

## **Jenny Liu, Ph.D., P.E.**

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### **ACADEMIC EXPERIENCE**

- Ph.D. Civil Engineering (Materials and Pavement Engineering), Texas A&M University, 2006
- M. S. Civil Engineering (Materials and Pavement Engineering), Texas A&M University, 2001
- B. S. Material Science and Engineering, Tongji University, Shanghai, China, 1995

### **WORK EXPERIENCE**

- September 2018 – current: Professor, Department of Civil, Architectural and Environmental Engineering, Missouri University of Science and Technology (S&T)
- September 2017 – August 2018: Associate Professor, Department of Civil, Architectural and Environmental Engineering, Missouri S&T
- July 2015 – August 2017: Professor, Department of Civil and Environmental Engineering, University of Alaska Fairbanks (UAF)
- September 2013 – current: Director, U.S. DOT Tier 1 Center for Environmentally Sustainable Transportation in Cold Climates (CESTiCC)
- July 2011 – June 2015: Associate Professor, Department of Civil and Environmental Engineering, UAF
- August 2006 - June 2011: Assistant Professor, Department of Civil and Environmental Engineering, UAF
- June 2001 - August 2006: Research Assistant, Texas Transportation Institute
- September 1995 - December 1999: Research Assistant, State Key laboratory of Concrete Materials Research, China

### **ACCREDITATION**

Registered Professional Civil Engineer (State of Alaska, AELC 12464)  
Examiner for American Concrete Institute (ACI) Certification:

- Concrete Strength Testing Technician
- Aggregate Testing Technician — Level 1 & 2
- Aggregate Base Testing Technician
- Concrete Laboratory Testing Technician — Level 2

### **COURSE TAUGHT AT S&T**

- CIV ENG 5113 Composition and Properties of Concrete, Spring 2018

### **COURSE TAUGHT AT UAF**

#### ***Undergraduate courses***

- ES 209 Statics
- ES 331 Mechanics of Materials
- CE 334 Properties of Materials
- CE 302 Introduction to Transportation Engineering
- CE 493 Pavement Design

#### ***Graduate courses***

- CE 605 Pavement Design

- CE 693 Special Topics on Bituminous Materials

## **RESEARCH AREAS**

- Infrastructure Materials - engineering characterization and modeling of asphalt cement, hot-mix asphalt mixtures (HMA), granular and stabilized bases, portland cement concrete (PCC), and other infrastructural materials.
- Pavement Engineering - pavement design and testing, pavement preservation, repair and rehabilitation, non-destructive testing, pavement construction, and pavement management system (PMS).

## **RESEARCH PROJECTS**

### ***On-going Projects***

- PI (Co-PI: T. Schuman), “Chemical Analysis of Highly Modified Asphalt Binders”, Advanced Materials for Sustainable Infrastructure (AMSI) Signature Area Funding 2018, \$13,456.
- PI, “Use of Cellular Concrete for Air Conduct Embankment to Protect Permafrost Foundations in Cold Regions: Feasibility Study”, UAF and CESTiCC, 2017-2019, \$219,972.
- PI, “Examination of the Variability in Grout Test Results”, AKDOT&PF and CESTiCC, 2017-2019, \$99,136.
- PI, “Laboratory and Field Evaluation of Modified Asphalt Binder in Alaskan Pavements”, AKDOT&PF, Emulsion Products, and CESTiCC, 2017-2018, \$271,010.
- PI, “High Abrasion-resistant and Long-lasting Concrete”, AKDOT&PF, Alaska Basic Industries, and CESTiCC, 2017-2018, \$226,153.
- PI, “Tier 1 UTC for Environmentally Sustainable Transportation in Cold Climates (CESTiCC)”, USDOT RITA, 2013-2018, \$4,209,600 from USDOT and \$2,104,800 from non-federal match.

### ***Completed Projects***

- PI, “Performance of Tencate Paving Fabric in Asphalt Concrete Pavements”, Tencate Geosynthetics North America and CESTiCC, 2015-2017, \$94,170.
- PI, “Continued Field Evaluation of Precutting for Maintaining Asphalt Concrete Pavements with Thermal Cracking”, AKDOT&PF and CESTiCC, 2015-2017, \$119,450.
- PI, “Characterization of Alaskan Hot-Mix Asphalt Containing Reclaimed Asphalt Pavement Material”, AKDOT&PF and CESTiCC, 2014-2016, \$289,050.
- PI, “International Symposium on Systematic Approaches to Environmental Sustainability in Transportation”, 2014-2017, \$67,200.
- PI, “Evaluate Presawn Transverse Thermal Cracks for Asphalt Concrete Pavement”, AKDOT&PF and PacTrans, 2013-2015, \$100,000.
- PI, “International Symposium of Climatic Effects on Pavement and Geotechnical Infrastructure”, 2013-2014, \$28,665.
- PI, “Performance of G4 Fabric-Reinforced Asphalt Pavements in Alaska”, TenCate Geosynthetics North America, 2012-2015, \$132,682.
- Co-PI (PI: Y. Xie, other Co-PIs: T. Yu, H. Huang, and T. Xia), “An Automated System for Rail Transit Infrastructure Inspection”, USDOT Commercial Remote Sensing & Spatial Information Technologies Program, 2012-2014, \$2,008,924.
- PI (Co-PI: X. Zhang), “Economic Impact of Fines in the Unbound Pavement Layers”, USDOT RITA and AKDOT&PF, 2011-2014, \$150,000.
- PI, “Developing a Work Plan of Experimental Thermal Crack Maintenance Treatments for Parks Highway Mile 239 – 252 Project”, AKDOT&PF, 2013, \$13,188.

