technotes

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MARYLAND TRANSPORTATION TECHNOLOGY TRANSFER CENTER

Local Technical Assistance Program (LTAP)
University of Maryland at College Park

www.mdt2center.umd.edu

INSIDE:

SHA'S HIGHWAY SAFETY PROGRAMS

Pedestrian Safety

Pedestrian safety is an issue that affects the entire community; young and old, drivers and walkers, in the day and at night. Many unnecessary injuries and fatalities occur as a result of intoxication or inattentiveness of either the driver or the pedestrian. The roadways should be safe places for everyone regardless of their transportation mode. To reach this goal, laws related to pedestrian safety must be enforced without reservation, and citizens must be educated on the perils facing pedestrians and how they can help make the road a safer environment for those traveling by foot. Pedestrians, Walk Smart! Drivers, Do your Part!

Maryland Fast Facts:

- In 2008, 112 pedestrians were killed, accounting for 20 percent of all fatalities in Maryland.
- In 70 percent of the pedestrian fatalities, the pedestrians were at fault, according to police crash reports.
- 73 percent of the fatal pedestrian-involved crashes occur in the dark.
- Of the pedestrians killed, 40 percent were alcohol-impaired.
- Over 75 percent of the pedestrians killed were males.

National Statistics:

- There were 59,000 pedestrians injured and 4,902 pedestrians killed in traffic crashes in 2009.
- On average, a pedestrian is killed in a traffic crash every 120 minutes and injured in a traffic crash every 8 minutes.
- Thirty-six percent of the 354 young (under age 16) pedestrian fatalities occurred in crashes between 3 pm and 7 pm. Alcohol involvement — either for the driver or the pedestrian — was reported in 48 percent of all pedestrian fatalities.

Check out our Pedestrian & Bicycle Accomodation Course; it's scheduled for November 15th! For more information see page 9.

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Pedestrian Safety
(concluded from page 1)

Maryland Laws:
These laws, along with explanatory diagrams, can be accessed at the link below: http://www.montgomerycountymd.gov/content/DOT/dir/pedsafety/documents/md_ped_law.pdf

The driver of a vehicle must stop for a pedestrian in a marked or unmarked crosswalk when:

- At crosswalks and intersections without signals:
  - The pedestrian is on the half of the roadway on which the vehicle is traveling.
  - The pedestrian is approaching within one lane of the half of the roadway on which the vehicle is traveling.(§ 21-502 (a)(2))
- At intersections with signals:
  - When proceeding on a green signal, drivers turning right or left shall yield the right-of-way to pedestrians lawfully within the crosswalk.
  - When turning right on red after stopping, drivers shall yield the right of way to pedestrians lawfully within the crosswalk.(§ 21-202 (c), (d) & (k))

Safety Tips For Pedestrians: Walk Smart

- Be predictable. Stay off freeways and restricted zones. Use sidewalks where provided. Cross or enter streets where it is legal to do so.
- Crosswalks and traffic lights don't stop cars! The WALK signal does not mean it is safe to cross. It only means it is your turn to cross. Check to make sure all traffic has come to a stop before crossing.
- Look before stepping past stopped vehicles—They may be blocking your view of moving traffic.
- Wear bright clothes to be seen day or night. At night, wear reflective materials.
- Always walk on the sidewalk. If there is no sidewalk, always walk on the side of the road facing traffic.
- Stand on the side of the road while waiting for the bus and always stand at least 10 feet away from where the bus will stop.
- Alcohol and drugs can impair your ability to walk safely, just like they do a person's ability to drive.
- Try to make eye contact with the driver(s) to make sure they see you before you begin to cross

Safety Tips For Drivers: Do Your Part

- Always come to a complete stop at the stop line.
- Stop for pedestrians who are in a crosswalk, even if it is not marked. When you stop for a pedestrian in a crosswalk, stop well back so that drivers in the other lanes can also see the pedestrian in time to stop.
- Be especially attentive around schools and in neighborhoods where children are active.
- When you are turning, you often will have to wait for a "gap" in traffic. Beware that while you are watching for that "gap," pedestrians may have moved into your intended path.
- Be extra attentive and slow down in school and work zones where increased pedestrian presence is likely.
- Keep your windshield clean for maximum visibility.

