JHONY HABBOUCHE, Ph.D., P.E.
Western US Regional Engineer
Asphalt Institute (AI) | Engineering Team
2505 E. Williams Field Road Apt 3042, Gilbert, Arizona, 85295
(859) 537-7063 (Work) | (775) 219-3405 (Cell)
jhabbouche@asphaltinstitute.org | habbouche.jhony@gmail.com
/in/jhabbouche | 0000-0002-6216-3134 | Jhony Habbouche
https://www.asphaltinstitute.org/

PROFESSIONAL SUMMARY AND SKILL HIGHLIGHTS

- Active Engineer who works with state highway departments, counties, and cities in the Western region (AZ, CA, HI, NV, OR, and WA), providing support through communication of technical issues and information sharing, with the overall goal of improving the quality and performance of asphalt pavements.
- Highly motivated former Senior Research Scientist with expertise in conducting, managing, and implementing advanced research on innovative materials, mechanistic design and sustainability assessment of pavement systems, and the impact of climate change on the resilience of highway pavement infrastructure.
- Ability to identify transportation and pavement related challenges at local, state, national, and international levels and proficient in creating, planning, organizing, prioritizing, and leading research that addresses such issues and aligns with the highest priorities and needs of the Pavement community.
- Considerable knowledge of management and leadership principles and practices, having led, executed, and managed grants totaling more than 8.0 million dollars for projects with the Nevada, Florida, and Virginia Departments of Transportation.
- Strong communication skills and the ability to lead and collaborate effectively within a team; this includes the capability to effectively communicate highly technical information to diverse audiences, both orally and in writing.
- Excellent time management skills and a proven ability to deliver projects on time and within budget, capable of handling timely and unexpected changes effectively.
- Considerable knowledge in conducting workshops, seminars, presentations, and short courses related to pavement engineering and science for a diverse audience, including undergraduate and graduate students, and industry professionals. Demonstrated expertise in facilitating engaging and interactive learning experiences to enhance participants' understanding and skills.
- Actively contributing to the academic and professional community by serving on committees and engaging as a dedicated member of esteemed professional organizations, including Transportation Research Board (TRB), Association of Asphalt Paving Technologists (AAPT), American Society of Civil Engineers (ASCE), Academy of Pavement Science and Engineering (APSE), and others. Demonstrated commitment to scholarly rigor by serving as an Associate Editor for AAPT, an editor for the Transportation Research Record (TRR): the Journal of the Transportation Research Board (TRB), and an active reviewer for many prestigious journals such as TRR, ASCE, Construction Building Materials (CBM), International Journal of Pavement Engineering (IJPE), and others.

EDUCATION

- **Doctor of Philosophy in Civil and Environmental Engineering, May 2019**
  Pavement Engineering and Science Program, University of Nevada, Reno

Dissertation Topic / Title: Structural Coefficients of High Polymer Modified Asphalt Mixes Based on Mechanistic-Empirical Analyses and Full-Scale Pavement Testing

- **Master of Science in Civil and Environmental Engineering, December 2015**
  Pavement Engineering and Science Program, University of Nevada, Reno
  Thesis Topic / Title: Evaluation of Thin Asphalt Overlays for Pavement Preservation in Nevada
- **Bachelor of Science in Civil Engineering, July 2014**
  Structures and Buildings Program, Lebanese University, Faculty of Engineering II, Lebanon
  Capstone Project Topic / Title: Full Structural Design of the Golden Gate Suspension Bridge - San Francisco.

PRINCIPAL FIELDS OF INTEREST AND EXPERTISE

- Advanced design, testing, characterization, and model development for engineered paving materials (e.g., asphalt mixtures, soils, and unbound materials)
- Asphalt binder modification with focus on the use of high polymer contents, recycling agents, hybrid rubber, recycled plastics, and other additives and modifiers.
- Mechanistic/mechanistic-empirical analysis and structural monitoring for pavement structures.
- Full-scale pavement structure testing, evaluation, and numerical modeling.
- Assessment of sustainability and resilience of pavement systems.
- Evaluation and benefit-cost analysis of pavement maintenance and preservation treatments.
- Advanced data analytics and computer applications in Civil Engineering.

CERTIFICATION

- **Professional Engineer (P.E.)**, Virginia Department of Professional and Occupational Regulation, issued September 2020, License Number: 0402062687, Certificate Number: 062687.
- **Engineer Intern (E.I.T)**, Nevada State Board of Professional Engineers and Land Surveyors, February 28, 2017, Registration 0T7687.
- **CrossFit Level 2 Trainer (CF-L2)**, August 28th, 2023, valid until August 27th, 2028, Registration 01455863; Current Coach and CrossFit Trainer at CrossFit SPRC, https://www.crossfitsprc.com/about.

EXPERIENCE

- **Asphalt Institute (AI)**, Gilbert, Arizona (June 2024 – Present)
  Western US Regional Engineer, Engineering Team (June 2024 – Present)
  - Work with state highway departments, counties, and cities in the Western region (AZ, CA, HI, NV, OR, and WA), providing support through communication of technical issues and information sharing, with the overall goal of improving the quality and performance of asphalt pavements.
  - Develop, plan, and present technical training to promote best practices and technologies in all aspects of design and construction to provide long-life pavements. Audiences are diverse: materials suppliers, contractors, government agencies, consultants, etc.
  - Actively participate in or lead industry meetings and committees such as User/Producer Groups, AASHTO, TRB, AAPT, state conferences to represent the interests of the asphalt industry and remain current on most recent asphalt technology and issues.

- Support asphalt organizations such as State Asphalt Pavement Associations (SAPAs), UPGs, and Regional Pavement Preservation Partnerships, etc. This often includes serving on planning committees, giving presentations, or assisting/promoting AI at trade shows.
- Actively participate in state, regional and national -level projects to support the overall AI mission. Examples include but are not limited to assisting with research projects, developing training, providing presentations and training at state, regional and national events.
- Respond to requests for assistance in troubleshooting field issues or poor performance of in-place pavements. Address technical questions from member companies, public agencies and consultants related to issues of design, construction, quality control, maintenance, rehabilitation, sustainability, specifications, and regulations. Prioritize technical assistance to support AI members, followed by large specifiers of asphalt (public agencies).
- Communicate regularly with AI member companies via Quarterly Reports that are distributed through AI HQs. Discussions include industry issues and/or concerns, specification changes, policy changes, RE priorities, and overall binder or asphalt pavement state and regional trends.

