

**AAPT Annual Meeting Program  
Ft. Worth, TX**

**SUNDAY MARCH 3, 2019**

2:00 – 5:00 PM

AAPT/ISAP Global Forum: *Impacts of Climate Change on Asphalt Pavements*  
(Gabriele Tebaldi, Kamilla Vasconcelos)

5:30 – 7:00 PM

Icebreaker Reception

**MONDAY MARCH 4, 2019**

7:00 – 8:00 AM

Newer Members Breakfast (Jenna Bowers)

8:00 – 9:30 AM

94<sup>th</sup> Annual Business Meeting (Audrey Copeland)

9:45-11:45 AM

Leading Edge Workshop: *Automation in the Paving Industry* (Phil Blankenship)

11:45 AM – 1:15 PM

Authors/Presenters Lunch

1:15 – 3:00 PM

Technical Session 1 (Gaylon Baumgardner)

**Internal Restraint Damage Mechanism for Age-Induced Pavement Surface Distresses: Block Cracking and Raveling**

Michael D. Elwardany<sup>a</sup>, Gayle King<sup>b</sup>, Jean-Pascal Planche<sup>a</sup>, Carolina Rodezno<sup>c</sup>, Donald Christensen<sup>d</sup>, Ray S. Fertig III<sup>e</sup>, Kyle Kuhn<sup>e</sup>, and Faisal Bhuiyan<sup>e</sup>

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<sup>a</sup> Western Research Institute

<sup>b</sup> GHK, Inc.

<sup>c</sup> National Center for Asphalt Technology

<sup>d</sup> Advanced Asphalt Technologies

<sup>e</sup> University of Wyoming

**Analysis of Double Edge Notched Tension Test and Multiple Stress Creep Recovery Test Ability to Predict HMA Fatigue Performance**

Mike Aurilio<sup>a</sup>, Ali Qabur<sup>b</sup>, Peter Mikhailenko<sup>b</sup>, and Hassan Baaj<sup>b</sup>

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<sup>a</sup> Yellowline Asphalt Products Ltd.

<sup>b</sup> University of Waterloo

## **Evaluation of Newly Developed Performance Grading Systems for Emulsion Residues**

Andrew Hanz<sup>a</sup>, R. Michael Anderson<sup>b</sup>, Codrin Daranga<sup>c</sup>, Brett Lambden<sup>d</sup>, and Mary Ryan<sup>a</sup>

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<sup>a</sup> MTE Services Inc.

<sup>b</sup> Asphalt Institute

<sup>c</sup> Paragon Technical Services

<sup>d</sup> Husky Energy

3:00 – 5:00 PM

Student Poster Session (Nima Roohi)

6:00 – 9:00 PM

Monday Night Social (OPTIONAL)

## **TUESDAY MARCH 5, 2019**

6:00 – 7:00 AM

Pavement Inspection Tour

8:00 – 11:45 AM

Technical Session 2 (Phil Blankenship)

## **Fifteen Years of Warm-Mix Asphalt in the United States: What are the Overall Implications of Varying Warm-Mix Technologies on High, Intermediate, and Low Temperature Behaviors?**

Carl V Pittman<sup>a</sup>, Rabeea W Bazuhair<sup>a</sup>, Isaac L Howard<sup>a</sup>, and James Michael Hemsley, Jr.<sup>b</sup>

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<sup>a</sup> Mississippi State University

<sup>b</sup> Paragon Technical Services

## **Warm Mix Asphalt (WMA) for Airport Pavements – Relating Laboratory Test Results to Performance Under Accelerated Pavement Testing (APT)**

Hasan Kazmee<sup>b</sup>, Navneet Garg<sup>a</sup>, Christopher Tomlinson<sup>b</sup> and Lia Ricalde<sup>b</sup>

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<sup>a</sup> Federal Aviation Administration, William J. Hughes Technical Center,

<sup>b</sup> Applied Research Associates, Inc.,

## **State of Practice on the Use of Tack Coats for Micro-Surfacing Applications: A Survey**

Munir Nazza<sup>a</sup> and Louay Mohammad<sup>b</sup>

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<sup>a</sup> Ohio University

<sup>b</sup> Louisiana State University/LTRC

## **Superpave5: Relationship of In-Place Air Voids and Asphalt Binder Aging**

Gerald Huber<sup>a</sup>, Jason Wielinski<sup>a</sup>, Christopher Campbell<sup>a</sup>, Jim Padgett<sup>b</sup>, Geoffrey Rowe<sup>c</sup>, Matt Beeson<sup>d</sup>, and Seong-Hwan Cho<sup>d</sup>

