Florida Department of Transportation
TSM&O Workforce Analysis
Research Showcases to Identify Gaps/Solutions

• 2018 Research Showcase
  • Brought Florida’s research universities together and highlighted the ongoing research, mainly on Transportation Systems Management & Operations (TSM&O), Intelligent Transportation Systems (ITS), and Traffic Operations.

• 2019 Research Showcase
  • The next Showcase is planned for April 11-12, 2019, at the FDOT Gainesville Materials Office.
  • The focus will be on Emerging Technologies, Connected and Automated (CAV) Vehicles, TSM&O, ITS, and Traffic Operations.
  • Planned discussion topics: workforce development, preparing students for careers in TSM&O, ITS, and CAV; interdisciplinary research; and partnering and outreach.
Workforce Gap Analysis and Current Needs

- **Gaps exist** with regard to project implementation and deployments.
- Institutions could **re-evaluate the course curriculum**.
- **In addition to Academics, Fieldwork and hands-on experience** should be emphasized in the following areas:
  - Traffic signal systems and traffic signal controller functions
  - ITS equipment design, construction, operations, and maintenance
  - Construction engineering and inspection
  - Project and contract management, work program, and financial management
- Entry-level engineers **need both technical and managerial inputs**.
- Training should emphasize **practical applications**.
- **Transportation is interdisciplinary**; requiring soft skills, as well as specialized functions, such as in a Traffic Management Center (TMC) with networking/soft skills.
Opportunities to Bridge the Gaps

• Create a platform to **share knowledge** – FDOT conducts Research Showcases and explains to the institutes/faculty about the current FDOT and ITS and industry workforce development opportunities.

• Capture knowledge and experience **through webinars, workshops**, etc.

• Develop **sustainable training program initiatives** – the Florida Department of Transportation (FDOT) created a TSM&O training program (STEP).

• FDOT participates in and **contributes to Peer Exchanges, Pooled Fund Studies**, etc.
Focus Areas For Professional Capacity Building

- Workforce development may focus on these areas.
- FDOT Central Office (CO) works closely with the districts to provide training and other opportunities.
- Institutes and faculty are informed about these focus areas.
- Research projects emphasize implementation of the results.
- Lessons learned from deployments help with on-the-job training.
University Engagement and Partnerships

- Universities are encouraged to **participate in the implementation and evaluation of projects while working with the districts and the CO.**
- Research **results should have statewide usage:**
  - The Central Office promotes inter-university collaboration.
  - Aids in knowledge sharing among districts through research.
- Emerging **CAV technology projects should consider industry interactions.**
- Attendees made several **recommendations covering a range of topics:**
  - Project selection and management.
  - Avoid project duplication and exchange information.
  - Collaboration on various research scopes.
TSM&O Strategic Plan, CAV Business Plan

• FDOT’s CAV Business Plan emphasizes:
  • Education and Outreach – regarding emerging technologies
  • Industry Outreach – technology readiness and partnerships

• The CAV Business Plan recognizes the need for partnerships with the industry to leverage Research & Development for successful deployments.

• The FDOT’s TSM&O Strategic Plan recognizes the need for workforce development both internal and external to FDOT.

• These plans leverage district participation to engage with local stakeholders including Metropolitan Planning Organizations (MPOs).
Statewide TSM&O Excellence Program (STEP)

• Statewide TSM&O Excellence Program (STEP)
  • Goal is to build technical capabilities in TSM&O.
  • Florida specific courses available for the FDOT, Local Agencies, Consultants, Contractors, etc.
  • Describes plan for sustainable training delivery and management through the University of Florida.
# STEP Training Updates

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Table Key: O = Activity Planned; ☑ = Activity in progress; ✓ = Activity complete; N/A = Not Applicable
STEP Training Access

Learning Curve

• ITSFM Viewer
• ITSFM Maintainer
• Traffic Signal Training
• Fiber Design for ITS and Signalization Projects
• ITS CEI: Closed Circuit Television Cameras Module

TEO Website

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• Fiber Design for ITS and Signalization Projects
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