- **Virginia Transportation Research Council (VTRC)**, Charlottesville, Virginia (March 2019 – June 2024)
  Senior Research Scientist, Pavements Team (January 2022 – June 2024)
  Research Scientist, Pavements Team (March 2019 – January 2022)
  - Conduct, manage, and implement research on innovative materials, design, construction, evaluation, maintenance, management, sustainability, resilience, and the impact of climate change for highway pavements and related geotechnical applications.
  - Conduct cutting-edge research in the field, staying abreast of the latest developments, and integrating new knowledge into ongoing projects.
  - Lead and participate in collaborative research initiatives, foster a culture of innovation and continuous improvement within the scientific community.
  - Collaborate with other scientists and team members, share knowledge and insights to enhance the overall research and project outcomes.
  - Contribute to the development and execution of research strategies, ensure alignment with organizational goals and objectives.
  - Generate comprehensive reports detailing research methodologies, results, conclusions, benefits, and potential implementation strategies.
  - Collaborate with research teams to synthesize complex data and experimental results into coherent and impactful publications, author and co-author technical papers for peer-reviewed journals and conferences, showcasing original research findings, and contributing to the scientific community.
  - Represent the organization at conferences, workshops, and other professional events, showcase research achievements and establish networks within the scientific community.
  - Assisted in developing the Virginia Department of Transportation statewide resilience plan that was released to the public in December 2022 – a comprehensive, formalized framework to incorporate resilience strategies into transportation planning, project development and delivery, operations, maintenance, and asset management.
  - Active participation in professional scientific organizations, contributing to committees, workshops, and conferences.
  - Oversee the AASHTO re:source accreditation of asphalt binders, asphalt mixtures, and aggregates for the Virginia Transportation Research Council (VTRC) asphalt binder and mixture laboratories.

- **University of Nevada, Reno** (August 2014 – March 2019)
  Research Assistant, Pavement Engineering and Science Program
  - Develop innovative asphalt mixture and/or improved processes for laying sustainable and resilient pavements that can resist traffic loading and harsh environmental conditions.
  - Assist highway agencies and contractors with new analysis procedures for pavement performance testing.
  - Perform various industry standard and innovative tests in the laboratory and on site in the field (e.g., Hveem, Marshall, and Superpave mix designs; basic, intermediate, and advanced mechanical testing of asphalt binders, mortars, mixtures, and aggregates).
  - Lead and/or assist in AASHTO re:source accreditation of asphalt binders, asphalt mixtures, and aggregates for the Western Regional Superpave Center (WRSC) laboratories (https://www.unr.edu/wrsc).
- **Nevada Department of Transportation (NDOT)**, Carson, Nevada (May 2016 – August 2016)
  Public Service Intern II
  - Conducted mix design and performance testing of laboratory and plant-produced engineered stress relief course (ESRC) interlayer mixtures for Nevada.
  - Performed analysis and backcalculation of Falling Weight Deflectometer (FWD) testing data from three NDOT rehabilitation projects: ESRC test sections on US95 (contract 3577), I580 Carson City Freeway, and LTPP SPS-10 WMA test sections in Washoe valley (contract 3598).
- **Omnium Technique d'étude de la Construction et de l'Equipement (OTCE) S.A.R.L**, Aoukar, Lebanon (June 2013 – September 2013)
  Structural Design Engineer Intern
  - Involved in the design of several structural projects in the Middle East.
  - Carried out calculations or load run down, preliminary designs, and bill of quantities for concrete structures.
- **Kfoury Engineering & Contracting S.A.R.L**, Antelias, Lebanon (July 2012 – September 2012)
  Site Engineer Intern
  - Involved in the design and inspection of a residential building in Dekwaneh Mar Roukoz, Lebanon ("Mar Roukouz 462" project).
- **Al-Azhar Construction**, Jeddah, Saudi Arabia (July 2011 – September 2011)
  Site Engineer Intern
  - Supervised finishing works in residential and office buildings in Jeddah.

TEACHING EXPERIENCE

- **Asphalt Institute (AI)**, Gilbert, Arizona (June 2024 – *Present*)
  Western US Regional Engineer (June 2024 – Present),
  Served as an instructor for the following workshops, seminars, and technical training:
  - Airfield Asphalt Pavement Inspector Certification (AA-PIC) (based on UFGS)
  - Constructing Quality Asphalt Pavements (CQAP)
  - Hot Mix Asphalt 101 (HMA 101)
  - Mix Design Technology Certification (MDTC)
  - Paving Inspector Certification (PIC)
  - Airfield Pavement Technical Workshop (APTW)
- **Virginia Transportation Research Council (VTRC)**, Charlottesville, Virginia (March 2019 – June 2024)
  Senior Research Scientist, Pavements Team (January 2022 – June 2024)

Research Scientist, Pavements Team (March 2019 – January 2022)

- Co-advise graduate students enrolled at the University of Virginia (UVA), Virginia Tech Transportation Institute (VTTI), North Carolina State University (NCSU), Rowan University, and University of Nevada Reno (UNR) on research projects, provide guidance, and foster their academic and professional development.
- Mentor and advise capstone projects at the University of Virginia (UVA), offer expertise to ensure successful project outcomes, and align with educational goals.
- Provide mentorship to interns, guide them in their roles, and facilitate a positive learning environment for their professional growth.

- **University of Nevada, Reno** (August 2018 – December 2018)
  Teaching Assistant, Pavement Engineering and Science Program
  CEE 377: Construction Materials Engineering and Testing
  - Served as the primary instructor, managing all teaching responsibilities for the class.
  - Taught three sessions per week and supervised a teaching assistant responsible for two laboratory sessions per week.
  - Updated the curriculum to align with current knowledge and industry practices, covering the syllabus, American Society of Civil Engineers (ASCE) code of ethics, aggregates, Portland cement, Portland cement concrete, asphalt binder, asphalt mixtures, wood, and metals.
  - Developed a new set of homework assignments with a revised style, emphasizing exposure to real laboratory/field data from ongoing research projects related to the evaluated topic.
  - Revised all laboratory handouts, incorporating "design sections" to enhance focus on one of the three major course objectives: "To provide students with the ability to utilize techniques, skills, and modern tools in engineering by designing Portland cement concrete, hot mix asphalt mixtures, wood, and metals to be tested in the laboratory."
  - Increased emphasis on technical writing, addressing a need identified through an in-class survey where over 80% of students lacked experience in writing formal technical reports before the class; observed a significant improvement, particularly in formal cover letter writing.
  - Achieved an average instructor knowledge and confidence rating of 3.5 out of 4 based on student evaluations (100% response rate).

  Filled as a Substitute-Teacher for the following courses:
  - MATH 127 (Undergraduate): Trigonometry
  - MATH 172 (Undergraduate): Business Calculus
  - CEE 377 (Undergraduate): Construction Materials
  - CEE 431/631 (Undergraduate / Graduate): Pavement Design and Analysis
  - CEE 733 (Graduate): Advanced Pavement Analysis Design and Management
  - CEE 771 (Graduate): Special Engineering Problems: Advanced Modeling and Analysis of Bituminous Materials.

