

# Industry's evolution prompts effort to diversify professional training

**Federal ITS program pushes a new way of thinking**

The transportation industry is constantly evolving. Probably few people are more aware of this than two men who represent the past and present generations of the transportation profession: Frank Turner, former administrator of the Bureau of Public Roads, and Tom Humphrey, recently appointed coordinator of the U.S. Department of Transportation's (USDOT) new Professional Capacity Building Program for Intelligent Transportation Systems (ITS).

Turner, who is considered by many transportation professionals to be the father of the interstate highway system, and his colleagues at the Bureau of Public Roads in 1956 faced the task of guiding the biggest transportation advancement in U.S. history. Building the interstate system, they realized, would require a whole new way of thinking about transportation, not to mention a whole new collection of people to practice that thinking.

Four decades later, Humphrey and USDOT officials now find themselves faced with the same challenge. They know that the successful deployment of ITS — the most ambitious mobility ven-

ture since the interstate system — will require a whole new way of thinking and a whole new breed of thinkers.

In response to this need, federal officials last year launched the ITS Professional Capacity Building Program, a five-year effort aimed at developing a cadre of professionals that will plan, design, operate and maintain ITS.

## Re-engineering the engineer

The program's central purpose is to create what Humphrey calls the transportation professional of the future — one with more diverse skills than before. Along with traditional civil engineering skills, these professionals will have expertise in such areas as computer science, systems integration communications, political science, business, social sciences, human factors, economics and environmental sciences. They must, more than ever before, be eager to innovate and discover new solutions to transportation problems. It's natural then that the nation's research universities — institutions where innovation and discovery are commonplace — will be part of this effort

"Universities will play a very significant and central role in this program," Humphrey says. "They will be critical to training the next generation of leaders in this field:

This is a view that Turner held 41 years ago. Faced with the herculean task before him, Turner looked to the nation's universities (including Texas

A&M University, where he earned his civil engineering degree in 1929) and recruited the best and brightest engineers he could find to help build the interstate system. He also set up postgraduate training programs to prepare engineers for the new challenges they'd face in a rapidly changing field.

The Professional Capacity Building Program's approach is

properly train tomorrow's professionals. While the second track will eventually involve educational components for elementary through high schools, the initial emphasis will be at the university level.

At the Texas A&M ITS Research Center of Excellence (RCE), Dr. Tom Urbanik and others are busy determining how best to support Humphrey and

---

Leaders of the ITS movement have

---

for years said that the future of U.S.

---

transportation depends on a new

---

kind of transportation system. A

---

growing number of those leaders are

---

now recognizing that a new kind of

---

transportation professional is every

---

bit as important.

similar. Humphrey says it will involve efforts on two tracks: training and retraining the professionals already in the field, and developing curricula to attract and

the program. Urbanik sees the RCE program as a logical starting point,

"The RCE program offers a unique opportunity to leverage



innovative research and professional capacity building in order to support the development of a truly successful ITS program," says Urbanik, the director of the Texas A&M RCE. "It can make early, vital and effective contributions toward fulfilling the Federal Highway Administration's goals for ITS professional capacity building?"

## Creating synergy

Program directors from the four program schools (Texas A&M, Virginia Tech, the University of Michigan and the University of Minnesota) recently met with Humphrey and other academic leaders in Washington, D.C., to help define the role of American research universities in professional capacity building.

Urbanik and his colleagues say that doing the job will require a shift toward a more collaborative approach by all four schools. By forming this core consortium, the directors believe they can more effectively leverage their efforts and produce more meaningful results through the synergies they create. And because the demand for professional capacity building is greater than the supply that can be offered by only four universities, the directors envision the eventual formation of a broader national consortium of research universities, with the RCE universities providing leadership and coordination for the collective effort.

One result of this joint effort involves the development of a shared research vision. The RCE directors also envision the development of interdisciplinary educational programs linked to research activity. Coordinated continuing education activities might include summer research fellowship programs and distance-learning seminars.

This link between transportation and education, the directors

The collage contains several overlapping advertisements:

- 5-4000**: A large number at the top left.
- 5350-Industrial Trades**: Advertisement for AAA APPLIANCE, now hiring out, including self-starting, drug free individuals for our Parts Department at 7756 Northcross.
- AC COMPANY hiring service**: 3yr light commercial/tech exp req'd. Good pay/benefits. Applicants w/ professional appearance. Ground. Call 928-8184.
- \* A/C INSTALL**: Experienced, must look, good driving. Only workers only. Benefits. Apply 677.
- AC INSTALL**: Needed for hvac. Must look and GFC. Free wages, working env. 728 S. 1st St.
- A/C SERVICE**: Willing to travel. AC.
- Expert: oppo: AC**: Advertisement for an AC expert.
- Transportation Engineers Needed**: Exciting opportunities now available in DOTs across America for transportation professionals eager to meet the challenges of a rapidly changing field. REQUIREMENTS: Bachelor's degree in engineering. PREFERRED SKILLS: Additional expertise in computer science, systems integration, communications, political science, business, social sciences, human factors, economics and environmental sciences. Only qualified applicants need apply.
- 5350-Ind**: Advertisement for experienced persons for top pay comm. Top. Experience patching needed. Experience in starting depends.
- Must have own**: Apply in person. 1435, see Dan.
- MERCIAL DRYWALL**: Full experienced. PAINTERS TAPE FLOAT. 258-8988. extension 8 30am-4 30pm.
- COMMERCIAL GLAZER**: Will train. Dependable and have. Apply M-F.
- AD LIT**: Looking for experienced and enterprising. 1200 East.
- SOUTHWEST TEXAS STATE UNIVERSITY**: BANNER PROGRAMMER. 185.

Leaders of the ITS Professional Capacity Building Program say that transportation engineers will soon need to know about a lot more than just civil engineering.

say, will ensure that faculty are more keenly aware of current developments and that course instruction and curricula are more relevant to a rapidly changing transportation profession. It should also prepare students to make significant contributions immediately after graduation.

## History repeats itself

In Frank Turner's day the notion of driving from coast to coast without stopping at a traffic light was revolutionary. So was the idea of financially compensating

homeowners who were displaced by a new highway's path. Will the Professional Capacity Building Program produce ideas to rival the progressive thinking of the late '50s? It's too early to tell. But one thing is certain — just as they were 40 years ago, transportation leaders today must be able and eager to challenge conventional thinking.

Leaders of the ITS movement have for years said that the future of U.S. transportation depends on a new kind of transportation system. A growing number of those leaders are now

recognizing that a new kind of transportation professional is every bit as important.

"We need to cultivate a whole new breed of professional," Humphrey says. "We're not entirely sure what that is just yet, but they didn't know exactly what the transportation professional of the future was in 1956, either."

For more information about the Texas A&M RCE and professional capacity building, contact Tom Urbanik at 409/845-1536 (e-mail: t-urbanik@tamu.edu).