computing, and mobile tech
- Also in line with reorganization and college-wide partnerships throughout Sun Corridor
- Developed partnership with AV trucking startup TuSimple
  - Collaborated with administration to expedite program delivery at the request of TuSimple
  - Priority hiring for program grads at TuSimple
  - As tech evolves, certificate program evolves
- Challenge to implement due to the cross-disciplinary nature of the program: different deans and reporting lines

Marcy Drummond (Los Angeles Trade-Technical College) discussed her research on ITS jobs in the transit industry and aligning community college curricula with those jobs.

- Certificate and Degree Programs
  - Approach driven by competency models: embed ITS in multiple programs rather than creating distinct program
  - Programs becoming more tech focused and less mechanics focused; more project-based
- Transportation Youth Academy: engaging videos to explore careers, project-based activities
- Transit and Ground Transportation Industry/Labor Market Research and Employer Engagement: identified 13 high-demand and hard-to-fill transit occupations, and gaps between existing programs and employer requirements
- LA Metro Joint Apprenticeship Program – Rail Vehicle Maintenance Technician for incumbent workers
- Targeted programs for historically underserved populations: transportation workforce readiness program for entry-level positions at transit agencies that may not directly use ITS but will be impacted

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Audience question and discussion topics:

- Student tracking: PCC tracks students through continuous contact with TuSimple. LATTC does an annual reevaluation of ITS skills. CCAC connects with employers through advisory committees.
- Overcoming bureaucracy: All panelists found that information on workforce need from prospective employers, or other means of showing demand for ITS jobs, helped to expedite bureaucratic processes.
- Online instruction during and after Covid-19: Panelists had already started shifting some courses/components online before Covid-19, and anticipate that will continue and accelerate going forward.

ITS PCB Team encourages all attendees to consider: What additional information could our team provide that would help community colleges support the creation of ITS educational programs?