

MOVING FORWARD



“He who does not look ahead, remains behind.” (Spanish Proverb)

Ohio Department of Transportation, Office of Research and Development

Spring 2004

OPREP 2005 Project Selection

The Research Selection Committee has selected the projects to fund through the ODOT Partnered Research Exploration Program (OPREP) during fiscal year 2005. The following three projects were chosen from nine submissions.

“A Comparative Evaluation of Corelok Device in Determining Reliable Bulk Gravity and Maximum Gravity Test Results” submitted by Dr. Arudi Rajagopal of the University of Cincinnati

In order to improve the accuracy of specific gravity measurements, a new instrument, the Corelok Device, has been developed. A Bulk Specific Gravity round-robin study was conducted at the National Center for Asphalt technology in 2000. The project consisted of bulk specific gravity determination for compacted Hot Mix Asphalt (HMA) mixes utilizing the Corelok vacuum-sealing device and the Saturated Surface Dry (SSD) method. A total of 21 labs participated in the study. Although the findings showed comparable results for dense graded mixes, coarse graded Superpave mixes and Stone Matrix Asphalt, the measured bulk specific gravities diverged above a water absorption of 0.4 percent. The objective of this study is to statistically evaluate the reliability of the Corelok device in determining bulk specific gravity and maximum specific gravity, and compare the test results with conventional procedure. The intended result is to develop a test procedure that may result in less operator error, less time, and greater reliability.

“Predicting Fatigue Lifetime from Strain Histograms Observed in an Abbreviated Time Window” submitted by Dr. Arthur Huckelbridge of Case Western Reserve University

A recent ODOT sponsored research project, “Implementation of Field Strain Measurements for Fatigue Lifetime Evaluation” had as a deliverable a user-friendly, menu-driven monitoring system capable of predicting remaining bridge fatigue lifetime. The effective implementation of this system requires the training of bridge inspection personnel, and the development of an adequate database to assist in extrapolating expected lifetime from a short duration observation window for different highway categories, taking into account statistically, the temporal variation of fatigue damage rates. At the current time, the system, as a default, extrapolates for different road categories on the basis of truck traffic survey data collected by PennDOT. While useful, the truck survey data does not necessarily reflect exactly the temporal pattern of fatigue damage accumulation needed for reliable lifetime extrapolation. The objectives of this study will be to demonstrate the feasibility of application of the field monitoring system by bridge inspection personnel and to develop an effective database of in-situ observations, upon which reliable fatigue lifetime extrapolations can be based. A more rational procedure for predicting the remaining lifetime of a bridge structure will result in numerous benefits including enhanced safety and improved financial investments.

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OPREP 2005 Continued

“Development of Pavement Performance Predicting Model and Decision Trees for the City of Cincinnati” submitted by Dr. Arudi Rajagopal of the University of Cincinnati

One of the primary uses of pavement performance models is in the selection of an appropriate Maintenance and Rehabilitation (M&R) treatment. Selecting the optimum M&R strategy is generally a complex process. Some researchers have suggested a “decision tree” approach. Decision trees have been used to select appropriate repair strategy based on the existing pavement condition. Dr. Arudi Rajagopal will develop a set of decision trees to address this process in his OPREP study titled “Development of Pavement Performance Predicting Model and Decision Trees for the City of Cincinnati.” Dr Rajagopal’s research will enable engineers to predict future pavement conditions and remaining service life; identify appropriate types of action and time of treatment; and perform an economic analysis of various alternatives resulting in better use of available resources which will result in a better utilization of state, county, and local funds.

For more information on OPREP, please see chapter 3 of the RD&T² Manual of Procedures, which can be downloaded from our website at <http://www.dot.state.oh.us/divplan/research/manual/rd%20manual.htm>.

Calendar of Events

June - 2004

June 30 - Quarterly Reports Due on all active projects

July - 2004

July 2 - Deadline for FY2005 Proposals (4:30 PM)

August - 2004

August 6 - Deadline for FY2006 Proposals (4:30 PM)

August 13 - Research Technical Liaison Training
For More Information go to <http://www.dot.state.oh.us/divplan/research/announcements/announcements.htm>

August 22-23 - Performance Measures to Improve Transportation Systems: Second National Conference

For More Information go to <http://www.trb.org/Conference/Performance>

September - 2004

September 3 - Deadline for FY2007 Proposals (4:30 PM)

September 3 - Research Technical Liaison Training

For More Information go to <http://www.dot.state.oh.us/divplan/research/announcements/announcements.htm>