COMPUTER SKILLS

- **Office**: Highly proficient in Microsoft Word, Excel, Access, Outlook, and PowerPoint.
- **Programming software**: Visual Basic (VB), C, C++, Java, and MATLAB.
- **CAD software**: AutoCAD, AutoCAD Civil 3D, and MathCAD.
- **Engineering software**: Rhea™, TxACOL, 3D-Move Analysis, LTPP Bind version 3.2, AASHTOWare® Pavement ME, SpectroPave 4 Pro, ILLI-PAVE 2005, MODULUS 6.1, PAVEXPRESS, Micro Paver version 7.0.5, FLAC^{3D} version 5.0, PLAXIS^{3D}, SEEP, Wall-UP, Project Management Primavera, Autodesk Robot Structural Analysis Professional, Arch-Effel, S-Concrete, and Synchro 7.

- **Statistical Software**: R-package and Minitab.

AWARDS

Virginia Transportation Research Council (VTRC)

- ***VTRC Jack H. Dillard Best Paper Award,*** "*Simple and Practical Tests for Rutting Evaluation of Asphalt Mixtures in the Balanced Mix Design Process*" (with S. Diefenderfer and I. Boz), 2023.
- ***VTRC Director's Award,*** given to a VTRC staff member who has made highly significant contributions that ensure the continued success of the organization through research, technical assistance, implementation, or special assignments on behalf of the Virginia Department of Transportation (VDOT), 2022.
- ***VTRC Jack H. Dillard Best Paper Award,*** "Balanced Mix Design for Surface Asphalt Mixtures: Phase I: Initial Roadmap Development and Specification Verification" (with S. Diefenderfer and I. Boz), 2021.
- ***Horizon Award***, for Researcher who has made a Significant Impact on the State of Practice in Transportation, Virginia Transportation Research Council, 2020.

Association of Asphalt Paving Technologists (AAPT)

- ***2023 Board of Directors Award of Appreciation***, for contribution to the inaugural AAPT 2022/2023 Annual Report.
- ***2023 President's Award***, in recognition of service as Chairman of the Communications Committee for the years 2021 and 2022.

ASTM Outstanding Article Award

- ***2016 Award for Outstanding Article in Advances in Civil Engineering Materials,*** ASTM International Committee on Publications.

National Academy of Sciences, Engineering, and Medicine

- ***Blue Ribbon Award***, given for the Transportation Research Board (TRB) AKP30 Standing Committee on Design and Rehabilitation of Asphalt Pavements, member and Committee Communication Coordinator (CCC), 2024.
- ***Blue Ribbon Award***, given for the Transportation Research Board AHD00(2) Subcommittee on Maintenance and Preservation for Young Members, member, Maintenance and Preservation Section AHD00, 2020.

University of Nevada, Reno (UNR)

- ***Outstanding Graduating Graduate Student Award***, Graduate Student Association, UNR's Honor the Best Ceremony, Special Recognition by President M. Johnson, April 2019.
- ***Outstanding International Graduate Student Award***, Graduate Student Association, University of Nevada, Reno, Years 2016, 2017, and 2018.
- ***Unity in Diversity Conference Award***, Graduate Student Association, University of Nevada, Reno, March 2016.

Others

- ***Ramzi Irani Award for Civil Engineering Excellence, Major of Promotion***, Lebanese University, Faculty of Engineering, Roumieh, Lebanon, May 2013.
- ***Bahia El Hariri Award for Lebanese Baccalaureate Excellence***, Lebanon, August 2009.

- ***"Born to Excel Award" and "Salim Wardeh Award" for Lebanese Baccalaureate Excellence***, September 2009.

PROFESSIONAL MEMBERSHIP

- **Association of Asphalt Paving Technologists (AAPT)**
  - Associate Member (January 2018 – Present)
  - Associate Editor (March 2023 – Present)
  - Communications Committee – Chair (January 2021 – April 2023)
  - Communications Committee – Member (January 2021 – Present)
  - Membership Committee – Member (April 2020 – Present)
- **American Society of Civil Engineers (ASCE),**
  - Young Member of the Highway Pavement Committee (August 2017 – Present) https://www.asce.org/templates/membership-communities-committee-detail.aspx?committeeid=000000885481
- **American Society for Testing and Materials (ASTM International),**
  - Member (July 2016 – Present)
- **Transportation Research Board**
  - ***Operations and Preservation Group Young Member Council,***
    - *Member* (February 2018 – April 2020); Involved with the team organizing and leading the "*3-Minute Thesis Competition: Concise Portrayal of Research Discovery to Non-specialist Audience*" for two years in a row.
  - ***AKM20, Standing Committee on Binders for Flexible Pavement,***
    - Full Member (April 2023 – Present)
  - ***Transportation Infrastructure Group (TIG) Executive Committee***
    - Member and Representative to the Young Members Coordinating Council (August 2020 – Present)
  - ***Transportation Infrastructure Group (TIG) Young Member Subcommittee***
    - Member (August 2020 – Present)
    - Chair (April 2024 – Present)
  - ***AKP30, Standing Committee on Design and Rehabilitation of Asphalt Pavement,***
    - Full Member (April 2024 – Present)
    - Committee Communications Coordinator (April 2021 – April 2024)
- **University of Nevada, Reno**
  - Central Committee for Differential Fees
    - Representative of the Graduate Students at the College of Engineering for Fiscal Year (FY) 2017 and 2018.
  - Civil & Environmental Engineering (CEE) Differential Fees Committee,
    - Representative of the CEE Graduate Students for FY 2016, 2017, and 2018.

COMPLETED / ACTIVE RESEARCH PROJECTS AT VTRC

- ***Development and Deployment of Innovative Asphalt Pavement Technologizes***, funded by Federal Highway Administration (FHWA) (693JJ323NF00012), led by University of Nevada Reno (UNR), with support from National Center for Asphalt Technology (NCAT), Asphalt Institute (AI), Virginia Transportation Research Council (VTRC), Asphalt Testing Solutions and Engineering (ATSE), and National Asphalt Pavement Association (NAPA) – ***Former Project Manager on behalf of VTRC and Current Subject Manager Expert on behalf of AI***, September 2023 – September 2026 (Budget: $6,250,000).