- PI, “Field Evaluation of Crack Sealing of Asphalt Concrete Pavements in Alaska”, USDOT RITA and AKDOT&PF, 2011-2012, \$136,382.
- Co-PI (PI: X. Shi), “Develop Locally Sourced Salt Brine Additive for Anti-icing”, USDOT RITA and AKDOT&PF, 2011-2014, \$280,000.
- PI (Co-PIs: G. Hicks and D. Cheng), “Develop Guidelines for Pavement Preservation Treatments and for Building a Pavement Preservation Program Platform for Alaska”, Caltrans, AKDOT&PF, and USDOT RITA, 2009-2012, \$250,000.
- PI (Co-PI: M. Lee), “Inclusion of Life Cycle Cost Analysis in Alaska Flexible Pavement Design Software”, USDOT RITA and AKDOT&PF, 2009-2012, \$160,000.
- Co-PI (PI: B. Connor, other Co-PIs: M. Lee and R. Perkins), “Fairbanks North Star Borough Road Upgrading Process”, Fairbanks North Star Borough and USDOT RITA, 2009-2012, \$200,000.
- PI, “Characterization of Alaskan HMA Mixtures with the Simple Performance Tester”, AKDOT&PF and USDOT RITA, 2009-2012, \$160,000.
- PI (Co-PIs: P. Qiao and D. McLean), “Accelerated Degradation and Durability of Concrete in Cold Climates”, Washington State University and USDOT RITA, 2009-2012, \$300,000.
- PI, “Verification of Job Mix Formula for Alaskan Hot Mix Asphalt”, USDOT RITA and AKDOT&PF, 2009-2012, \$260,000.
- PI, “Use of the Micro-Deval Test for Assessing Alaska Aggregates”, AKDOT&PF and USDOT RITA, 2009-2012, \$100,000.
- PI, “Warm Mix Asphalt with the Astec Double-Barrel Green System Demonstration Project”, AKDOT&PF, 2009-2010, \$27,000.
- Co-PI (PI: B. Connor), “Reclaimed Asphalt Pavement (RAP) Application”, COLASKA Inc., 2009, \$9,501.
- PI, “Warm Mix Asphalt Application for Alaskan Conditions”, USDOT RITA and AKDOT&PF, 2008-2010, \$150,000.
- PI, “Characterization of Asphalt Treated Base Course Material”, USDOT RITA and AKDOT&PF, 2007-2010, \$150,000.
- PI (Co-PIs: X. Zhang and W. S. Guthrie), “Impact of Fines Content on Resilient Modulus Reduction of Base Courses during Thawing”, USDOT RITA and AKDOT&PF, 2007-2010, \$150,000.
- PI, “Screening Test of Gilsonite Application”, SealMaster Company, 2007, \$7,903.
- PI, “Barrow Runway & Apron Paving Evaluation”, AKDOT&PF, 2007-2008, \$20,000.

## **HONORS/AWARDS**

- Certificate of Invited Speaker, International Conference on Transportation Infrastructure and Materials 2017
- Best Paper Award, “Recycling in Alaska’s Transportation Infrastructure” by S. Zhao and J. Liu, Transportation Research Congress 2017
- Best Paper Award, “Implementation of Stress Dependent Resilient Modulus of Asphalt Treated Base for Flexible Pavement Design” by P. Li, J. Liu, and S. Zhao, Transportation Research Congress 2016
- Certificate of Honor, Transportation Research Congress 2016
- NSF Fellowship to attend International Workshop on the Genome of Stone-based Civil Infrastructure Materials, 2016
- 2016 Engineer of the Year, Alaska Society of Professional Engineers Fairbanks Chapter
- 2015 ASCE Outstanding Reviewer

- Best Paper Award, “Predictive Model for Nonlinear Resilient Modulus of Emulsified Asphalt Treated Base” by P. Li and J. Liu, GeoShanghai 2014 International Conference
- 2013 Outstanding Service Award, International Association of Chinese Infrastructure Professionals (IACIP)
- 2013 Dennis Demmert Award, UAF
- 2011 ASCE Outstanding Reviewer
- Honorary Faculty/Staff, Department of Athletics for support and guidance in the academic endeavors of student-athletes, UAF, 2009 & 2010
- ASCE ExCEEEd 2009 Fellow
- Faculty Development Award, UAF, 2006 & 2007
- “Who’s Who in Science and Engineering”, 9th Edition, Marquis Who'sWho®, 2006
- Graduate student research and presentation grant, Texas A&M University, 2006
- Travel award, NSF workshop for the Advancement and Retention of Underrepresented and Minority Engineering Educators, 2006
- “Who’s Who in America”, 60th Edition, Marquis Who'sWho®, 2006
- First place award in Student Research Week competition, Texas A&M University, 2005
- Travel award to Wakonse Conference on College Teaching, Michigan, Texas A&M University, 2005
- Fellow, the Graduate Teaching Academy, Texas A&M University, 2004
- Jianguo Scholarship, Tongji University, China, 1996 & 1998
- People’s Scholarship, Tongji University, China, 1991-1995

## **PROFESSIONAL AFFILIATIONS**

- Member, Chi Epsilon
- Chair, ASCE Bituminous Materials Committee, 2015-2017
- Director, American Concrete Institute (ACI) Alaska Chapter, 2014-2017
- Vice-Chair, ASCE Bituminous Materials Committee, 2014-2015
- Secretary, ASCE Bituminous Materials Committee, 2011-2014
- Vice President, ACI Alaska Chapter, 2013-2014
- Webinar coordinator, IACIP Public Relationship Committee
- Member, Academy of Pavement Science and Engineering
- Member, Transportation Research Board (TRB) AFP70 Committee on Mineral Aggregates
- Member, TRB AFK30 Committee on Non-Binder Components of Asphalt Mixtures
- Member, TRB AFK50 Committee on Structural Requirements of Asphalt Paving Mixtures
- Member, TRB AFH50 Committee on Portland Cement Concrete Pavement Construction, 2009-2013
- Member, ACI Certification Committee
- Member, ASCE Highway Pavement Committee
- Member, ASCE Geo-Institute Pavements Committee
- Member, Asian-American Pavement Engineers Association
- Member, International Society for Concrete Pavements
- Member, ASCE
- Member, ACI

## **SERVICES**

### ***Professional Services***

- Associate Editor, ASCE Journal of Materials in Civil Engineering, since 2009
- Associate Editor, ASCE Journal of Transportation Engineering Part B: Pavements, since 2017