Reprinted from Maryland Roads, for more information visit: www.MarylandRoads.com

The MD T2 Center was recently contacted to see if we had any tube booms from street sweepers, rodder hoses used to jet out sewer lines, fire hoses, and rubber snow plow blade bottoms to repurpose.

Picture courtesy of RepurposedMaterialsinc.com

What is "repurposing"? Repurposed Materials defines it as used assets that have value "as is" to a second, unrelated industry. Used rubber roofing membrane gets "repurposed" as pond liners… Retired wine barrels get "repurposed" as trash cans…Old street sweeper brushes get "repurposed" as back scratchers for livestock. Check out what's laying around and you might be able to repurpose it, which saves it from the landfill and or gives you more storage space.

One option for repurposing materials is Repurposed Materials, Inc., for more options in your area try logging on to the internet and using a search engine.

Picture courtesy of RepurposedMaterialsinc.com

CITE Blended Courses for 2011

The Consortium for ITS Training and Education (CITE) announces its Blended Course schedule for 2011. A "blended" course combines the best features of both instructor-led and web-based instruction. Features include: live discussions through the use of conference calls, convenient, flexible web-based learning, a specific time schedule in which to complete the course, and student interaction through the use of a discussion board.

For more information about or to register for CITE's Blended Courses visit:
www.citeconsortium.org

Scheduled courses include:

- Road Weather Information Systems (RWIS) Equipment and Operations, October - December
- Configuration Management for Traffic Management Systems, October - December

Road Safety 365: A Workshop for Local Governments

The Federal Highway Administration (FHWA) Office of Safety, in cooperation with Federal, State, and local stakeholders, has developed a one-day workshop for improving the physical factors of local and rural roadways that may contribute to crashes. *Road Safety 365: A Workshop for Local Governments* was developed incorporating notable adult learning approaches for conveying information and conducting exercises. It is designed to provide local and rural agencies with practical and effective ways to incorporate safety solutions into daily activities and the project development process.

Rural roads account for approximately 40 percent of the vehicle miles traveled in the Nation, but account for about 55 percent of fatalities. The fatality rate for rural crashes is more than twice the rate for urban crashes. Rural area crashes and their consequences differ from urban ones in several ways:

- Rural crashes are more likely to occur at higher speeds.
- Crash victims are more likely to be unbelted that their urban counterparts.
- Crashes are more likely to produce fatalities due to longer response times.

To help reduce the number and severity of crashes on local and rural roadways, the FHWA Office of Safety has developed the Road Safety 365 workshop as part of a package of focused products for local and rural governments. Using examples, case studies, and hands-on activities, the course demonstrates how to integrate safety solutions into rural and local transportation projects at all stages of the project development process - planning, design, construction, implementation, operations, and maintenance. The course provides practical guidance in identifying road safety issues and implementing low-cost countermeasures. It also presents the benefits and potential cost savings of integrating safety improvements into daily operations and maintenance activities - not just on an occasional basis, but 365 days a year.

The Road Safety 365 workshop audience ranges from decision-makers to road crews. It is aimed primarily at local and rural road and public works supervisors. Others who would benefit from this training include: elected officials, public safety advocates, State Department of Transportation personnel, law enforcement, consultants. regional and rural development organizations, municipal associations, town safety committees, local planning commissions, metropolitan/rural planning organizations, and university extension offices. After completing the workshop, participants should be able to identify safety issues on their road network and the countermeasures and available resources to address them.

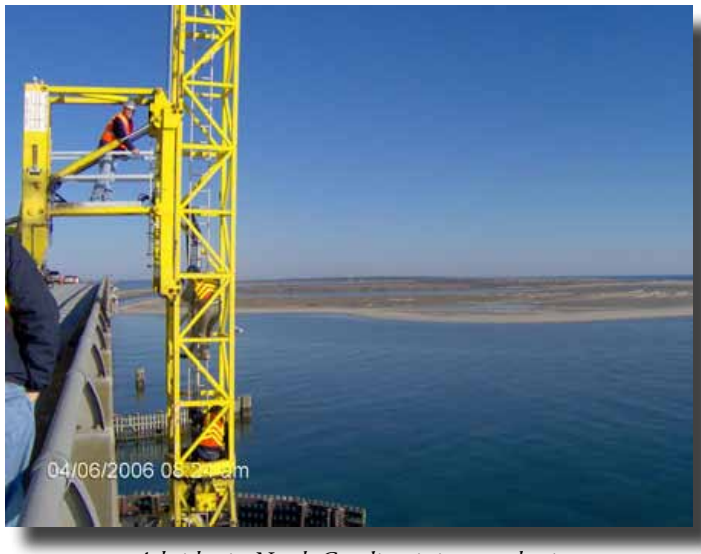
Want to know more? Check out our Road Safety 365 - A Safety Workshop for Local Governments course on Page 9, it's scheduled for December 6th!