- ***Characterizing and Improving Binder Availability and Activity in Asphalt Mixtures with Reclaimed Asphalt Pavement (RAP)***, Virginia Department of Transportation, Project 124560, ***PI***, with North Carolina State University, November 2023 – April 2026 (Budget: $488,523), https://vtrc.virginia.gov/projects/all-projects/124560/.
- ***Ruggedness Study of Specimen Preparation and Fine-Tuning of Test Methods for IDT-CT and IDT-HT***, Virginia Department of Transportation, Project 124496, ***PI***, with National Center for Asphalt Technology at Auburn University, November 2023 – June 2025 (Budget: $241,447), https://vtrc.virginia.gov/projects/all-projects/124496/.
- ***Evaluation of Spray-on Rejuvenators – Field Trials***, Virginia Department of Transportation, Project 124401, ***Co-PI***, September 2023 – February 2026 (Budget: $277,493), https://vtrc.virginia.gov/projects/all-projects/124401/.
- ***Evaluation of Balanced Mix Design (BMD) Surface Mixtures with Conventional and High RAP Contents under Laboratory-Scale and Full-Scale Accelerated Pavement Testing (APT)***, Virginia Department of Transportation, Project 124496, ***PI***, with Virginia Tech and Transportation Institute, August 2023 – December 2023 (Budget: $15,005), https://vtrc.virginia.gov/projects/all-projects/124200/.
- ***Federal Highway Administration (FHWA) Climate Challenge – Quantifying Greener Pavements in Virginia***, Virginia Department of Transportation, Project 124057, ***Co-PI***, with Virginia Tech and Transportation Institute, July 2023 – October 2025 (Budget: $483,026), https://vtrc.virginia.gov/projects/all-projects/124057/.
- ***Sustainable Surface Mixtures Incorporating Recycled Plastic Waste and High RAP Contents***, Virginia Department of Transportation, Project 122604, ***PI***, November 2022 – October 2025 (Budget: $1,033,774), https://vtrc.virginia.gov/projects/all-projects/122604/.
- ***Developing Long-Term Aging Protocols for Cracking Performance Evaluation of Asphalt Mixtures in Virginia***, Virginia Department of Transportation, Project 122013, ***Co-PI***, with University of Nevada Reno, July 2022 – November 2024 (Budget: $673,878), https://vtrc.virginia.gov/projects/all-projects/122013/.
- ***Inter-Laboratory Study for the Indirect Tensile Test at High Temperature and Rapid Rutting Test***, Virginia Department of Transportation, Project 121388, ***Co-PI***, May 2022 – November 2023 (Budget: $249,311), https://vtrc.virginia.gov/projects/all-projects/121388/.
- ***SUNY CANTON – Summer 2022 FAC Contribution – Data Compilation and Analysis***, Virginia Department of Transportation, Project 121073, ***Co-PI***, with The State University of New York at Canton, June 2022 – August 2022 (Budget: $14,363).
- ***Mechanistic-Based Evaluation of Performance Thresholds for Engineered Surface Asphalt Mixtures***, Virginia Department of Transportation, Project 120747, ***PI***, with North Carolina State University, February 2022 – June 2024 (Budget: $548,142), https://vtrc.virginia.gov/projects/all-projects/120747/.
- ***Evaluation of Recycled Plastic Modified Asphalt Mixtures: Phase I***, Virginia Department of Transportation, Project 120030, ***PI***, September 2021 – October 2023 (Budget: $384,762), https://vtrc.virginia.gov/projects/all-projects/120030/.
- ***Balanced Mix Design for Surface Asphalt Mixtures: 2020 and 2021 Field Trials***, Virginia Department of Transportation, Project 119857, ***Co-PI***, June 2021 – December 2022 (Budget: $250,438).

- ***Evaluating the Use of Engineered Additives to Enhance the Performance Properties of Asphalt Binders and Mixtures***, Virginia Department of Transportation, Project 119821, ***PI***, July 2021 – June 2023 (Budget: $325,002).
- ***Balanced Mix Design for Surface Asphalt Mixtures: 2021 and 2022 Plant Mix Schedule Pilots***, Virginia Department of Transportation, Project 119819, ***Co-PI***, June 2021 – May 2023 (Budget: $335,870).
- ***Round Robin Testing Program for the Indirect Tensile Cracking Test (IDT-CT) at Intermediate Temperature***, Virginia Department of Transportation, Project 118733, ***PI***, March 2021 – June 2022 (Budget: $233,343.00).
- ***Evaluating Recycling Agents' Acceptance for Virginia: Test Protocols and Performance-Based Threshold Criteria***, Virginia Department of Transportation, Project 117566, ***PI***, with North Carolina State University, July 2020 – January 2023 (Budget: $467,438).
- ***IDT Cracking Test Round Robin***, Virginia Department of Transportation, Project 116473, ***Co-PI***, November 2019 – August 2020 (Budget: $116,610).
- ***Balanced Mix Design for Asphalt Mixtures: High RAP Field Trials***, Virginia Department of Transportation, Project 115763, ***Co-PI***, June 2019 – March 2021 (Budget: $304,843).
- ***Feasibility of Using Monotonic Loading-Based Tests to Evaluate Rutting Performance of Asphalt Mixtures***, Virginia Department of Transportation, Project 117336, ***Co-PI***, with University of Virginia, May 2020 – November 2022 (Budget: $375,894).
- ***Evaluation of Paving Fabric Interlayers for Preventing Reflective Cracking in Asphalt Pavements***, Virginia Department of Transportation, Project 112002, ***Co-PI***, January 2018 – May 2020 (Budget: $99,031).
- ***Performance Mixture Design for Asphalt Mixtures: Phase I, Roadmap and Specification Development***, Virginia Department of Transportation, Project 112037, ***Co-Principal Investigator (Co-PI)***, July 2019 – December 2021 (Budget: $455,874).
- ***Field Performance and Economic Analysis of Pavement Sections with Highly Polymer-Modified Asphalt Overlays***, Virginia Department of Transportation, ***Principal Investigator (PI)***, May 2019 – February 2021 (Budget: $216,187).
- ***Rapid Tests and Specifications for Construction of Asphalt-treated Cold Recycled Pavements***, National Cooperative Highway Research Program (NCHRP), Project 09-62, ***Contributor***, with University of California Pavement Research Center, University of Nevada - Reno, Virginia Tech Transportation Institute, and Auburn University, June 2017 – June 2020 (Budget: $999,753), https://www.nap.edu/download/25971.

RESEARCH PROJECT EXPERIENCES AT UNR

- ***Evaluation of Structural Coefficient for High Polymer Asphalt Mixes in Florida***, Florida Department of Transportation (FDOT), Project BE321, March 2017 – June 2019.
- ***Evaluation of Polymer and Tire-Rubber Modified Asphalt Stress Relief Course Interlayers for Nevada***, Alon Asphalt Company, August 2016 – January 2017.
- ***Pavement Design and Materials,*** Nevada Department of Transportation, April 2014 – Present.
  - *Task 3: Analysis of FWD Data and* Preparation of Backcalculation Workshops.
  - *Task 6: Monitor the Performance of the Stress Relief Course (SRC).*

- ***The Effects of Recycling Agents on Asphalt Mixtures with High RAS and RAP Binder Ratios***, National Cooperative Highway Research Program (NCHRP) Project 09-58, Transportation Research Board, April 2014 – July 2014.
- ***Laboratory Evaluation of Thin Asphalt Concrete Overlays for Pavement Preservation***, SOLARIS Consortium, Tier 1 University Transportation Center, U.S. Department of Transportation, August 2014 – February 2016.

