MISSION STATEMENT

To conduct research in the transportation field with the goal of saving lives, saving money, and saving time. The Virginia Tech Transportation Institute (VTTI) develops and uses state-of-the-art tools, techniques, and technologies to solve large-scale and complex transportation challenges.

Tom Dingus
Director and Newport News Shipbuilding Professor of Civil and Environmental Engineering

Goals and Objectives Achieved for FY 2012

- Continue to conduct transportation safety research.

Goal Accomplishment:
- The United States Department of Transportation (US DOT) awarded funds in the amount of $3.5 million for a Tier 1 University Transportation Center (UTC) to be headquartered at VTTI. This is the first Tier 1 UTC for which VTTI has served as prime. Additional funds, along with matching funds primarily from the Virginia Department of Transportation (VDOT), will bring the total program at the Institute to approximately $14 million.
- The VTTI Center for Injury Biomechanics was awarded a $20 million contract with the Department of Defense as part of a consortium of universities (Virginia Tech will serve as the lead).
- Data collected from studies about specialized driving populations (e.g., truck drivers, teen drivers, and motorcycle riders) continue to allow VTTI to examine, from both countermeasure and policy standpoints, national transportation safety concerns such as distracted driving.
- Work, sponsored by NIH, Toyota, VDOT, and the National Center for Surface Transportation Safety Excellence, has been conducted to develop a teen driving program that involves real-time monitoring and two types of driving feedback: real-time to the teen driver and post-trip to the teen’s parents. Parents are also provided with targeted coaching tips to improve the teen’s driving performance with the ultimate goal of reducing teen driver fatalities.
- The Motorcycle Safety Foundation funded the first large-scale, naturalistic motorcycle study. The project is designed to explore motorcycle crash causation with the goal of developing crash countermeasures. The National Highway Traffic Safety Administration funded a complementary study that will include new lower-cost instrumentation to allow a larger sample of riders. Together, these studies will collect data from 260 riders over a one-year period.

- Establish additional collaborative partnerships to increase the diversity of VTTI’s research.

Goal Accomplishment:
- The recently awarded UTC comprises VTTI, the University of Virginia/Virginia Center for Transportation Innovation and Research, and Morgan State University. This consortium will be guided by a group of stakeholders that includes experts in the connected-vehicle domain.

VTTI 5-year Growth in External Expenditures

5-year Growth Rate: 19.2%

$0 $5,000,000 $10,000,000 $15,000,000 $20,000,000 $25,000,000 $30,000,000

2007 2008 2009 2010 2011 2012

Includes National Tire Research Center in 2012

$11,613,814 $15,914,924 $14,934,618 $17,393,069 $26,804,761 $27,900,383

Includes National Tire Research Center in 2012
In February, the Honorable Ray LaHood, Secretary of the US DOT, traveled to Virginia Tech to tour VTTI and meet with students, faculty, and staff who are conducting research aimed at reducing the number of injuries and deaths caused by distracted driving accidents.

VTTI has grown 100% since Fiscal Year 2009 and has become the second largest U.S. Transportation Research Institute. VTTI will soon comprise 350 faculty, staff, and students that support more than 100 projects.

Since 2001, VTTI has created more jobs in Montgomery County (400 direct and indirect) than any other private or public entity.

**Goal Accomplishment:**
- The Tier 1 UTC provides an unprecedented opportunity to solve a number of transportation problems by enabling the sharing of real-time information across vehicles and infrastructure elements. Robust communication between vehicles, infrastructure, and devices will enable the development of applications designed to address the U.S. DOT’s strategic goals of safety, state of good repair, economic competitiveness, livable communities, and environmental sustainability.
- VTTI has created a new group to conduct connected vehicle research. In addition to the UTC funding, this group has secured over $5 million in related contracts with a consortium of eight automobile manufacturers to advance the state of the art in vehicle safety and mobility by providing unprecedented real-time information to drivers.
- Using the Smart Road as a test bed, researchers have demonstrated the viability of relatively low-cost wireless communication systems for remote roadway communications. These systems have the potential to improve traffic flow, expedite roadway clearing, and reduce traffic accidents in high fog areas (such as Afton Mountain on I-64 and Fancy Gap Mountain on I-77) by detecting and communicating traffic conditions to drivers.
- VTTI researchers are developing adaptive eco-drive applications in the vicinity of traffic signalized intersections. The study is designed to reduce energy consumption and greenhouse gas emissions at signalized intersections by improving vehicle motility using real-time traffic signal phasing and timing data.

**Goal Accomplishment:**
- The inclusion in the UTC of a diverse student representation will foster education and workforce development.
- VTTI researchers provided testimony and findings about distracted driving before the House Subcommittee on Transportation Security.
- VTTI research statistics from seminal studies conducted for agencies such as the Federal Motor Carrier Safety Administration (FMCSA) about the dangers of texting and driving continue to appear in multiple national ad campaigns designed to educate the public that texting while driving is dangerous and often deadly.
- The FMCSA-hosted, VTTI-developed “CMV Web-Based Driving Tips” site provides commercial motor vehicle drivers with practical guidance about the safe operation of a heavy vehicle. This site has proven to be popular, gathering more than 100,000 views since its creation.

**Additional Accomplishments**
- In February, the Honorable Ray LaHood, Secretary of the US DOT, traveled to Virginia Tech to tour VTTI and to meet with students, faculty, and staff who are conducting research aimed at reducing the number of injuries and deaths caused by distracted driving accidents.
- VTTI has grown 100% since Fiscal Year 2009 and has become the second largest U.S. Transportation Research Institute. VTTI will soon comprise 350 faculty, staff, and students that support more than 100 projects.
- Since 2001, VTTI has created more jobs in Montgomery County (400 direct and indirect) than any other private or public entity.