FHWA Introduces New Bridge Safety Initiative

A new bridge safety initiative introduced by the Federal Highway Administration (FHWA) this year is using systematic, data-driven, and risk-based reviews and analysis to improve oversight of how States are performing their bridge inspections. This new process will help identify opportunities for improvement in achieving consistent compliance with the National Bridge Inspection Standards (NBIS).

Bridge inspectors examine the strands of a suspension cable.

The initiative replaces FHWA's prior National Bridge Inspection Program oversight practices and the annual NBIS compliance reviews conducted by FHWA's State division offices. Previously FHWA division offices prepared an annual written assessment of a State's bridge inspection program based on a general review of key inspection areas. Using the new process, FHWA is assessing bridges using defined criteria for 23 key metrics, each of which can be linked directly to requirements in the NBIS. These key metrics include inspection records; determination of bridge load limits; qualifications of inspection personnel; procedures for underwater, fracture-critical, and complex bridge inspections; and inspection frequency.



A bridge in North Carolina is inspected using under-bridge inspection vehicles.

The new process is based on objective, statistical data, providing for greater consistency in bridge inspections nationwide and more strategic approaches to identifying problem areas. "It allows us to hone in on areas that need the most improvement, raising the bar in terms of bringing all programs to a level meeting or exceeding national standards," said Tom Everett of FHWA. "We will be better able to target areas of concern."

A primary difference from past inspection oversight practices is that instead of determining an overall level of compliance for a State, FHWA will make an individual compliance determination for each of the 23 metrics. Each metric will be assessed at different levels (minimum, intermediate, and in-depth) based on associated risk and the duration between more detailed FHWA reviews.

An inspector conducts a visual inspection of a single-span bridge in Missouri.

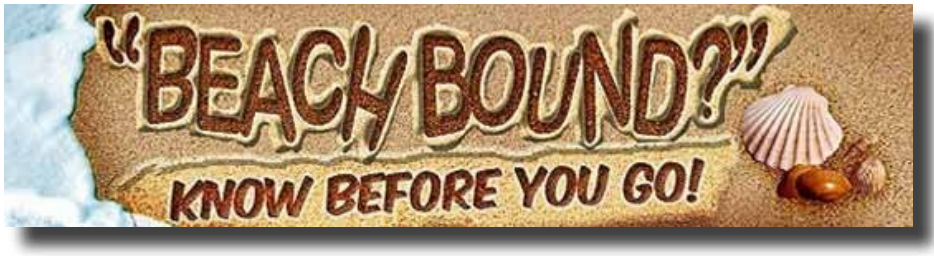
"The reviews now underway are already demonstrating the effectiveness of the new system," said Everett.

For more information about the new bridge safety initiative, contact Tom Everett at FHWA, 202.366.4675 or at thomas.everett@fhwa.dot.gov.

Preprinted from the August 2011 issue of FOCUS, a publication of the United States Department of Transportation and the Federal Highway Administration

Ready. Set. Know! *511 Free Traveler Information Service Available In Maryland*

New Tool Helps Marylanders Navigate Daily Commutes, Road Trips, Special Events



Will a car crash double the time it takes to get home tonight? Will an emergency road repair steal away beach time next weekend? If you have traffic questions, get answers with Maryland 511. Know Before You Go is the theme of the new Maryland 511 traveler information system now available throughout the State. It provides key travel information to help guide Marylanders before heading out to major events, cross-state travel and daily commutes. Calling 511 from any mobile or land line or logging onto www.MD511.org provides free one-stop shopping for travel information on State maintained roadways, including travel times, incident or work zone lane closures, weather reports and connections to transit, airport and tourism information. With 511, commuters and visitors are offered more predictable travel in Maryland. Drivers can save time, fuel costs and frustration that often breeds aggressive and unsafe driving.