- Member, Oversight Committee of Electric Vehicle Transportation Center, University of Central Florida
- Member, Technical Committee, GeoShanghai International Conference, May 27-30, 2018
- Member, Conference Program Committee, ASCE Congress on Technical Advancement, Duluth, MN, September 10-13, 2017
- Member, International Organizing Committee, International Workshop on Frozen Ground Engineering and Climate Effects, Anchorage, AK, August 1-10, 2017
- Member, Organizing Committee, 2017 International Conference on Maintenance and Rehabilitation of Constructed Infrastructure Facilities, Seoul, South Korea, July 19-21, 2017
- Guest Editor, Special Issue on “Smart Paving and Infrastructure Materials for Longer Service Life”, ASCE Journal of Materials in Civil Engineering, 2017
- Session Chair, 2017 International Conference on Transportation Infrastructure and Materials, Qingdao, China, June 9-12, 2017
- Member, Technical Committee, 2017 International Conference on Transportation Infrastructure and Materials, Qingdao, China, June 9-12, 2017
- Co-Chair, Scientific Committee, Transportation Research Congress Conference, Beijing, China, May 23-25, 2017
- Chair, Organizing Committee, International Workshop on Research Frontier and Reviews, Beijing, China, May 23, 2017
- Coordinator, IACIP webinar on “Global Warming and Its Impact on Transportation”, April 7, 2017
- Presiding Officer, Poster session on Recycled Asphalt Pavements, the 96th TRB Annual Meeting, Washington, D.C., January 2017
- Reviewer, CUTC Student Awards, 2016
- Guest Editor, Special Issue on “Civil Engineering Materials for Climate Adaptation and Sustainability”, ASCE Journal of Materials in Civil Engineering, 2016
- Guest Editor, Special Issue on “Environmental Sustainability of Transportation Infrastructure in Cold Climates”, ASCE Journal of Cold Regions Engineering, 2016
- Guest Editor, Special Issue on “Sustainable Civil Infrastructure”, Frontiers of Structural and Civil Engineering, 2016
- Session Chair, 4th International Conference on Sustainable Construction Materials and Technologies, Las Vegas, NV, 2016
- Co-Chair, Scientific Committee, Transportation Research Congress Conference, Beijing, China, 2016
- Member, Technical Committee, 2016 International Conference on Transportation Infrastructure and Materials, Xi’An, China, 2016
- Presiding Officer, Workshop on Tools and Techniques for Evaluation of Thermal Cracking Properties of Asphalt Mixtures, the 95th TRB Annual Meeting, Washington, D.C., January 2016
- Chair, Organizing Committee, International Symposium on Systematic Approaches to Environmental Sustainability in Transportation, 2015
- Session Chair, Keynote lectures session, GeoShanghai 2014 International Conference
- Session Chair, Session 781 on “Influence of Mixture Properties on Performance of Asphalt Concrete Mixtures”, 93rd TRB Annual Meeting, 2014
- Guest Editor, Special Issue on “Materials Innovations for Sustainable Infrastructure”, ASCE Journal of Materials in Civil Engineering, 25(7), 2013
- Chair, Organizing Committee, International Symposium of Climatic Effects on Pavement and Geotechnical Infrastructure, 2013
- Invited External Reviewer, faculty tenure application, 2012, 2013

- Guest editor, Special Issue on “Energy Efficient and Environmentally Friendly Paving Materials”, ASCE Journal of Materials in Civil Engineering, 23(11), 2011
- Associate editor, sessions on Pavement and Materials Engineering, and Highway Maintenance, 10th International Chinese Conference of Transportation Professionals, 2009
- Co-chair, Organizing Committee, 6th International Conference on Traffic and Transportation Studies, 2008
- Session Chair, 5th International Conference on Maintenance and Rehabilitation of Pavements and Technological Control, 2007
- Proposal reviewer
  - CESTiCC, since 2014
  - PacTrans, 2015
  - Hong Kong Special Administrative Region Government, since 2014
  - Research Grants Council, Hong Kong, since 2015
  - Kentucky Science & Engineering Foundation, 2016
  - Environmental Research and Education Foundation, 2013
  - Structural Materials and Mechanics, CMMI, NSF, 2011
  - Transportation Northwest 2009 - 2011
  - National Center for Freight & Infrastructure Research & Education 2010
  - UTRC, City College of City University of New York, 2009
- Book reviewer
  - Sustainable Winter Road Operations, John Wiley & Sons Limited, 2016
  - First Edition of English-Chinese and Chinese-English Transportation Glossary, ASCE Transportation & Development Institute (T&DI) and North America Chinese Overseas Transportation Association (NACOTA), 2007-2008
- Paper reviewer for journals (since 2005)
  - Advances in Materials Science and Engineering
  - Applied Clay Science
  - ASCE Journal of Cold Regions Engineering
  - ASCE Journal of Infrastructure Systems
  - ASCE Journal of Materials in Civil Engineering
  - ASCE Journal of Structural Engineering
  - ASCE Journal of Transportation Engineering
  - ASCE Journal of Transportation Engineering: Part B, Pavements
  - ASTM Journal of Testing and Evaluation
  - Canadian Journal of Civil Engineering
  - Cement Concrete Research
  - Cold Regions Science and Technology
  - Composites Part B: Engineering
  - Computational Materials Science
  - Construction & Building Materials
  - Heat Transfer Engineering
  - Hong Kong Institution of Engineers Transactions
  - International Journal of Pavement Engineering
  - International Journal of Pavement Research and Technology
  - Journal of ASTM International
  - Journal of Cleaner Production
  - Journal of Engineering Research
  - Journal of the Eastern Asia Society for Transportation Studies

- KSCE Journal of Civil Engineering
- Scientific Journals International
- Smart Materials and Structure
- Sustainable Civil Infrastructures
- Transportation Geotechnics
- Transportation Research Record
- Water, Air, & Soil Pollution
- Paper reviewer for international conferences
  - 2017 International Conference on Transportation Infrastructure and Materials
  - International Symposium on Systematic Approaches to Environmental Sustainability in Transportation
  - International Symposium of Climatic Effects on Pavement and Geotechnical Infrastructure
  - 9th International Conference on Concrete Pavements
  - 2008 Airfield and Highway Pavement Specialty Conference
  - 1st International Conference on Transportation Infrastructure
  - 9th International Conference on Permafrost
  - 6th International Conference on Traffic and Transportation Studies
  - 3rd International Conference on Asphalt Materials
  - International Conference on Concrete Pavements — China
  - 1st International Symposium of Pavement and Geotechnical Engineering for Transportation Infrastructure
  - GeoShanghai 2010, 2014
  - Geo-Congress 2012
  - Geo-Frontiers 2011
  - GeoFlorida 2010

### ***University Service***

- Member, GAC
- Chair, X.B. Hu's Mentoring Committee
- Member, D. Feys' Mentoring Committee
- Member, H. Ma's 3rd Year Review Panel
- Annual meeting coordinator, CEE advisory board, UAF, 2006-2017
- Faculty advisor, UAF Concrete Canoe Team, 2014-2017
- Host, Engineering session of Kids2College program, 2014 - 2017
- Organizer, "RC Road Rally" at Engineering Open House, 2012 - 2017
- Member, Committee for Graduate Education Support, CEE Department, UAF, 2016-2017
- Ad hoc Administrator Review Committee, UAF, 2015-2016
- Faculty Senate, UAF, 2015-2016
- Curricular Affairs Committee, UAF, 2015-2016
- Faculty Senate Alternate, UAF, 2014-2015
- Member, Student Diversity Task Force, UAF, 2012-2013
- Member, Chancellor's Campus Diversity Action Committee, UAF, 2010-2012
- Member, Faculty Senate Committee on the Status of Women, UAF, 2009-2015
- Outside examiner, Ph.D Oral Comprehensive Exam, UAF, 2011, 2012, 2014
- Faculty parade marshal, 2014 commencement, UAF
- Guest lecturer of CE603, spring 2014
- Guest lecturer of CE302, spring 2014
- Chair, Transportation Position Search Committee, CEE Department, UAF, 2012-2013
- Civil and Environmental Engineering outcome evaluation committee, UAF, 2008