September 24 - Research Technical Liaison Training

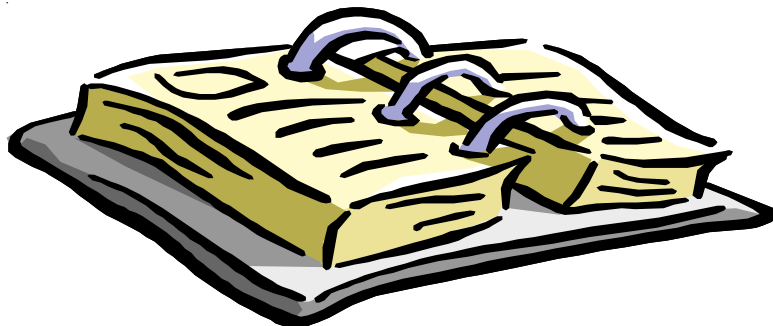
For More Information go to <http://www.dot.state.oh.us/divplan/research/announcements/announcements.htm>

September 30 - Quarterly Reports Due on all projects

October - 2004

October 26-27 - Ohio Transportation Engineering Conference - Columbus, Ohio

For more information visit: <http://www.otecohio.org/>



The Role of Technical Liaisons and Project Panels

Technical Liaisons assist with and/or perform many tasks involved in developing and overseeing a research project. They should have the expertise to adequately evaluate and manage the technical aspects of the research. They also should devote sufficient time to maintain full familiarity with the details and progress of the work throughout the life of each project.

If a project involves several functional areas or requires special expertise, a team of technical experts maybe appointed. This group comprises a Project Panel and performs functions similar to those of a Technical Liaison. Panels may include representatives from ODOT, FHWA, universities, industry, trade associations, and/or other institutions with related interest.

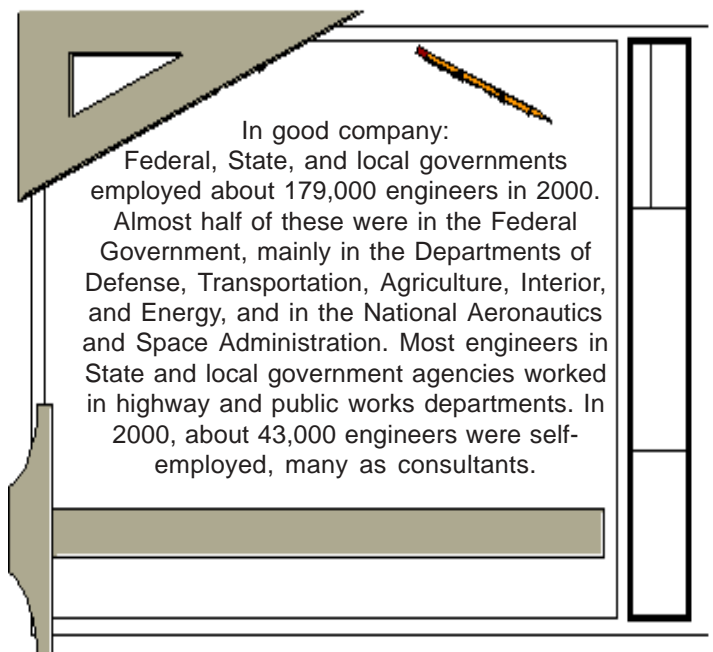
Panel members cannot individually consult with or advise research agencies. Any communication with a research agency shall be with the complete Panel; however, the Panel may elect a chairperson to handle correspondence, contacts, etc. on behalf of the entire Panel. Any representative from a university or the industry accepting membership to a Panel is prohibited from submitting proposals on projects under the Panel's jurisdiction. However, other researchers within the same institution or agency may submit a proposal.

A representative from the Office of Application Services in the Division of Information Technology (DOIT) may serve as a Panel member on any project that involves the purchase or development of hardware or software products.

Recommendations for Technical Liaisons and Project Panel members are made cooperatively by the respective Office Administrators of the functional areas involved in the research. Deputy Directors over the involved Offices must confirm these appointments. The Research Selection Committee approves the final recommendations and has the authority to modify them if needed.

The Technical Liaison or Project Panel may have responsibility for the following functions:

- Conducting preliminary literature reviews for proposed projects to prevent duplication of effort and ensure the quality of the work performed.
- Developing problem statements, requests for proposals, and preliminary cost estimates for assigned projects.
- Reviewing proposals and making recommendations for selection of research entities.
- Helping in the identification of field test locations or sections by coordinating with Districts.
- Maintaining regular contact with researchers to monitor progress and facilitate the resolution of problems or delays.
- Providing technical advice and guidance.
- Reviewing invoices and quarterly reports for validity (e.g., assessing whether or not an invoice amount is commensurate with the work completed, etc.).
- Making recommendations to Office Administrators and R&D regarding project scope, budget and time modifications, and continuation of studies.
- Reviewing and evaluating interim and draft reports to assess the accomplishment of project objectives and suitability for report publication (in coordination with R&D), and reviewing final reports to ensure compliance with comments.
- Recommending an implementation plan of favorable research results; and coordinating and assisting in implementation activities.



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If you have any suggestions, comments, or ideas for articles, please submit them to: research@dot.state.oh.us



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