Personalize your traffic information and travel times with My Maryland 511, a feature of the www.MD511.org web site, where you can create a profile and set up designated "trips," (i.e. from home to work or from home to beach). Thereafter every time you log in, you're instantly offered customized traffic information as well as instant access to up to six pre-selected live traffic camera views. In your profile choose to include commonly used phone numbers, so that when you call 511, you are recognized and offered tailored information bypassing the general menu prompts.

"Take advantage of 511 and its benefits, but please do so safely," said Acting SHA Administrator Darrell Mobley. "It's a good time to remind Marylander drivers about the laws restricting hand-held phone use and texting while driving. Access 511 before heading out or after pulling over to a safe location."

The 511 system is available every day, anytime. Traffic data from a variety of traffic information sources including the Coordinated Highway Action Response Team program will be updated and constantly provided to the public through the automated telephone line, website, and social networking outlet Twitter.

Using the system will only make it better. The more users, the better information we have to learn about what is important to travelers around Maryland.

Specific suggestions and concerns are welcome; just tell us what is important to you. You can record comments using the 511 phone system by pressing "77" or the "Contact Us" link on the website to let us know about your experience with the service. SHA will continue to refine the voice recognition and programming during the initial phase. In addition to dialing "511" in Maryland, you can reach Maryland 511 by calling the toll-free number: 1.855.GOMD511 or 1.855.466.3511.

The three-digit "511" number was designated by the Federal Communications Commission (FCC) as the national telephone number for traveler information. "511" is used by more than 40 state or municipal transportation departments and transit agencies in the nation. Log on to www.MD511.org and set up your personalized routes today and learn how 511 can improve your commute or next road trip.

Reprinted from Maryland Roads, for more information visit: www.MarylandRoads.com

New FHWA Tech Briefs Offer Information on Superpave Gyratory

As part of its ongoing national effort to improve the long-term performance and cost effectiveness of asphalt pavements, the Federal Highway Administration's (FHWA) Asphalt Pavement Technology Program has released two new Tech Briefs on the Superpave mix design system.

Superpave Mix Design and Gyratory Compaction Levels (Pub. No. FHWA-HIF-11-031) highlights the revolution in mix design brought about by the Superpave system. Developed through the Strategic Highway Research Program (SHRP) and first launched in 1993, Superpave is now the most widely used mix design system in the United States. The system introduced a new compactor, the Superpave gyratory compactor (SGC), for densifying mixes in the lab. Also introduced were new aggregate and binder requirements.

Despite Superpave's widespread success, some highway agencies have expressed concern that the asphalt mixes produced by the system's gyratory compaction levels can be too dry due to low asphalt binder content, resulting in durability issues. As noted in the Tech Brief, "the AASHTO [American Association of State Highway and Transportation Officials] Superpave gyratory compaction levels have proven to provide good-performing, constructible pavements in most cases." For cases where the current requirements may not be effective, the FHWA Mix Expert Task Group recommends that agencies perform an independent evaluation prior to making any adjustments in compaction levels from the AASHTO R 35 standards, "Superpave Volumetric Design for Hot-Mix Asphalt." The evaluation should look at the effect of the proposed changes in gyration level on performance for typical aggregates, binder, and mix designs. Superpave Mix Design provides guidance on conducting these evaluations, including examining the gyratory compaction level and binder content, considering the relationship of aggregate material properties to performance, evaluating mixtures, and conducting performance testing.

An overview of the gyratory issues that affect the performance of asphalt pavements is provided in Superpave Gyratory Compactors (Pub. No. FHWA-HIF-11-032). As highlighted in the Tech Brief, the primary operating parameters for the SGC include the pressure applied to the specimen during compaction, speed of gyration/rotation, number of gyrations applied to the specimen, and the angle of gyration. Values for these parameters were established during the development of the Superpave system under SHRP.

When all of these factors are properly calibrated, it was generally assumed that an SGC would produce hot-mix asphalt (HMA) specimens that have similar volumetric properties. However, this assumption has been questioned in recent years since procedures for calibrating the angle of gyration are unique to specific models of SGCs. FHWA led an effort to develop technology for a universal method of measuring the angle of gyration on all SGCs from inside of the specimen mold. These "internal angle" measurement devices have since been refined and are available from private manufacturers. As there are numerous potential sources of variability related to the production of a laboratory-compacted HMA specimen, however, Superpave Gyratory Compactors is designed to help practitioners address all of these various sources. The publication also provides a brief history of the development of concepts, practices, and equipment for measuring the internal angle of gyration, as well as the development of specifications for using internal angle measurements as part of routine practice.