### ***Public Services***

- Free Consulting to AKDOT&PF, FNSB, and local industry, since 2006
- Grader, Mathcounts Fairbanks Chapter Competition, 2017
- Grader, Mathcounts Alaska State Competition, 2016
- Judge, Pearl Creek Science Fair, since 2014
- Volunteer, STEM Night, Pearl Creek Elementary School, since 2014
- Performer, Multicultural Public Service Announcement: Diversity, Tanana Valley Television, spring 2014
- Judge, Alaska Statewide High School Science Symposium, 2010
- Organizer, highway materials lab tour for Alaska Summer Research Academy, 2010, 2014

### **SELECTED PUBLICATIONS**

#### ***Book Publications***

1. X. Shi, Z. Liu and J. Liu, “Proceedings of GeoShanghai 2018 International Conference: Transportation Geotechnics and Pavement Engineering”, eBook, ISBN 978-981-13-0011-0, © 2018.
2. S. Zhao, J. Liu and X. Zhang, “Innovative Materials and Design for Sustainable Transportation Infrastructure”, ASCE Construction Institute Special Publication, 2015, <http://ascelibrary.org/doi/book/10.1061/9780784479278>.
3. J. Liu, S. Zhao, and P. Li, “Environmental Sustainability in Transportation Infrastructure”, ASCE Construction Institute Special Publication, 2015, <http://ascelibrary.org/doi/book/10.1061/9780784479285>.
4. J. Liu, P. Li, X. Zhang, and B. Huang, “Climatic Effects on Pavement and Geotechnical Infrastructure”, ASCE Construction Institute Special Publication, 2014, <http://ascelibrary.org/doi/book/10.1061/9780784413326>.

#### ***Peer-Reviewed Journal Publications***

1. J. Liu, K. Yan, and J. Liu, “Rheological Characteristic of Polyphosphoric Acid Modified Asphalt Mastic”, ASCE Journal of Materials in Civil Engineering (accepted).
2. J. Liu, K. Yan, and J. Liu, “Rheological Properties of Warm Mix Asphalt Binders and Warm Mix Asphalt Binders Containing Polyphosphoric Acid”, International Journal of Pavement Technology and Research (accepted).
3. S. Zhao and J. Liu, “Rutting Evaluation of Alaskan Asphalt Pavement Containing Sustainable Materials”, Journal of Testing and Evaluation, 46(4), 1366–1375, <https://doi.org/10.1520/JTE20170514>, ISSN 0090-3973, 2018.
4. J. Liu, K. Yan, J. Liu, and X. Zhao, “Using Artificial Neural Networks Predict the Dynamic Modulus of Asphalt Mixtures Containing Recycled Asphalt Shingles”, ASCE Journal of Materials in Civil Engineering, 30(4), 2018.
5. P. Li, J. Liu, and S. Zhao, “Implementation of Stress-Dependent Resilient Modulus of Asphalt-Treated Base for Flexible Pavement Design”, International Journal of Pavement Engineering, 19:5, 439-446, DOI: 10.1080/10298436.2017.1402600, 2018.
6. S. Zhao and J. Liu, “Using Recycled Asphalt Pavement in Construction of Transportation Infrastructure: Alaska Experience”, Journal of Cleaner Production, 177, 155-168, 2018.
7. J. Liu, S. Zhao, L. Li, and P. Li, “Cracking Resistance Evaluation of Paving Interlayers in Asphalt Pavement”, ASCE Journal of Cold Regions Engineering, 32(2):04018005, 2018, [https://doi.org/10.1061/\(ASCE\)CR.1943-5495.0000162](https://doi.org/10.1061/(ASCE)CR.1943-5495.0000162).
8. S. Zhao, J. Liu, P. Li, and S. Saboundjian, “Dynamic Modulus Characterization of Alaskan Asphalt Mixtures for Mechanistic Empirical Pavement Design”, ASCE Journal of Materials in



Civil Engineering, 29(11), 2017, <http://ascelibrary.org/doi/10.1061/%28ASCE%29MT.1943-5533.0002069>.

9. J. Liu, X. Zhang, L. Li, and S. Saboundjian, "Resilient Behavior of Unbound Granular Materials Subjected to a Closed-System Freeze-Thaw Cycle", ASCE Journal of Cold Regions Engineering, 32(1): 04017015, 2017, <http://ascelibrary.org/doi/abs/10.1061/%28ASCE%29CR.1943-5495.0000142>.

10. J. Liu, S. Zhao, L. Li, P. Li, and S. Saboundjian, "Low Temperature Cracking Analysis of Asphalt Binders and Mixtures", Cold Regions Science and Technology, 141, 78-85, 2017, <http://www.sciencedirect.com/science/article/pii/S0165232X16303834>.

11. X. Shu, J. Liu, and B. Huang, "Special Issue on Innovations on Paving Materials", ASCE Journal of Materials in Civil Engineering, DOI: 10.1061/(ASCE)MT.1943-5533.0001911, 2017, [http://ascelibrary.org/doi/full/10.1061/\(ASCE\)MT.1943-5533.0001911](http://ascelibrary.org/doi/full/10.1061/(ASCE)MT.1943-5533.0001911).

12. J. Liu, S. Zhao, A. Mullin, and J. Rein, "Use of the Micro-Deval Test for Assessing Alaska Aggregates", Frontiers of Structural and Civil Engineering, DOI 10.1007/s11709-016-0359-5, 2017, <https://link.springer.com/article/10.1007/s11709-016-0359-5>.

13. S. Zhao, J. Liu, P. Li, and T. Burritt, "Asphalt Binder Adaption for Climatic Conditions in Cold Regions: Alaska Experience", ASCE Journal of Materials in Civil Engineering, 29(1): 04016184, 2017, [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)MT.1943-5533.0001709](http://ascelibrary.org/doi/abs/10.1061/(ASCE)MT.1943-5533.0001709).

14. J. Liu, S. Zhao, P. Li, and S. Saboundjian, "Variability of Composition, Volumetric and Mechanic Properties of Hot Mix Asphalt for Quality Assurance", ASCE Journal of Materials in Civil Engineering, doi: 10.1061/(ASCE)MT.1943-5533.0001481, D4015004, 2017, [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)MT.1943-5533.0001481](http://ascelibrary.org/doi/abs/10.1061/(ASCE)MT.1943-5533.0001481).

15. P. Li, S. Zhao, and J. Liu, "Characterizing Stress-strain Relationships of Asphalt Treated Base", ASCE Journal of Materials in Civil Engineering, 28(8): 04016045, 2016, [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)MT.1943-5533.0001549](http://ascelibrary.org/doi/abs/10.1061/(ASCE)MT.1943-5533.0001549).

16. P. Li, J. Liu, and S. Zhao, "Performance of Multi-Axial Paving Interlayer Reinforced Asphalt Pavement", ASCE Journal of Materials in Civil Engineering, 28(7): 04016039, 2016, [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)MT.1943-5533.0001543](http://ascelibrary.org/doi/abs/10.1061/(ASCE)MT.1943-5533.0001543).