SERVICES

Technical Activities

- ***National Cooperative Highway Research Program (NCHRP)***
  - **Panel Member – NCHRP Project 09-71**: Guidance to Develop Optimized Framework of Asphalt Mixture Performance Testing for Balanced Mix Design and Acceptance (BMD&A), https://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=5505.
  - **Advisor and Panel Member - IDEA 20-30/IDEA Project 229**: Lab Dielectric Measurement System (LDMS) for Asphalt Bulk Specific Gravity Determination, https://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=5063.
- ***Virginia Transportation Research Council, Technical Review Panel (TRP) Member***
  - Evaluation of VDOT Chip Seal Practices: Materials and Design, Virginia Department of Transportation, Project 118820, https://vtrc.virginia.gov/projects/all-projects/118820/.
  - Dissimilar Metal Welds between ASTM A709 Grade 50CR and Other Bridge Steels, Virginia Department of Transportation, Project 120151, https://vtrc.virginia.gov/projects/all-projects/120151/.
  - Evaluation of Structural Adhesives as "Steel Grouting" in Steel Bridge Repairs, Virginia Department of Transportation, Project 122191, https://vtrc.virginia.gov/projects/all-projects/122191/.
  - Improved Beam End Reinforcement Detail for PCBTs with Debonded and /or Draped Strands, Virginia Department of Transportation, Project 122311, https://vtrc.virginia.gov/projects/all-projects/122311/.
  - Addressing Fly Ash Shortage with Limestone Calcined Clay Cement, Virginia Department of Transportation, Project 123872, https://vtrc.virginia.gov/projects/all-projects/123872/.

Editorial Activities

- **Associate Editor for the Association of Asphalt Paving Technologists** (March 2023 – Present).
- **Editor for the Transportation Research Board: Journal of the Transportation Research Record (TRR)** (January 2021 – Present).
- **Technical review service for the following journals**
  - Journal of the Transportation Research Board (TRB) (AKM20, AKM30, AKM40, AKP30, AKG80, AKT30, AKT20, and AKP40 committees) (previously known as AFD60, AFK20, AFK40, AFK50, AFS70, AHD18, and AHD20 committees)
  - International Journal of Pavement Engineering (IJPE)
  - Journal of Advances in Civil Engineering Materials (ACEM)
  - International Journal of Road Materials and Pavement Design (RMPD)
  - American Association of Civil Engineers (ASCE): Journal of Transportation Part B
  - American Association of Civil Engineers (ASCE): Journal of Materials in Civil Engineering (JMCE)
  - International Journal of Pavement Research and Technology (IJPRT)

PUBLICATIONS

Peer Reviewed Journal Publications

- Tong, B. ***J. Habbouche***, S.D. Diefenderfer, and G.W. Flintsch. Multi-Level Performance Evaluation of BMD Surface Mixtures with Conventional and High RAP Contents: A Case Study in Virginia, Internation Journal of Pavement Engineering, Vol 25 (1), 2024, https://doi.org/10.1080/10298436.2024.2325609.
- Tong, B. ***J. Habbouche***, G.W. Flintsch, and B.K. Diefenderfer. Rutting Performance Evaluation of BMD Surface Mixtures with Conventional and High RAP Contents under Full-Scale Accelerated Testing, Materials, MDPI, 2023, https://doi.org/10.3390/ma16247611.
- Seitllari, A., I. Boz, ***J. Habbouche***, and S. Diefenderfer. Using mechanistic–empirical based analysis to evaluate rutting performance thresholds for balanced mix design tests, Construction and Building Materials, 2023, https://doi.org/10.1016/j.conbuildmat.2023.132762.
- ***Habbouche, J.***, I. Boz, and S. Diefenderfer. Impact of Device Type and Specimen Preparation on the Variability of the Indirect Tensile Cracking Test (IDT-CT) at Intermediate Temperatures, Transportation Research Record: Journal of the Transportation Research Board, https://doi.org/10.1177/03611981221150242.
- Gulzar, S., A. Fried, J. Preciado, B.S. Underwood, C. Castorena, ***J. Habbouche***, and I. Boz. Towards sustainable roads: A State-of-the-art review on the use of recycling agents in recycled asphalt mixtures, Journal of Cleaner Production, https://doi.org/10.1016/j.jclepro.2023.136994.
- Boz, I., ***J. Habbouche***, S. Diefenderfer, G. Coffey, A. Seitllari, and O. Ozbulut. Evaluating the Rutting Potential of Asphalt Mixtures with Simple and Practical Tests, Transportation Research Record: Journal of the Transportation Research Board, https://doi.org/10.1177/03611981231207089.
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SELECTED PROFESSIONAL PRESENTATIONS

Professional Meetings

- ***Habbouche, J. (Presenter)***, *"Towards Sustainable Paving – Virginia's Initial Efforts to Incorporate Recycled Plastic Waste into Asphalt Mixtures*," AKM10 Standing Committee on Production and Use of Asphalt, Washington D.C., June 28-29, 2023.
- ***Habbouche, J. (Presenter)***, E.Y. Hajj, and P.E. Sebaaly, *"Structural Coefficients of High Polymer Modified Asphalt Mixes Based on Mechanistic-Empirical Analyses and Full-Scale Pavement Testing*," AFD60 Standing Committee on Design and Rehabilitation of Asphalt Pavements, Washington D.C., January 14, 2019.
- ***Habbouche, J. (Presenter)***, E.Y. Hajj, and P.E. Sebaaly, *"Properties of High Polymer Modified Asphalt Binders as a Function of Oxidative Aging*," AFK20 Standing Committee on Asphalt Binders, Washington D.C., January 14, 2019.
- ***Habbouche, J. (Presenter)***, E.Y. Hajj, and P.E. Sebaaly, *"Mechanistic-Based Approach for Analysis of Reflective Cracking using Stress Relief Course Interlayer: Case Study, US95 Las Vegas Nevada*," AFK50 Standing Committee on Structural Requirements of Asphalt Mixtures, Washington D.C., January 10, 2018.
- ***Habbouche, J. (Presenter)***, E.Y. Hajj, and P.E. Sebaaly, *"Preliminary Economic Analysis of Thin Asphalt Concrete Overlay in Nevada*," AHD18 Standing Committee on Pavement Preservation, Washington D.C., January 10, 2017.