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<sup>a</sup> Heritage Research Group

<sup>b</sup> Walsh and Kelly

<sup>c</sup> Abatech

<sup>d</sup> Indiana Department of Transportation

## **Estimating Frictional Properties of Compacted Asphalt Mixtures**

Rebecca S. McDaniel<sup>a</sup>

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<sup>a</sup> Purdue University

## **Evaluation of Increased Use of RAP with Soft Husky Asphalt Binder**

John D'Angelo<sup>a</sup>, Raj Dongre<sup>b</sup>, and Brett Lambden<sup>c</sup>

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<sup>a</sup> D'Angelo Consulting

<sup>b</sup> Dongré Laboratory Services

<sup>c</sup> Husky Energy

### **BY TITLE ONLY**

## **Performance Evaluation for Cold In-Place Recycling with Different Binders, Curing Processes and Compaction Levels**

Ahmed Saidi<sup>a</sup>, Zhaoxing Xie<sup>a</sup>, Ayman Ali<sup>a</sup>, and Yusuf Mehta<sup>a</sup>

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<sup>a</sup> Rowan University

11:45 AM – 1:15 PM

Past Presidents Council (Gaylon Baumgardner)

1:15 – 1:50 PM

Technical Session 3 (Jo Sias, Dave Timm)

## **Developing a Performance-Related Specification Program for Asphalt Pavements**

Mirkat Oshone<sup>a</sup>, Jo E. Sias<sup>a</sup>, Leslie Myers McCarthy<sup>b</sup>, David J. Mensching<sup>c</sup>, Eshan V. Dave<sup>a</sup>

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<sup>a</sup> Department of Civil and Environmental Engineering, University of New Hampshire

<sup>b</sup> Department of Civil and Environmental Engineering, Villanova University

<sup>c</sup> Federal Highway Administration, US DOT

2:00 – 5:00 PM

Symposium: *Implementation and Use of Mechanistic-Empirical Pavement Design* (Jo Sias, Dave Timm)

### **Overview of M-E Approaches (Invited Speakers)**

#### **State/User Agency Experience and Implementation:**

##### **Virginia's Experience with MEPDG Implementation**

Harikrishnan Nair<sup>a</sup>, Affan Habib<sup>b</sup>, Bryan Smith<sup>b</sup>, and Girum Merine<sup>b</sup>

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<sup>a</sup> Virginia Transportation Research Council (VTRC)

<sup>b</sup> Virginia Department of Transportation

##### **Implementation of Texas Mechanistic-Empirical Flexible Pavement Design System**

Sheng Hu<sup>a</sup>, Asif Rahman<sup>a</sup>, Jun Zhang<sup>a</sup>, Fujie Zhou<sup>a</sup>, Tom Scullion<sup>a</sup>, and Enad Mahmoud<sup>b</sup>

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<sup>a</sup> Texas A&M Transportation Institute

<sup>b</sup> Texas Department of Transportation

## International Perspective (Invited Speakers)

6:00 PM

Social Hour

7:00 PM

Awards Dinner (Audrey Copeland)

After Dinner Social

## WEDNESDAY MARCH 6, 2019

8:00 – 11:45 AM

Technical Session 4 (Adam Hand)

### Balanced Mix Design Sensitivity to Production Tolerance Limits and Binder Source

Walaa Mogawer<sup>a</sup>, Alexander Jordan Austerman<sup>a</sup>, Kevin D Stuart<sup>b</sup>, Fujie Zhou<sup>c</sup>, and Pedro Romero<sup>d</sup>

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<sup>a</sup> HSRC/University of Massachusetts

<sup>b</sup> Consultant

<sup>c</sup> Texas A&M Transportation Institute

<sup>d</sup> University of Utah

### Balanced Design of Asphalt Mixes with Reclaimed Asphalt Pavement and Recycled Asphalt Shingle Using Binder and Mixture Performance Tests

Xuan Chen<sup>a</sup>, Mansour Solaimanian<sup>a</sup>, and Scott Milander<sup>a</sup>

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<sup>a</sup> Pennsylvania State University

### Relationships between Mixture Fatigue Performance and Asphalt Binder Properties

Donald Christensen<sup>a</sup> and Nam Tran<sup>b</sup>

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<sup>a</sup> Advanced Asphalt Technologies, LLC