17. C. Lin, J. Liu, and X. Zhang, "Development of Innovative Antifreeze Grout Mortar for Anchor Application in Cold Regions", Transportation Research Record: Journal of the Transportation Research Board, No. 2508, 1-12, 2015, <http://trrjournalonline.trb.org/doi/abs/10.3141/2508-01>.

18. X. Shu, B. Huang, and J. Liu, "Special Issue on Materials Innovations for Sustainable Infrastructure", ASCE Journal of Materials in Civil Engineering, 25(7), 825-828, 2013, [http://ascelibrary.org/doi/full/10.1061/\(ASCE\)MT.1943-5533.0000840](http://ascelibrary.org/doi/full/10.1061/(ASCE)MT.1943-5533.0000840).

19. D. Cheng, G. Hicks, H. Zubeck, J. Liu, and A. Mullin, "Development of Enhanced Alaska Pavement Preservation Program and Strategy Selection Guide", Transportation Research Record: Journal of the Transportation Research Board, No. 2361, 44-55, 2013, <http://trrjournalonline.trb.org/doi/abs/10.3141/2361-06>.

20. J. Liu and P. Li, "Low Temperature Performance of Sasobit-modified Warm Mix Asphalt", ASCE Journal of Materials in Civil Engineering, 24(1), 57-63, 2012, [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)MT.1943-5533.0000347](http://ascelibrary.org/doi/abs/10.1061/(ASCE)MT.1943-5533.0000347).

21. J. Liu, S. Saboundjian, P. Li, B. Connor, and B. Brunette, "Laboratory Evaluation of Sasobit-modified Warm Mix Asphalt for Alaskan Conditions", ASCE Journal of Materials in Civil Engineering, 23(11), 1498-1505, 2011, [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)MT.1943-5533.0000226](http://ascelibrary.org/doi/abs/10.1061/(ASCE)MT.1943-5533.0000226).

22. L. Li, J. Liu, X. Zhang, and S. Saboundjian, "Resilient Modulus Characterization of Alaskan Granular Base Materials", Transportation Research Record: Journal of the Transportation

- Research Board, No. 2232, 44-54, 2011, <http://trrjournalonline.trb.org/doi/abs/10.3141/2232-05>.
23. S. Saboundjian, J. Liu, P. Li, and B. Brunette, "Late Season Paving of a Low-Volume Road using Warm-Mix Asphalt: an Alaskan Experience", *Transportation Research Record: Journal of the Transportation Research Board*, No. 2205, 40-47, 2011, <http://trrjournalonline.trb.org/doi/abs/10.3141/2205-06>.
24. P. Li, J. Liu, and S. Saboundjian, "Materials and Temperature Effects on the Resilient Response of Asphalt Treated Alaskan Base Course Materials", *ASCE Journal of Materials in Civil Engineering*, 23(2), 161-168, 2011, [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)MT.1943-5533.0000150](http://ascelibrary.org/doi/abs/10.1061/(ASCE)MT.1943-5533.0000150).
25. X. Zhang, J. Liu, and P. Li, "A New Method to Determine the Shapes of Yield Curves for Unsaturated Soils", *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 136(1), 239-247, 2010, <http://ascelibrary.org/doi/abs/10.1061/%28ASCE%29GT.1943-5606.0000196>.
26. J. Liu, and D. G. Zollinger, "Selecting Construction Measures for Mitigating Early-age Delamination in CRC Pavements Made with Gravel Aggregates", *ASCE Journal of Transportation Engineering*, 135(8), 572-579, 2009, [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)TE.1943-5436.0000013](http://ascelibrary.org/doi/abs/10.1061/(ASCE)TE.1943-5436.0000013).
27. J. Liu, A. Mukhopadhyay, and D. G. Zollinger, "Laboratory Investigation of Influencing Factors on Early-Age Delamination in CRC Pavements Made with Gravel Aggregates", *ASCE Journal of Materials in Civil Engineering*, 21(8), 374-381, 2009, [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)0899-1561\(2009\)21:8\(374\)](http://ascelibrary.org/doi/abs/10.1061/(ASCE)0899-1561(2009)21:8(374)).
28. J. Liu and B. Chen, "Property of High Strength Concrete Made with Field-Demolished Concrete Aggregates", *Journal of ASTM International*, 5(10), 2008, <https://trid.trb.org/view.aspx?id=848193>.
29. J. Liu, D. G. Zollinger, and R. Lytton, "Detection of Delamination in Concrete Pavements using Ground-Coupled GPR Technique", *Transportation Research Record: Journal of the Transportation Research Board*, No. 2087, 68-77, 2008, <http://trrjournalonline.trb.org/doi/abs/10.3141/2087-08>.
30. B. Chen and J. Liu, "Damage in Carbon Fiber-Reinforced Concrete, Monitored by both Electrical Resistance Measurement and Acoustic Emission Analysis", *Construction and Building Materials*, 22(11), 2196-2201, 2008, <http://www.sciencedirect.com/science/article/pii/S0950061807002164>.
31. J. Liu, D. G. Zollinger, and P. Li, "Feasibility of Using Accelerated Thin Bonded Concrete Overlay for CRCP Spalling Repair", *International Journal of Pavement Research and Technology*, 1(3), 113-120, 2008, <http://www.airitilibrary.com/Publication/alDetailedMesh?docid=19971400-200807-201302220024-201302220024-113-120>.
32. B. Chen, and J. Liu, "Experimental Application of Mineral Admixtures in Lightweight Concrete with High Strength and Workability", *Construction and Building Materials*, 22(6), 1108-1113, 2008, <http://www.sciencedirect.com/science/article/pii/S0950061807000712>.
33. J. Liu, X. Zhang, and D. G. Zollinger, "A Two-Step Fracture Mechanics-based Approach for Assessing Early-age Delamination Distress", *Transportation Research Record: Journal of the Transportation Research Board*, No. 2016, 76-84, 2007, <http://trrjournalonline.trb.org/doi/abs/10.3141/2016-09>.
34. B. Chen and J. Liu, "Investigation of Effects of Aggregate Size on the Fracture Behavior of High Performance Concrete by Acoustic Emission", *Construction and Building Materials*, 21(8), 1696-1701, 2007, <http://www.sciencedirect.com/science/article/pii/S0950061806001978>.