Conference and Workshops

- ***Habbouche, J. (Presenter)***, "*Engineered Frameworks for Evaluating the Use of Recycling Agents in Surface Asphalt Mixtures for Virginia,"* Virginia Asphalt Association Mid-Atlantic Asphalt Expo and Conference, Richmond, Virginia, December 2023.
- ***Habbouche, J. (Presenter)***, "*Assessment of High RAP Surface Mixtures with Recycling Agents and/or Softer Binders in Virginia: Towards Sustainable Paving*," Southeastern Asphalt User Producer Group Annual Meeting, Little Rock, Arkansa, November 2023.

- ***Habbouche, J. (Presenter)***, "*Engineered Frameworks for Evaluating the Use of Recycling Agents in Surface Asphalt Mixtures for Virginia,"* Association of Modified Asphalt Producers 2023 Annual Conference, Jacksonville, FL, October 2023.
- ***Habbouche, J. (Presenter)***, "*Evaluation of Hybrid Rubber Modified Asphalt (HRMA) Engineered Additives for Asphalt Binder Modification in Virginia,"* American Society of Civil Engineers (ASCE) Pavement Conference, Austin, TX, June 2023.
- ***Habbouche, J. (Presenter)***, "*Towards Sustainable Paving – Virginia's Initial Efforts to Incorporate Recycled Plastic Waste into Asphalt Mixtures,"* American Society of Civil Engineers (ASCE) Pavement Conference, Austin, TX, June 2023.
- ***Habbouche, J.*** "*Evaluation of High RAP Asphalt Mixtures Designed Using Balanced Mix Design Concept under Laboratory-Scale and Full-Scale Accelerated Testing,"* American Society of Civil Engineers (ASCE) Pavement Conference, Austin, TX, June 2023.
- ***Habbouche, J. (Presenter)***, "*Asphalt Additives (Plastics/GPR/etc.),"* VDOT Voice's Webinar, June 2023.
- ***Habbouche, J. (Presenter)***, "*Responsible Incorporation of High RAP Contents and Recycling Agents in Surface Asphalt Mixtures: A Virginia Approach Towards Sustainable Paving,"* VTRANS SEMINAR: RESPONSIBLE USE OF HIGHER RAP IN ASPHALT MIXTURES, Vermont, April 2023.
- ***Habbouche, J. (Presenter)***, "*Sustainable Asphalt Mixtures Incorporating Recycled Plastic Waste: Virginia's 2021 and 2022 Efforts,"* Recycled Plastic in Asphalt Pavements: Peer Exchange of Scientific Research, Fall River, Massachusetts, 2023.
- ***Habbouche, J. (Presenter)***, "*Virginia and Utah Experience with High Polymer-Modified Asphalt Mixtures,"* Utah Asphalt Association Annual Conference, Salt Lake City, Utah, March 2023.
- ***Habbouche, J. (Presenter)***, I. Boz, and S.D. Diefenderfer. "*Impact of Device Type and Specimen Preparation on the Variability of the Indirect Tensile Cracking Test (IDT-CT) at Intermediate Temperature*," Transportation Research Board (TRB) Annual Meeting, Washington, D.C., January 2023.
- Diefenderfer, S. (Presenter), ***J. Habbouche***, and I. Boz, I. "*Using IDT-CT Data for Quality Control and Acceptance*," Transportation Research Board (TRB) Annual Meeting, Washington, D.C., January 2023.
- Preciado, J. (Presenter), S. Gulzar, A. Fried, ***J. Habbouche***, I. Boz, C. Castorena, and B.S. Underwood. "*Benchmarking Recycled Binder Blends Using Statistical Analysis: A Case Study of Virginia and North Carolina*," Transportation Research Board (TRB) Annual Meeting, Washington, D.C., January 2023.
- Preciado, J. (Presenter), S. Gulzar, A. Fried, C. Castorena, B.S. Underwood, ***J. Habbouche***, and I. Boz. "A Framework to Evaluate Recycling Agents Based on Low-Temperature Rheological Performance," Transportation Research Board (TRB) Annual Meeting, Washington, D.C., January 2023.
- ***Habbouche, J.*** "*AKM20 – Sustainability Subcommittee Task Force on Target Audience and Survey of Various Entities,"* Transportation Research Board (TRB) Annual Meeting, Washington, D.C., January 2023.
- ***Habbouche, J.*** "*Research Advances Incorporating Recycled Plastic into Asphalt Mixtures,"* Transportation Research Board (TRB) Annual Meeting, Washington, D.C., January 2023.

- ***Habbouche, J. (Presenter)***. "*Sustainable Asphalt Mixtures Incorporating Recycled Plastic Waste: Virginia's 2021 & 2022 Field Trials,"* Virginia Asphalt Association Mid-Atlantic Asphalt Expo and Conference, Richmond, Virginia, December 2022.
- ***Habbouche, J. (Presenter)***. "*Interlaboratory Study for the Indirect Tensile Cracking Test (IDT-CT) at Intermediate Temperature,"* Back to Basics Workshop, Virginia Asphalt Association, Fredericksburg, Virginia, November 2022.
- ***Habbouche, J. (Presenter)***. "*Sustainable Asphalt Mixtures Incorporating Recycled Plastic Waste: Virginia's Efforts,"* Southeastern Asphalt User / Producer Group (SEAUPG), Raleigh, North Carolina, November 2022.
- ***Habbouche, J. (Presenter)***, I. Boz, B.K. Diefenderfer, D. Jones, and A.J.T. Hand. "*Laboratory Performance Evaluation of Asphalt-treated Cold recycled Mixtures Using Existing Practical Tests,"* Association of Asphalt Paving Technologists (AAPT) Annual Meeting, San Antonio, Texas, September 2022.
- ***Habbouche, J (Presenter).*** "*Responsible Incorporation of High RAP Contents and Recycling Agents in Surface Asphalt Mixtures: Virginia's Approach,"* Association of Modified Asphalt Producers 2022 Annual Conference, Houston, Texas, February 2022.
- ***Habbouche, J (Presenter).*** "*Towards Sustainable Paving – Virginia's Efforts on Binder Modification using Hybrid Rubber and Recycled Plastic Waste,"* Association of Modified Asphalt Producers 2022 Annual Conference, Houston, Texas, February 2022.
- ***Habbouche, J (Presenter).*** "*Evaluation of In-Service Field Performance of High Polymer-Modified Asphalt Concrete Overlays,"* Transportation Research Board (TRB) Annual Meeting, Washington, D.C., January 2022.
- ***Habbouche, J (Presenter).*** "*Laboratory Performance Evaluation of Asphalt-Treated Cold Recycled Mixtures Using Simple and Practical Current Tests,"* Transportation Research Board (TRB) Annual Meeting, Washington, D.C., January 2022.
- ***Habbouche, J (Presenter).*** "*A Review from Multiple Perspectives for the State of the Practice on the Use of Recycled Asphalt Materials and Recycling Agents in Asphalt Concrete Surface Mixes,"* Transportation Research Board (TRB) Annual Meeting, Washington, D.C., January 2022.
- ***Habbouche, J (Presenter).*** "*Virginia's Initial Efforts to Evaluate Recycled Plastic Modified (RPM) Asphalt Mixtures,"* Transportation Research Board (TRB) Annual Meeting, Washington, D.C., January 2022.
- ***Habbouche, J. (Presenter)***. "*Virginia's Balanced Mix Design and Round Robin Testing Program for the Indirect Tensile Cracking Test (IDT-CT) at Intermediate Temperature,"* Virginia Asphalt Association Mid-Atlantic Asphalt Expo and Conference, Richmond, Virginia, December 2021.
- ***Habbouche, J. (Presenter)***, I. Boz, B.S. Underwood, C. Castorena, S. Gulzar, A. Fried, and J. Preciado. "*State of the Practice on the Use of Recycling Agents in Asphalt Mixtures: Internet Surveys, Best Practices, and Lessons Learned from Multiple Perspectives,"* Association of Asphalt Paving Technologists (AAPT) Annual Meeting, Nashville, Tennessee, September 2021.
- ***Habbouche, J. (Presenter)***, I. Boz, and S.D. Diefenderfer. "*Validation of Performance-Based Specifications for Surface Asphalt Mixtures in Virginia,"* Association of Asphalt Paving Technologists (AAPT), Annual Meeting, Nashville, Tennessee, September 2021.
- ***Habbouche, J. (Presenter)***, I. Boz, and B.K. Diefenderfer. "*Multi-Level Laboratory Performance Evaluation of Conventional and High Polymer-Modified Asphalt Mixtures,"* Association of Asphalt Paving Technologists (AAPT) Annual Meeting, Nashville, Tennessee, September 2021.

