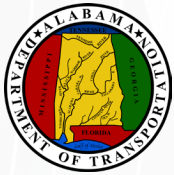


Alabama Transportation Management Center Workforce Development Program



By Alabama Department of Transportation
4/7/2024

Benefits Statement

The Alabama Department of Transportation's (ALDOT) partnership with the University of Alabama Huntsville (UAH) offers internships at Transportation Management Centers (TMCs), cultivating interest in the transportation field among students. Since 2018, the program has enhanced workforce readiness, technical skills, and leadership development. Interns engage in real-world traffic projects, receiving mentorship and career advancement opportunities. Outcomes include successful transitions of interns to full-time roles, with benefits to ALDOT's operations and public road safety. The initiative saves time and money by fostering homegrown talent and improving traffic management efficiencies.

In this case study you will learn:

1. About the collaboration between ALDOT and UAH providing hands-on internships at Transportation Management Centers, exposing students to real-world transportation operations.
2. How interns gained technical skills, soft skills, and leadership qualities, preparing them for careers in transportation through practical experience and mentorship.
3. How active student engagement and successful transition of interns to professional roles demonstrate the program's effectiveness in workforce development and its contribution to transportation safety and efficiency.

The Transportation Workforce Development (TWD) Program, a collaborative effort of the Alabama Department of Transportation (ALDOT) and the University of Alabama Huntsville (UAH), was established to generate interest among young adults in the transportation industry by offering student internships at the Transportation Management Centers (TMCs) co-located with university campuses. The part-time student internships at the TMCs expose university students to career opportunities that exist in transportation operations, enhance student work-readiness, and help them develop transportation-related technical skills, life skills, and leadership capabilities. The TWD Program began in 2018 and is funded by the ALDOT and administered through UAH.

PROGRAM OVERVIEW

ALDOT and UAH opened the Huntsville TMC in late 2018 after developing a strong partnership with UAH staff. In the initial agreement, UAH provided ALDOT with space on the university campus to host the TMC, while ALDOT provided the technology, software, and equipment to operate the TMC. As part of the agreement, all technology and equipment are available for university students to observe and/or interact with, generating learning opportunities for those interested in transportation management and operations. Once established, the TMC slowly grew its presence on the campus by offering tours of the TMC to UAH transportation engineering classes, maintaining an open-door policy for UAH students, and by providing student internships. ALDOT has found success in their internship program by providing students with real-world traffic operations problems to solve, allowing students to take ownership of their tasks, and by remaining flexible on work schedules to accommodate class schedules and class projects. Through strong continued partnership, including a strong relationship with Dr. Michael Anderson, the current Department of Civil Engineering

Chair, the university identified available space for the TMC to expand its operations. Dr. Anderson and other university staff also help connect potential student employees with TMC staff.

The TMC continues to provide data to university faculty for various research activities and for use during course projects, and works with student employees to enhance their data analysis skills. An open-door policy at the TMC extends its reach to all interested students and allows all students to gain exposure to the work completed with the TMC and to key technologies, including a live signal cabinet and Intelligent Transportation System (ITS) devices.

TMC INTERNSHIP

The Huntsville TMC hires student interns as part-time employees with a minimum 20-hour workweek. Students receive hourly-rate compensation and receive any required equipment or materials from ALDOT. Materials may include safety vests or steel toed boots for site



Figure 1: Student interns diagramming traffic signal phases and working with intersection light boards within the TMC's traffic signal test cabinets.

visits. If a vehicle is required to reach a site, the TMC provides access to a vehicle through ALDOT's fleet.

TMC staff view the internship program as an opportunity to provide students with real-world experience needed to progress their career. On day one, TMC staff ask students to articulate what they hope to gain from the internship, and students have mentioned a desire to make professional connections, gain opportunities to meet with consultants in traffic engineering, and have access to traffic engineering projects and tasks. Staff then work with each student intern to help them achieve those goals. The TMC views itself as one stop along the student's career journey and emphasized their role in helping student's develop technical skills, soft skills, and leadership qualities as well as a role in exposing students to available career opportunities. TMC staff engage student interns in all aspects of real-world projects to help develop their technical skills. For example, when ALDOT asked the TMC to identify a way to reduce 14-mile queues occurring due to a local bridge inspection and repair project in Limestone County AL, TMC staff engaged interns during the review of data and when discussing solutions. Student interns suggested changing the project lane closure schedule to limit queuing, and their solution was partially implemented. Student interns are also engaged in signal location review, data analysis, creation of KMZ files, which are Google Earth files that include latitude and longitude coordinates, and field visits, all of which provide a real-world understanding of transportation operations and management.

