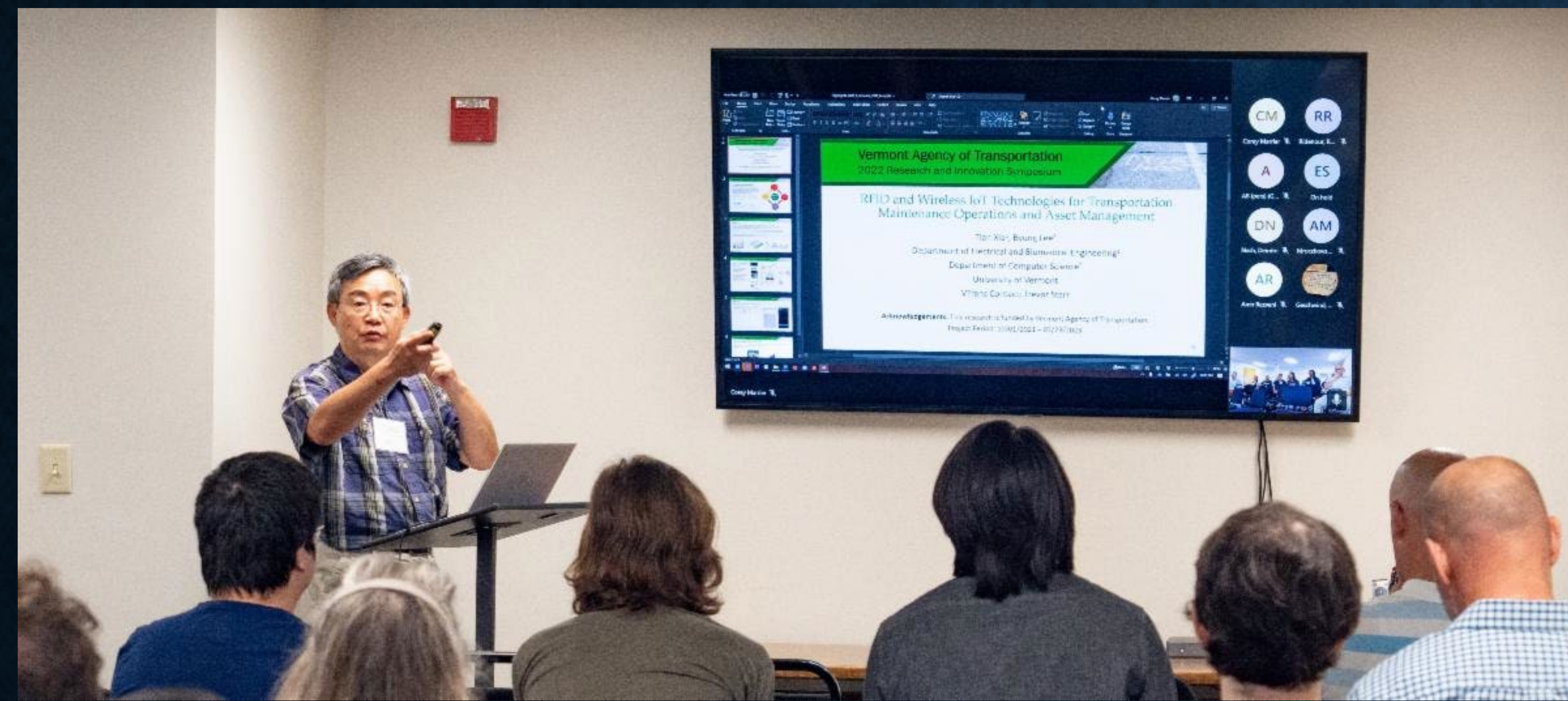


Background Information

- Held in September since 2017
- Initially motivated as a way to share what we are doing with Research
- 2021 and 2020 were virtual. 2022 was Hybrid
- 2022: 27 projects; 100 in-person attendees; 74 virtual over 5 sessions
- 2022 Technical Sessions: Materials; Structures, Construction and Concrete; Asset Management and Condition; and Planning and Safety