35. B. Chen and J. Liu, "Mechanical Properties of Polymer-Modified Concretes Containing Expanded Polystyrene Beads", *Construction and Building Materials*, 21(1), 7-11, 2007, <http://www.sciencedirect.com/science/article/pii/S0950061805002333>.
36. B. Chen, J. Liu and K. Wu, "Electrical Response of Carbon Fiber Reinforced Cementitious Composites to Monotonic and Cyclic Loading", *Cement and Concrete Research*, 35(11), 2183-2191, 2005, <http://www.sciencedirect.com/science/article/pii/S0008884605000669>.
37. B. Chen and J. Liu, "Contribution of Hybrid Fibers on the Properties of the High-Strength Lightweight Concrete Having Good Workability", *Cement and Concrete Research*, 35(5), 913-917, 2005, <http://www.sciencedirect.com/science/article/pii/S0008884604003552>.
38. J. Liu, D. G. Zollinger, S. Tayabji, and K. Smith, "Application of Reliability Concept in Concrete Pavement Rehabilitation Decision Making", *Transportation Research Record: Journal of the Transportation Research Board*, No. 1905, 25-35, 2005, <http://trrjournalonline.trb.org/doi/abs/10.3141/1905-04>.
39. B. Chen and J. Liu, "Effect of Aggregate on the Fracture Behavior of High Strength Concrete", *Construction and Building Materials*, 18(8), 585-590, 2004, <http://www.sciencedirect.com/science/article/pii/S0950061804000625>.
40. B. Chen and J. Liu, "Properties of Lightweight Expanded Polystyrene Concrete Reinforced with Steel Fiber", *Cement and Concrete Research*, 34(7), 1259-1263, 2004, <http://www.sciencedirect.com/science/article/pii/S0008884603004381>.
41. B. Chen and J. Liu, "Residual Strength of Hybrid-Fiber-Reinforced High Strength Concrete after Exposure to High Temperature", *Cement and Concrete Research*, 34(6), 1065-1069, 2004, <http://www.sciencedirect.com/science/article/pii/S0008884603004071>.
42. B. Chen and J. Liu, "Experimental Study on AE Characteristics of Three-Point-Bending Concrete Beams", *Cement and Concrete Research*, 34(3), 391-397, 2004, <http://www.sciencedirect.com/science/article/pii/S0008884603003004>.
43. B. Chen and J. Liu, "Effect of Fibers on Expansion of Concrete with a Large Amount of High f-CaO Fly Ash", *Cement and Concrete Research*, 33(10), 1549-1552, 2003, <http://www.sciencedirect.com/science/article/pii/S000888460300098X>.
44. K. Wu, A. Yan, J. Liu and D. Zhang, "Reconstruction and Analysis of 3-D Profile of Fracture Surface of Concrete", *Cement and Concrete Research*, 30(6), 981-987, 2000, <http://www.sciencedirect.com/science/article/pii/S0008884600002490>.
45. K. Wu, J. Liu, D. Zhang and A. Yan, "Rupture Probability of Coarse Aggregate on Fracture Surface of Concrete", *Cement and Concrete Research*, 29(12), 1983-1987, 1999, <http://www.sciencedirect.com/science/article/pii/S0008884699001830>.
46. B. Chen, L. Zhang, and J. Liu, "Study on the Acoustic Emission Characteristics of Concrete Beams under Three-Point Bending Load", *Nondestructive Testing*, 109-112, 2000 (in Chinese), [http://en.cnki.com.cn/Article\\_en/CJFDTOTAL-WSJC200003002.htm](http://en.cnki.com.cn/Article_en/CJFDTOTAL-WSJC200003002.htm).
47. B. Chen, L. Zhang, and J. Liu, "Effect of Coarse Aggregate Type on the Mechanical Properties of High Performance Concrete", *Concrete*, 4, 23-26, 2000 (in Chinese) , <http://www.cqvip.com/read/read.aspx?id=4289766>.
48. B. Chen, L. Zhang and J. Liu, "Effect of Aggregate Size on Fracture Properties of Concrete", *Guangdong Building Materials*, 12, 3-5, 1999 (in Chinese) , <http://www.cqvip.com/qk/87751x/1999012/1004535249.html>.
49. D. Zhang, J. Liu, B. Chen and K. Wu, "Analysis of the Determination of Fracture Energy of Concrete Using Three-point-bending Method", *Journal of Building Materials*, 2(3), 210-215, 1999 (in Chinese), <http://m.doczj.com/doc/42d448bdfc4ffe473268ab67.html>.

50. J. Liu, L. Zhang and B. Chen, "Effects of Some Factors on Fracture Properties of High-Strength Concrete", *Guangdong Building Materials*, 5, 9-12, 1999 (in Chinese) , <http://ir.tongji.edu.cn/AchivementDetails/Index/173021>).
51. J. Liu, K. Wu and D. Zhang, "Application of Image Analysis Technique in Research of Fracture Surface of Concrete", *China Concrete and Cement products*, 2, 6-9, 1999 (in Chinese)
52. L. Zhang, B. Chen and J. Liu, "Research on the Effect of Aggregate Size on Mechanical Performance of Concrete Using Supersonic and Acoustic Emission Technology", *Building Construction*, 21(2), 49-53, 1999 (in Chinese).
53. J. Liu, H. Yu and H. Zhu, "Elementary Exploration of High-Strength Concrete Mix Proportion Design", *Housing Science*, 12, 28-31, 1998 (in Chinese).
54. D. Zhang, J. Liu and K. Wu, "Experimental Research and Analysis of Fracture Properties of High Strength Concrete", *China Concrete and Cement products*, 5, 5-9, 1998 (in Chinese).
55. J. Liu, L. Zhang and B. Chen, "Toughening of Concrete", *Shandong Building Materials*, 5, 5-8, 1998 (in Chinese), <http://www.cqvip.com/qk/98526x/199805/3203896.html>.
56. L. Zhang, B. Chen and J. Liu, "High-Range Water-Reducer in Concrete", *Jiangxi Building Materials*, 3, 15-18, 1998 (in Chinese).