- ***Habbouche, J. (Presenter)***, I. Boz, B.K. Diefenderfer, and S.H. Adel. *"Field Performance Evaluation of Pavement Sections with High Polymer-Modified Asphalt Concrete Overlays,"* American Society of Civil Engineers (ASCE), International Airfield and Highway Pavements Conference, June 2021.
- Boz, I. (Presenter), ***J. Habbouche***, and S. Diefenderfer. *"The Use of the Indirect Tensile Test to Evaluate the Resistance of Asphalt Mixtures to Cracking and Moisture-Induced Damage,"* American Society of Civil Engineers (ASCE), International Airfield and Highway Pavements Conference, June 2021.
- ***Habbouche, J. (Presenter)***, P.E. Sebaaly, E.Y. Hajj, and M. Piratheepan. "*Full-Scale Pavement Testing of a High Polymer Modified Asphalt Concrete Mixture,"* RILEM International Symposium on Bituminous Materials (ISBM), Lyon, France, December 2020.
- ***Habbouche, J. (Presenter)***, E.Y. Hajj, P.E. Sebaaly, and A.J.T. Hand, *"Fatigue-Based Structural Layer Coefficient of High Polymer-Modified Asphalt Mixtures,"* accepted for presentation at the 99th Transportation Research Board Annual Meeting, January 2019.
- ***Habbouche, J. (Presenter)***, and H. Nair, *"Damage Assessment of Existing Asphalt Pavements for Mechanistic-Empirical Rehabilitation Design in Virginia: a Hybrid Approach,"* Accepted for Lectern Presentation at the Pavement Evaluation 2019 Conference, Roanoke, VA, USA, September 17-19, 2019.
- ***Habbouche, J.***, E.Y. Hajj, and R. Kluttz (Presenter), *"Impact of High-Polymer Modification on Rheological and Chemical Properties of Asphalt Binders,"* Accepted for Lectern Presentation at the 56th Petersen Asphalt Research Conference (PARC), Laramie, WY, USA, July 15-17, 2019.
- ***Habbouche, J. (Presenter)***, E.Y. Hajj, and P.E. Sebaaly, *"Impact of High Polymer Modification on Performance Characteristics of Asphalt Mixtures,"* Lectern Presentation at the 94th Association of Asphalt Pavement Technologists (AAPT) Annual Meeting, Fort Worth, TX, USA, March 06, 2019.
- Morian, N., E.Y. Hajj (Presenter), S. Pournoman, ***J. Habbouche***, and D.D. Batioja-Alvarez, *"Low Temperature Behavior of Asphalt Binders, Mortars, and Mixtures with High Recycled Materials Content,"* Lectern Presentation at the 93rd Association of Asphalt Pavement Technologists (AAPT) Annual Meeting, Jacksonville, FL, USA, March 21, 2018.
- ***Habbouche, J. (Presenter)***, E.Y. Hajj, P.E. Sebaaly, *"Laboratory and Large-Scale Evaluation of High-Polymer Modified Asphalt Mixtures,"* Doctoral Student Workshop, Transportation Research Board, 97th Annual Meeting, Washington DC, January 7, 2016.
- ***Habbouche, J. (Presenter)***, E.Y. Hajj, N.E. Morian, P.E. Sebaaly, M. Piratheepan, *"Reflective Cracking Relief Interlayer for Asphalt Pavement Rehabilitation: From Development to Demonstration,"* Lectern Presentation at the 92nd Association of Asphalt Pavement Technologists (AAPT) Annual Meeting, Newport Beach, CA, USA, March 19, 2017.
- ***Habbouche, J. (Presenter)***, and E.Y. Hajj, *"FWD Backcalculation (Part I) & Pavement ME Rehabilitation Design (Part II) for Flexible Pavements,"* Workshop organized and presented by the Pavement Material and Science Program at the University of Nevada Reno (UNR) for Nevada Department of Transportation (NDOT), Reno, NV, March 2 and 16, 2017.
- ***Habbouche, J. (Presenter)***, E.Y. Hajj, and P.E. Sebaaly, *"Laboratory Evaluation of Thin Hot-Mix Asphalt Overlays for Pavement Preservation*," 95th Transportation Research Board (TRB) Annual Meeting, Paper No. 16-2597, Washington D.C., January 13, 2016.