Topics covered include use of the dynamic internal angle to calibrate the SGC, measurement of the dynamic internal angle using simulated loading, comparison of internal angle measurement systems, and the relationship between the internal angle and air voids for compacted HMA.

To download the Tech Briefs online, visit www.fhwa.dot.gov/pavement/pub_listing.cfm (click on "S" to see links to the publications). For more information on the Superpave mix design system, contact the FHWA Asphalt Pavement Technology Team: John Bukowski, 202.366.1287, john.bukowski@fhwa.dot.gov; Jack Youtcheff, 202.493.3090, jack.youtcheff@fhwa.dot.gov; or Tom Harman, 410.962.0134, tom.harman@fhwa.dot.gov. To learn more about additional pavement topics, visit www.fhwa.dot.gov/pavement.

Reprinted from the August 2011 issue of FOCUS, a publication of the United States Department of Transportation and the Federal Highway Administration

The following courses are currently scheduled and we are still adding to the list! For more information or to schedule a class, contact Janette Prince at 301.403.4623 or register online by visiting us at www.mdt2center.umd.edu.

BASIC DRAINAGE

Ed Stellfox
September 28, 2011, 8:30am - 3:00pm
College Park, Maryland
$89 for all participants
PDHs: 0.6

This course emphasizes the importance of good drainage with discussions of water and its effects on roads, problems caused by improper drainage, and ways to handle these problems. It covers types of drainage facilities, ranging from ditches, culverts, subdrains, inlets and end structures. Their uses, materials, installation and maintenance as well as erosion control are addressed. It also introduces geosynthetic drainage applications. The following topics will be covered: importance of drainage, characteristics of water, system maintenance, drainage principles, surface and subsurface drainage, ditches, driveways, drainage culverts – materials and placement, headwalls, endwalls and inlets, erosion control, and geosynthetics in drainage.

ROUNDABOUT PLANNING AND DESIGN

Dane Ismart
September 29, 2011, 8:30am – 3:00pm
College Park, Maryland
$99 for Maryland local government participants
$125 for all other participants
PDHs: 0.6

This one-day workshop will highlight the new procedure to roundabouts as per the NEW 2010 Highway Capacity Manual. Topics covered in the roundabout course will include geometric design, signing, striping, safety, and accommodation of pedestrians and bicyclists. An important component of the course will be a discussion of the advantages and disadvantages of roundabouts. SIDRA and Rodel software packages will be demonstrated to the class participants and used for capacity and operational analysis of roundabouts. The basic structure of the course will be built around the FHWA Report, "Roundabouts: An Informational Guide." Maryland's Roundabout Guide will also be discussed and included as part of the course. Transportation Planners and Traffic Engineers who are planning or designing a modern roundabout are encouraged to participate.

WINTER MAINTENANCE

Ed Stellfox
October 4, 2011, 8:30am – 3:00pm
College Park, Maryland
$89 for all participants
PDHs: 0.6

This course covers all aspects of winter operations- planning and organizing, methods of snow and ice control, salt usage, and winter equipment maintenance. This lesson will include usage of snow maps, formal snow plans, snow plow and salt spreader operation. This course in intended for municipal officials, road commissioners, supervisors, superintendents, publics works and maintenance personnel, equipment operators, and city or town managers.

TRAFFIC SIGNS

Ed Stellfox
October 5, 2011, 8:30am – 12:30pm
College Park, Maryland
$59 for all participants
PDHs: 0.4

This half-day course will cover the regulations and guidelines for traffic signs including; regulatory signs, warning signs, and guide signs. A review of the Manual on Uniform Traffic Control Devices (MUTCD) will also be covered. An in depth discussion of sign examples, installation and maintenance, as well as sign management will be covered.