To help students navigate career options, TMC staff provide informal mentorship and connect students with external internships or career growth opportunities. Staff expressed interest in formalizing mentorship opportunities in the future. Students and young professionals can engage Alabama DOT's formal agency rotational program known as the Professional

Civil Engineer Trainee Program (PCET), where they rotate between different bureaus to gain exposure to career paths within government service. That includes exposure to the TMC disciplines as well as different engineering, technology, and design opportunities.

Interviewees noted that students often have competing priorities. TMC staff work with students to help them balance their course schedules, exam schedules, and extra-curricular activities. Students are allowed to use down time at the internship to complete homework and may switch shifts with one another as needed. When students' complete homework during the internship, TMC staff engage with them to provide informal academic support and to highlight real-world applications of engineering theories.

ENGAGEMENT AND APPLICATIONS

UAH plays a critical role in engaging students and raising awareness about the program. The strong partnership between UAH and the TMC led to successful student hires. Those relationships continue to play a central role in identifying students that may be interested in and a good fit for the internship. The TMC's open-door policy allows students to drop in, ask questions, or apply if interested.

All interested students must apply through the Alabama state government application system. Opportunities are posted to the ALDOT website, Handshake (a UAH employment platform), and advertised through connections with UAH faculty. The application process is the same for part-time student internships as it is for full-time employees. It may take three to four months for an applicant to move through the process, from submitting the application to starting the internship. Students may remain interns for up to one year after graduation. If they chose to stay with ALDOT, the individual will typically remain an intern for up to six months before being promoted to a full-time civil engineering graduate with ALDOT.

RESULTS

TMC staff maintain contact with several past student interns and reported that multiple students transitioned from part-time to full-time employment within ALDOT and multiple students transitioned into private industry. Since the program started in 2018, 8 students have participated in the internship program, 3 students have transitioned to full-time employees at ALDOT following graduation, and 1 graduate stayed on as a consultant. However, outside of the TMC, there is currently no formal system in place to identify if the remaining interns continued into transportation management and operations fields or which types of employment they pursued (government, private, etc.). The goal of the TMC internship program is to help students progress their career, regardless of where that occurs. Staff work with each student intern to figure out how to help them achieve their stated immediate and five-year career goals.

The TMC reported strong anecdotal benefits from their connections with UAH, specifically noting the benefits gained from working alongside qualified student employees. For example, a reliable and engaged intern that took part in the internship program for two years, developed skill as a traffic analyst and contributed to traffic signal management scope meetings. During these meetings the intern connected with a consultant, and that connection led to a job offer post-graduation. The former intern now provides technical support to ALDOT on signal management and intelligent transportation systems (ITS) project development teams. Because of the quality of its staff, including student interns, the TMC can provide strong data to the public, which allows partners including enforcement agencies, emergency management professionals, local government, and the public to make informed decisions about roadway operations. The information provided helps enhance safety and efficiency of Alabama roadways.

LESSONS LEARNED

Relationships are key and TMC staff noted the importance of investing time early to develop those relationships, specifically with Civil Engineering department staff. Specifically, they noted:

- **Engage partners throughout the process.** Be transparent about the TMC's role, how the TMC will benefit students, how the TMC will benefit the university, and the benefits to the TMC from the partnership.
- **Establish relationships and leadership buy-in.** Build trust-equity with leadership and partners by showing them that you understand their needs and by demonstrating how the TMC will help them achieve their goals. Invite leadership to visit the TMC and show them the work completed at the TMC. TMC staff recommended sharing the TMC's goals and outcomes with leadership to ensure transparency.
- **Develop relationships with other professional groups such as enforcement professionals, emergency management, and local officials.** Ensure that all partners are aware of what occurs within the TMC and how the TMC benefits their work function. Facilitate open lines of communication in case there are areas that need attention or improvement.
- **Coordinate with stakeholders when developing co-located facilities.** Focus on gaining buy-in from partners, including local partners, government, and related organizations, from the start. Use strategic messaging to emphasize the goals and intended benefits of the co-located TMC. Try to show how the TMC will benefit each of those partners and engage them in the process to ensure their needs are met. If partners see the benefits of the TMC work on their own work functions, they are more likely to support its existence and expansion.
- **Create more opportunities for interns to connect with other parts of ALDOT.** By connecting students with offices across ALDOT, students broaden their understanding of the DOT's role in managing transportation for the residents of the state.