<sup>b</sup> National Center for Asphalt Technology

### Impact of High Polymer Modification on the Performance Characteristics of Asphalt Mixtures

Jhony Habbouche<sup>a</sup>, Elie Y. Hagg<sup>a</sup>, Murugaiyah Piratheepan<sup>a</sup>, and Peter E. Sebaaly<sup>a</sup>

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<sup>a</sup> University of Nevada Reno (UNR)

### Impact of Crumb Rubber Modifier Type and Blending Temperature on Asphalt Binder and Mixture Properties

Sreelatha Balamurugan<sup>a</sup>, Louay Mohammad<sup>a</sup>, Moses Akentuna<sup>a</sup>, William Daly<sup>a</sup>, Ioan Negulescu<sup>a</sup>, Samuel Cooper, III<sup>b</sup>, Samuel Cooper, Jr.<sup>b</sup>, and Gaylon Baumgardner<sup>c</sup>

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<sup>a</sup> Louisiana State University

<sup>b</sup> Louisiana Transportation Research Center

<sup>c</sup> Paragon Technical Services

### Recent Advances in Ground Tire Rubber Recycling in Midwest Pavements

Punyastok Rath<sup>a</sup>, Hamed Majidifard<sup>a</sup>, Behnam Jahangiri<sup>a</sup>, and William Buttlar<sup>a</sup>

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<sup>a</sup> University of Missouri, Columbia

**BY TITLE ONLY**

**Obtaining Asphalt Binders Rheological Properties from BBR Strength Test—The Effect of Loading Rate**

Tianhao Yan<sup>a</sup>, Mugurel Turos<sup>a</sup>, and Mihai Marasteanu<sup>a</sup>

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<sup>a</sup> University of Minnesota

1:15 – 5:00 PM

Technical Session 5 (Randy West)

**Component Materials Selection Guidelines and Evaluation Tools for Binder Blends and Mixtures with High Recycled Materials Content and Recycling Agents**

Amy Epps Martin<sup>a</sup>, Fawaz Kaseer<sup>b</sup>, Edith Arámbula-Mercado<sup>b</sup>, Akash Bajaj<sup>b</sup>, Jo Sias Daniel<sup>c</sup>, Elie Y Hajj<sup>d</sup>, Nathan Morian<sup>e</sup>, and Chibuike Ogbo<sup>c</sup>

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<sup>a</sup> Texas A&M University

<sup>b</sup> Texas A&M Transportation Institute

<sup>c</sup> University of New Hampshire

<sup>d</sup> University of Nevada – Reno

<sup>e</sup> Nevada Department of Transportation

**Evaluation and Comparison of Cracking Tests for Top-Down Cracking Resistance of Asphalt Mixtures**

Chen Chen<sup>a</sup>, Nathan Moore<sup>a</sup>, Randy West<sup>a</sup>, Fan Yin<sup>a</sup>, and Adam Taylor<sup>a</sup>

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<sup>a</sup> NCAT

**A Machine Learning Approach for the Prediction of Fracture Energy in Asphalt Mixtures**

Hamed Majidifard<sup>a</sup>, Behnam Jahangiri<sup>a</sup>, Amir Alavi<sup>a</sup>, and William Buttlar<sup>a</sup>

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<sup>a</sup> University of Missouri-Columbia

**Evaluating Aggregate Size Effects on Dynamic Modulus Using Gray Scale Analysis**

Sadie E Smith<sup>a</sup>, Airam M Morales<sup>a</sup>, and Andrew F Braham<sup>a</sup>

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<sup>a</sup> University of Arkansas

**Development and Validation of an Ideal Shear Rutting Test for Asphalt Mix Design and QC/QA**

Fujie Zhou<sup>a</sup>, Bill Crockford<sup>a</sup>, Jun Zhang<sup>a</sup>, Sheng Hu<sup>a</sup>, Jon Epps<sup>a</sup>, and Lijun Sun<sup>b</sup>

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<sup>a</sup> Texas A&M Transportation Institute

<sup>b</sup> Tongji University

**Separating Load from Moisture Effects in Wet Hamburg Wheel-Track Test**

Quan Lv<sup>a</sup> and Hussain U. Bahia<sup>b</sup>

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<sup>a</sup> Tongji University

<sup>b</sup> University of Wisconsin – Madison

**BY TITLE ONLY**

**Developing a Robust Modeling Approach for Pavement Performance Prediction and Optimization**

Parnian Ghasemi<sup>a</sup>, Mohamad Aslani<sup>a</sup>, Ronald Christopher Williams<sup>a</sup>, and Derrick Rollins<sup>a</sup>

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<sup>a</sup> Iowa State University