SITE IMPACT ANALYSIS

Dane Ismart
October 17-18, 2011, 8:30am – 3:00pm
College Park, Maryland
$220 for Maryland local government participants
$250 for all other participants
CEU's: 1.2
PDHs: 0.6

Participants will learn the standard techniques for estimating the traffic impacts of both small and large site developments. Content includes procedures for land use forecasting, trip generation, trip distribution and assignment, site impact layout design, and level of service designation. The workshop will be conducted with manual procedures, but computer software packages suitable for site impact will also be demonstrated. Participant's will receive a workbook, traffic access and impact studies, evaluating traffic impact studies, and a site impact handbook are provided. This course is designed for transportation engineers, traffic engineers, and planners concerned about the impacts of site development. Previous experience in traffic capacity or planning procedures is useful.

ROAD SURFACE MANAGEMENT

Ed Stellfox
October 19, 2011, 8:30am – 3:00pm
College Park, Maryland
$89 for all participants
PDHs: 0.6

This course provides participants with the basic concepts of road surface management including inventory, distress identification, condition survey, strategies, programs, budgets, and field surveys. A Road Surface Management Systems software demonstration will also be conducted during this course.

CONSTRUCTION MATHEMATICS

Ed Stellfox
October 26, 2011, 8:30am – 3:00pm
College Park, Maryland
$89 for all participants
CEU's: 0.6
PDHs: 0.6

Construction inspectors may need to brush up on math skills specifically related to construction inspection, especially basic geometry, fractions, area, volume and conversions. The class is a good refresher, and excellent preparation for the construction inspection class. The course was designed for road workers, foremen, superintendants, construction inspectors and supervisors in need of a refresher, especially in preparation for the Construction Inspections class. Depending on the interest of the participants, the course may cover: whole number and fractions, decimals (for measurement and payment), mixed operation fractions and decimals, formula evaluation, techniques of algebra, ration and proportion, percentage, hints for problem solving, useful formulas, square and square roots, conversion, and transportation construction examples.
Please note: Participants should bring a calculator, a scale, and a straight edge.

PEDESTRIAN & BICYCLE ACCOMMODATION

Dane Ismart
November 15, 2011, 8:30am – 3:00pm
College Park, Maryland
$110 for Maryland local government participants
$125 for all other participants
PDHs: 0.6

Interested in finding out more about this course? Visit us online for a course description.

ROAD SAFETY 365 - A SAFETY WORKSHOP FOR LOCAL GOVERNMENTS

Juan Morales
December 6, 2011, 8:30am – 3:00pm
College Park, Maryland
$110 for Maryland local government participants
$125 for all other participants
PDHs: 0.6

This course is designed to provide local and rural agencies with practical and effective ways to mainstream safety solutions into their day-to-day activities and project development process. This one-day workshop focuses on processes for incorporating safety into all aspects of local and rural projects, and on making safety a priority through inclusion in the traditional decision-making process - 365 days a year. The course stresses the importance of road safety, and illustrates how it can be integrated into rural/local transportation project development at all stages: planning, design, construction, implementation, operations, and maintenance. Through practical exercises and facilitator-led discussions, the emphasis is on operations and maintenance to reflect the predominant, day-to-day responsibilities of rural/local transportation agencies. The benefits and potential cost savings of safety initiatives are shown using examples from rural/local agencies. The workshop audience ranges from decision-makers to road crews. It is aimed primarily at local and rural road and public works supervisors. Others who would benefit include: elected officials, public safety advocates, State DOT personnel, law enforcement, consultants, regional and rural development organizations, municipal associations.

Professional Development Hours

Are you a Professional Engineer? Starting in October 2012 a minimum of 12 Professional Development Hours (or PDHs) will be required to fulfill license renewal requirements.

Many of our courses offer PDHs. For a more detailed listing of all our courses, visit our course catalog online at: http://www.mdt2center.umd.edu/courses/course-catalog.html

For more information about the new P.E. renewal requirements visit: http://www.dllr.state.md.us/license/pe/peeduc.shtml





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Need Training but budget cuts won't allow travel?
Request a class and we'll bring it to you!

We understand your training needs and the tremendous budget cuts everyone is dealing with in this economy. By logging on to www.mdt2center.umd.edu and requesting a course that 10 or more of your employees need, we'll bring our course to you. We'll need a room where your employees can learn and either a white board or bare wall for our projector and a pot of coffee for our instructor.

Requesting a course is simple, visit www.mdt2center.umd.edu and fill out our request training form or call Janette Prince at 301.403.4623 and she'll be glad to assist you.

MD T² Advisory Board Committee