### ***Peer-Reviewed Special Publications***

1. J. Liu, R. McHattie, S. Zhao, and X. Zhang, "Field Evaluation of Precut Thermal Cracks in an AC Pavement in Alaska", *ASCE Construction Institute Special Publication on Environmental Sustainability in Transportation Infrastructure*, Edited by J. Liu et al., 95-103, 2015, <http://ascelibrary.org/doi/abs/10.1061/9780784479285.009>.
2. A. Mullin, S. Zhao, J. Liu, and R. McHattie, "Crack Surveying Methods to Evaluate Sealing Practice in Alaska", *ASCE Construction Institute Special Publication on Environmental Sustainability in Transportation Infrastructure*, Edited by J. Liu et al., 120-131, 2015, <http://ascelibrary.org/doi/abs/10.1061/9780784479285.011>.
3. A. Mullin, J. Liu, and H. Zubeck, "Evaluation of Pavement Preservation Treatments Used in Alaska", *ASCE Geotechnical Special Publication No. 239*, Edited by B. Huang and S. Zhao, 231-240, 2014, <http://ascelibrary.org/doi/pdf/10.1061/9780784413418.024>.
4. P. Li, and J. Liu, "Predictive Model for Nonlinear Resilient Modulus of Emulsified Asphalt Treated Base", *ASCE Geotechnical Special Publication No. 239*, Edited by B. Huang and S. Zhao, 383-394, 2014, <http://ascelibrary.org/doi/abs/10.1061/9780784413418.038>.
5. P. Li, J. Liu, M. Samueloff, and D. Jones, "Performance of Paving Fabric Reinforced Asphalt Mixture", *ASCE Construction Institute Special Publication*, Edited by J. Liu et al., 126-138, 2014, <http://ascelibrary.org/doi/abs/10.1061/9780784413326.013>.
6. A. Mullin, J. Liu, and R. McHattie, "Field Evaluation of Crack Sealing of AC Pavements in Alaska", *ASCE Construction Institute Special Publication*, Edited by J. Liu et al., 39-51, 2014, <http://ascelibrary.org/doi/abs/10.1061/9780784413326.005>.
7. L. Li, J. Liu, X. Zhang, and S. Saboundjian, "Characteristics of Seasonal Resilient Modulus of Alaskan Base Materials", *ASCE Geotechnical Special Publication No. 203*, Edited by B. Huang et al., 270-278, 2010, [http://ascelibrary.org/doi/abs/10.1061/41104\(377\)33](http://ascelibrary.org/doi/abs/10.1061/41104(377)33).
8. P. Li, J. Liu, and S. Saboundjian, "Resilient Modulus Characterization of Hot Asphalt Treated Alaskan Base Course Material", *ASCE Geotechnical Special Publication No. 191*, Edited by W. J. Steyn, K. Jenkins, and M. Solaimanian, 168-176, 2009, [http://ascelibrary.org/doi/abs/10.1061/41043\(350\)23](http://ascelibrary.org/doi/abs/10.1061/41043(350)23).
9. X. Zhang and J. Liu, "Numerical Simulation of Influence of Climatic Factors on Concrete Pavements Built on Expansive Soil", *ASCE Geotechnical Special Publication No. 178*, Edited by K. R. Reddy, M. V. Khire, and A. N. Alshawabke, 554-561, 2008, [http://ascelibrary.org/doi/abs/10.1061/40971\(310\)69](http://ascelibrary.org/doi/abs/10.1061/40971(310)69).

### ***Peer-Reviewed Conference Papers***

10. F. Saberi.K, J. Liu, and H. Ma, "Laboratory Evaluation of using Phase Change Material in Hot Mix Asphalt", International Airfield and Highway Pavements Conference 2019, Chicago, July 2019 (abstract submitted).
11. S. Fayek, J. Liu and X. Zhang, "Influence and Characteristically Evaluation of Base Materials Conditions on Pavement Performance at Different Traffic Loadings and Climate Conditions", International Airfield and Highway Pavement Conference 2019, Chicago, July 2019 (abstract submitted).
12. A. Zhu, J. Liu and J. Liu, "Rutting and Cracking Performance Evaluation of Asphalt Mixtures with Highly Modified Binder", International Airfield and Highway Pavements Conference 2019, Chicago, July 2019 (abstract submitted).
13. D. Murph and J. Liu, "Developing an abrasion-resistant and long-lasting concrete mix design for Alaska", International Airfield and Highway Pavement Conference 2019, Chicago, July 2019 (abstract submitted).
14. J. Liu and J. Liu, "Laboratory Performance Evaluation of Highly Modified Binder with Extremely PG Low Temperature End", International Airfield and Highway Pavement Conference 2019, Chicago, July 2019 (abstract submitted).
15. J. Jun, K. Yan, and J. Liu, "Evaluation of the Characteristics of Trinidad Lake Asphalt and Styrene-Butadiene-Rubber Compound Modified binder ", 98th TRB Annual Meeting, Washington D.C., January 2019 (under review)
16. H. Wu, J. Liu and X. Zhang, "Numerical Analysis for the Cooling Performance of a Novel Air Convection Embankment in Permafrost Regions", International Airfield and Highway Pavement Conference 2019, Chicago, July 2019 (abstract submitted).
17. H. Wu, H. Zhao and J. Liu, "In Situ Experimental Study of FFT-based Bridge Weigh-in-motion System on a Continuous Box Girder Bridge", 9th International Conference on Structural Health Monitoring of Intelligent Infrastructure, St. Louis, August 2019 (abstract submitted).
18. J. Liu, S. Zhao, Y. Xie, T. Xia, and H. Wu, "Development of a Ground Penetrating Radar Data Processing Method and Tool for Railroad Ballast Inspection", 98th TRB Annual Meeting, Washington D.C., January 2019 (under review).
19. H. Wu, H. Zhao and J. Liu, "Field Assessment of FFT-based Bridge Weigh-in-Motion System on A Continuous Box Girder Bridge", 98th TRB Annual Meeting, Washington D.C., January 2019 (under review).
20. J. Liu and S. Zhao, "Evaluation of Pre-cut Technique in Asphalt Concrete Pavements in Cold Climate", 97th TRB Annual Meeting, Washington D.C., January 2018.
21. J. Liu, L. Li, and S. Saboundjian, "Permanent Deformation Behavior of Alaskan Base Course Materials under Freeze-thaw Cycles", 97th TRB Annual Meeting, Washington D.C., January 2018.
22. Liu, J., Zhao, S., and Li, L., "Low Temperature Cracking Analysis of Asphalt Binders and Mixtures," The 96th Annual Meeting of the Transportation Research Board (TRB), Paper No. 17-06166, Washington, D.C., January, 2017.
23. A. Narayan, O. O. Awoleke, M. Ahmadi, and J. Liu, "An Investigation into the Cold Heavy Oil Production with Sand Process Using Synthetic Cores and Designed Experiments", SPE Western Regional Meeting, Anchorage, AK, 2016, <https://www.onepetro.org/conference-paper/SPE-180373-MS>.
24. J. Liu and S. Zhao, "Characterization of Hot-Mix Asphalt containing Reclaimed Asphalt Pavement Material in Cold Climate: An Alaskan Experience", 4th international conference in Sustainable Construction Materials and Technologies, Las Vegas, NV, 2016 , <http://www.claisse.info/2016%20papers/S275.pdf>).