Tanya Miller, Research Engineer; Dr. Emily Parkany, PE, Research Manager

2023 Transportation Research Board Annual Meeting, Session 3153



Each Project Web Page has:

- Individual Project Page on Symposium Website
- Project Description
- Fact Sheet
- Poster
- 4-minute Highlights Presentation (recording or slide deck)
- Additional Links (Final Reports, Project Pages, etc.)
- Presenter Contact Info

BALANCED MIX DESIGN (BMD)

Brief Project Description: Balanced mix design (BMD) is an innovative methodology in evaluating asphalt mix designs by utilizing performance - related tests correlated to various volumetric and engineering properties. Using the Hamburg Wheel Tracker Test (HWTT) to evaluate rutting and moisture susceptibility, and the Illinois Flexibility Index Test (I-FIT) and Indirect Tensile Asphalt Cracking Test (aka the IDEAL-CT) to evaluate cracking susceptibility, a benchmarking study was conducted by VTrans, FHWA, and NCAT to evaluate the range of test results, with all samples representing plant-produced mixtures on VTrans' Quality Assurance (QA) paving projects from the 2017 through 2021 construction seasons.

Poster:

Balanced Mix Design (BMD) Benchmarking

Aaron Schwartz, Ian Anderson
VTrans – Highway Division
Construction & Materials Bureau – Materials & Certifications Section

Background
Balanced mix design (BMD) is an innovative methodology in evaluating asphalt mixture designs by utilizing performance - related tests correlated to various engineering properties to analyze the rutting, cracking, and moisture susceptibilities of the mixtures. VTrans has been investigating three (3) tests for this endeavor.

Analysis
Benchmarking is a step in establishing baseline data for performance testing, in which a set of currently approved asphalt mixtures are subjected to these tests to determine the range of results and which tests evaluated are most implementable.

Methodology
In collaboration with FHWA and the National Center for Asphalt Technology (NCAT) at Auburn University, a benchmarking study was conducted to evaluate the range of test results in the HWTT (used to evaluate rutting and moisture susceptibility) and the I-FIT and the IDEAL-CT (both used to evaluate cracking susceptibility). All samples represented plant-produced samples on VTrans projects from the 2017 through the 2021 construction seasons.

Conclusions

- Mix type plays a statistically significant role on rutting and cracking resistance due to its role in dictating the nominal maximum aggregate size (NMAS) and minimum voids in mineral aggregate (VMA).
- The benchmarking results indicated that the test results appear to reflect the benefits of polymer modified binders (i.e., PG 70-28) on rutting resistance and finer mixtures (i.e., Type III and Type IVS) on cracking resistance.
- The modified Type IVS mixtures with PG 70-28 binder being produced for VTrans projects are primarily designed for rutting resistance.

Acknowledgments
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Dr. Nare Thon, NCAT/Auburn University

[Fact Sheet](#) [Presentation](#) [Other Q&A](#)

Presenter: Aaron Schwartz, VTrans

Contact: Aaron Schwartz, aaron.schwartz@vermont.gov

[Related VTrans Project Page](#)

[2022 NEAUPG Presentation](#)



2022 Symposium Website

New in 2022:

- Shorter Day (competing Technical Sessions!)
- Hybrid Format, Worked with Consultant
- Posters Plus Demonstrations (50%)
- Tours of Materials Lab and Transportation Management Center
- People's Choice Awards
- Post-Event Newsletter
- Food!



Post Event Newsletter

Benefits

- Diverse topics and audience
- Practitioners and Researchers can share information
 - Good option for Tech Transfer and advancing Knowledge Management
- Networking Opportunity
- Content is available online after the event. Can point to information for years
- Project materials seed our quarterly newsletters
- Share Research and AOT Innovations with additional audiences