PROFESSIONAL DEVELOPMENT

Webinars

- ***Data Science Applications in Pavement Engineering***, Association of Asphalt Pavement Technologists (AAPT), November 2023.
- ***Alternative Binders for Flexible Pavements***, Association of Asphalt Pavement Technologists (AAPT), June 2023.
- ***Best Practices During Asphalt Production and Paving***, Association of Asphalt Pavement Technologists (AAPT), March 2023.
- ***Recent Advances in the Use of Rubber-Modified Asphalt***, Association of Asphalt Pavement Technologists (AAPT), November 2022.
- ***Strategies to Improve Pavement Resilience***, Association of Asphalt Pavement Technologists (AAPT), June 2022.
- ***Polymer-Modified Asphalt: State of the Practice and Applications***, Association of Asphalt Pavement Technologists (AAPT), March, 2022.
- ***Incorporation of High-RAP/RAS: Lessons Learned and Knowledge Gaps***, Association of Asphalt Pavement Technologists (AAPT), November, 2021.
- FHWA Sustainable Pavement Program: ***Sustainable Pavement Construction*** Webinar, 2019-2020.
- ***Durable Asphalt Pavements: Part I Materials; Part II Design; Part III Production and Construction; and Part IV Preservation***, Association of Asphalt Pavement Technologists (AAPT), October – November, 2019.
- ***Evaluation of Superheavy Load (SHL) Movement on Flexible Pavements***, Prepared and Presented by Elie Y. Hajj, Ph.D., Transportation Research Board, April 23, 2019.
- ***Specialization in Asphalt Sustainability Implementation Series: Tools – Creating a Successful Sustainability Program***, Prepared and Presented by Adam Hand, Ph.D., P.E., December 14, 2016.
- ***PaveXpress Version 3.0 – New Linear Elastic Analysis and Costing Module***, November 4, 2016.
- ***Determination of In-Place Elastic Layer Modulus: Backcalculation Methodology and Procedures***, Organized by TRB Committee on pavement Structural Modeling and Evaluation, October 25, 2016.
- ***Validation of Guidelines for Evaluating the Moisture Susceptibility of Warm Mix Asphalt Technologies***, Organized by TRB, September 28, 2016.
- ***Development and Implementation of the Reflective Cracking Model in the Mechanistic-Empirical Pavement Design Guide***, organized by TRB standing committee on Pavement Rehabilitation, National Cooperative Highway Research Program, August 17, 2016.
- ***Thin 6.3 mm Hot Mix Overlay***, Organized by Penn State's Larson Transportation Institute and Presented by Mansour Solaimanian, Ph.D., June 9, 2016.
- ***Minimizing the Risk of early Age Cracking in Concrete***, TRB webinar, May 25, 2016.
- ***Geogrid in M-E Pavement Design***, Tensar International Corporation, Branden Reall, P.E., M. ASCE, May 10, 2016.
- ***Comprehensive Analysis of Thermal Cracking in Asphalt Pavements***, Organized and Presented by University of Nevada, Reno, March 8, 2016.

- ***Thin Lift Asphalt Overlays: Project Selection, Design, and Construction***, presented by Danny Gierhart, P.E., organized by Asphalt Institute, NAPA and NCAT, July 26, 2015.

Seminars / Workshops

- ***2024 Asphalt Mix Design Training Class,*** organized by the combined efforts of the Germanna Community College, the Virginia Department of Transportation, and the Virginia Asphalt Association (VAA) through the Virginia Education Center for Asphalt Technology - instructor – January 2024.
- ***Back to Basics Workshop,*** organized by the Virginia Asphalt Association (VAA) and the Virginia Department of Transportation (VDOT), November 2022.
- ***Virginia Balanced Mix Design Workshop,*** organized by the Virginia Department of Transportation (VDOT) and Virginia Asphalt Association (VAA), October 2019.
- ***Balanced Mix Design for Asphalt Mixtures***, organized by the Association of Asphalt Pavement Technologists (AAPT): Part I: Background on the need for BMD, different approaches, and path to implementation (Dr. Shane Bucahanan, November 2, 2018), Part II: Developing a BMD framework, current gaps and research needs, how to get started on BMD now (Dr. Randy West, November 9, 2018), and Part III: A case study of BMD implementation in Louisiana Lessons Learned (Dr. Louay Mohamad, Dr. Sam Cooper, Dr. Jay Winford, November 16).
- ***Dynatest Explorer Workshop,*** organized and Presented by Alvaro Ulloa, Dynatest, May 30, 2017.
- ***Asphalt Mixture Volumetrics: Applying Reasonableness and Avoiding Pitfalls***, organized by TRB Standing Committee on Critical Issues and Emerging Technologies in Asphalt (AFK10), January 8, 2016.
- ***How to Incorporate the Effect of Oxidation Aging on Asphalt Mixture's Properties in ME Design***, organized by TRB Standing Committee on Structural Requirements of Asphalt Mixtures (AFK50), January 8, 2016.
- ***Pavement Preservation Workshop***, By VSS International Inc., at the University of Nevada, Reno, November 22, 2016.
- ***Prep-ME Workshop***, Organized by Nevada Department of Transportation, Prepared and Presented by Joshua Q. Li from Oklahoma State University, NDOT, Carson City, February 24-25, 2016.
- ***Tensar Roadway Design Workshop***, held by Tensar International Corporation, University of Nevada, Reno, July 2015.

SELECTED COURSES

- **CEE 620 –** Advanced Portland Cement Concrete.
- **CEE 631 –** Pavement Analysis and Design.
- **CEE 642 –** Fundamentals of Geotechnical Engineering.
- **CEE 643 –** Foundation Engineering Design.
- **CEE 704 –** Applied Finite Element Analysis.
- **CEE 732 –** Bituminous Material and Mixtures.
- **CEE 733 –** Advanced Pavement Analysis, Design and Management.
- **CEE 734 –** Pavement Reconstruction, Rehabilitation and Maintenance.
- **CEE 735 –** Pavement Management Systems.
- **CEE 741 –** Geotechnical Engineering: Seepage, Slopes, Embankments.
- **CEE 742 –** Advanced Soil Mechanics.
- **CEE 748 –** Advanced Geotechnical Laboratory.
- **CEE 771 –** Special Engineering Problems: Advanced Modeling and Analysis of Bituminous Materials.
- **ME 720 –** Continuum Mechanics
- **STAT 755 –** Multivariate Data Analysis.
- **STAT 758 –** Time Series Analysis.

LANGUAGES

- **English**: Spoken, read, and written fluently.
- **French**: Spoken, read, and written fluently.
- **Arabic**: Spoken, read, and written fluently.

PROFESSIONAL REFERENCES

- **Danny Gierhart, P.E.**, Deputy Director of Engineering, Asphalt Institute, 1406 E Tonkawa Avenue, Tonkawa, OK, 74653, Office: (405) 210-7421, Email: dgierhart@asphaltinstitute.org.
- **Elie Y. Hajj, Ph.D.**, Professor and Associate Director of the Western Regional Superpave Center (WRSC), Pavement Engineering and Science Program, Department of Civil and Environmental Engineering, University of Nevada Reno, 1664 N. Virginia Street, Reno, NV, 89557, Mailstop 0258, Office: (775) 784-1180, Email: elieh@unr.edu.
- **M. Shabbir Hossain, Ph.D., P.E.**, Associate Principal Research Scientist, Virginia Transportation Research Council (VTRC), Virginia Department of Transportation (VDOT), 530 Edgemont Road, VA, 22903, Office: (434) 293-1989, Email: Shabbir.Hossain@VDOT.Virginia.gov.