25. L. Li, S. Saboundjian, J. Liu, and X. Zhang, "Permanent Deformation Behavior of Alaskan Granular Base Materials", 10th International Symposium on Cold Regions Development, Anchorage, AK, 2013, <http://ascelibrary.org/doi/abs/10.1061/9780784412978.042>.
26. H. Zubeck, A. Mullin, and J. Liu, "Survey on Pavement Preservation Treatments in Cold Regions", the 4th European Pavement and Asset Management Conference, Malmö, Sweden, 2012, <https://trid.trb.org/view.aspx?id=1240113>.
27. H. Zubeck, A. Mullin, and J. Liu, "Pavement Preservation Practices in Cold Regions", the 15th International Specialty Conference on Cold Regions Engineering, Quebec City, Canada, 2012, <http://ascelibrary.org/doi/abs/10.1061/9780784412473.014>.
28. P. Li, L. Li, J. Liu, and S. Saboundjian, "Selection of Asphalt Stabilization Methods for Alaska Base Layers", Geo-Frontiers 2011, Dallas, TX, 2011, [http://ascelibrary.org/doi/abs/10.1061/41165\(397\)461](http://ascelibrary.org/doi/abs/10.1061/41165(397)461).
29. P. Li, J. Liu, A. Shen, and S. Ping, "Determination of Fatigue Limit for Perpetual Pavement Design in Binzhou, China", the 88th Transportation Research Board Annual Meeting, Washington, D.C., 2009, <https://trid.trb.org/view.aspx?id=882386>.
30. J. Liu and P. Li, "Experimental Study on Gilonite-modified Asphalt", Proceeding of the 2008 Airfield and Highway Pavement Specialty Conference, Transportation and Development Institute of the ASCE, ASCE, Bellevue, Washington, Edited by J. R. Roesler, H. U. Bahia, I. L. Al-Qadi, and S. D. Murrell, 222-228, 2008, [http://ascelibrary.org/doi/abs/10.1061/41005\(329\)20](http://ascelibrary.org/doi/abs/10.1061/41005(329)20).
31. B. Chen, J. Liu and P. Li, "Experimental Study on Pervious Concrete", Proceeding of the 9th International Conference on Concrete Pavements, San Francisco, CA, 2008, <https://trid.trb.org/view.aspx?id=1263362>.
32. J. Liu, A. Mukhopadhyay, and D. G. Zollinger, "Selecting Construction Measures for Mitigating Early-age Delamination in CRC Pavements made with Gravel Aggregates", the 86th Transportation Research Board Annual Meeting, Washington, D.C., 2007, [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)TE.1943-5436.0000013](http://ascelibrary.org/doi/abs/10.1061/(ASCE)TE.1943-5436.0000013).
33. J. Liu, D. Ye, and D. G. Zollinger, "Design and Evaluation of Mitigating Early Age Delamination in CRC Pavements Made with Gravel Aggregates", 6th International DUT-Workshop on Fundamental Modeling of Design and Performance of Concrete Pavements, Belgium, 2006, <http://www.cciinformationcentre.org/ActiveConnect2002/DesktopModules/MediaAnalyticalDisplay.aspx?index=77354>.
34. J. Liu, A. Mukhopadhyay, and D. G. Zollinger, "Selection of Design Factors for the Use of Gravel in CRC Paving", Proceeding of the 2006 Airfield and Highway Pavement Specialty Conference, Al-Qadi ed., Transportation and Development Institute of the ASCE, ASCE, Reston, Georgia, 557-565, 2006, [http://ascelibrary.org/doi/abs/10.1061/40838\(191\)47](http://ascelibrary.org/doi/abs/10.1061/40838(191)47).
35. J. Liu, A. Mukhopadhyay, and D. G. Zollinger, "Contribution of Aggregates to the Bonding Performance of Concrete", the 85th Transportation Research Board Annual Meeting, Washington, D.C., January 2006, <https://trid.trb.org/View/777602>.
36. J. Liu and D. G. Zollinger, "Shrinkage Effect on Stress Intensity Factors of Concrete Pavements at Early Age", Workshop on Fracture Mechanics for Concrete Pavements, International Society for Concrete pavements, 2005, [https://www.researchgate.net/profile/Lev\\_Khazanovich/publication/233013316\\_Finite\\_element\\_study\\_of\\_partial-depth\\_cracks\\_in\\_restrained\\_PCC\\_slabs/links/556496bd08ae89e758fd929c/Finite-element-study-of-partial-depth-cracks-in-restrained-PCC-slabs.pdf](https://www.researchgate.net/profile/Lev_Khazanovich/publication/233013316_Finite_element_study_of_partial-depth_cracks_in_restrained_PCC_slabs/links/556496bd08ae89e758fd929c/Finite-element-study-of-partial-depth-cracks-in-restrained-PCC-slabs.pdf).

37. J. Liu, D. G. Zollinger, S. Tayabji, and K. Smith, "SAPER: Tool for Selecting Concrete Pavement Repair and Rehabilitation Treatments", the 83rd Transportation Research Board Annual Meeting, Washington, D.C., 2004.
38. D. Cheng, C. J. Messer, Z. Tian and J. Liu, "Modification of Webster's Minimum Delay Cycle Length Equation Based on HCM 2000", the 82nd Transportation Research Board Annual Meeting, Washington, D.C., 2003, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.520.8324&rep=rep1&type=pdf>.
39. J. Liu, "Repair and Rehabilitation Strategies Selection for Concrete Pavements", the 4th International Ph.D. Symposium in Civil Engineering, Munich, Germany, 2002).

***Peer-reviewed Conference Session Abstracts***

40. Sustainable Materials, Design and Operations of Transportation Infrastructure in Cold Regions, ASCE Congress on Technical Advancement, Duluth, MN, September 10-13, 2017.
41. Sustainable Asphalt Pavements: Materials and Performance, ASCE Congress on Technical Advancement, Duluth, MN, September 10-13, 2017.
42. Asphalt Recycling Workshop, ASCE Congress on Technical Advancement, Duluth, MN, September 10-13, 2017.

***Technical Reports***

1. J. Liu, S. Zhao, and L. Li, "Performance of Tencate Paving Interlayers in Asphalt Concrete Pavements", INE/CESTiCC Report, UAF, AK, 2017.
2. J. Liu, S. Zhao, and R. McHattie, "Continued Field Evaluation of Precutting for Maintaining Asphalt Concrete Pavements with Thermal Cracking", INE/CESTiCC Report, UAF, AK, 2017 <http://cem.uaf.edu/media/244760/precut-final-report.pdf>.
3. J. Liu, S. Zhao, and L. Li, "Characterization of Alaskan Hot-Mix Asphalt Containing Reclaimed Asphalt Pavement Material", INE/CESTiCC Report, UAF, AK, 2016, <https://trid.trb.org/view.aspx?id=1417855>.
4. J. Liu, R. McHattie, X. Zhang, and John Netardus, "Evaluation of Precut Transverse Cracks for an Asphalt Concrete Pavement in Interior Alaska (Moose Creek –Richardson Highway)", INE/AUTC Report, UAF, AK, 2015, <https://trid.trb.org/view.aspx?id=1372572>.
5. P. Li, J. Liu, and P. Eckman, "Performance of Tencate Mirafi PGM-G4 Interlayer-Reinforced Asphalt Pavements in Alaska", INE Report, UAF, AK, 2014.
6. A. Chamberlain, J. Liu, X. Zhang, and L. Li, "Impact of Fines in the Unbound Pavement Layers", INE/AUTC Report, UAF, AK, 2014, <https://trid.trb.org/view.aspx?id=1331606>.
7. J. Liu and R. McHattie, "Work Plan for Special Design Features & Crack Sealing Maintenance for IM-OA4-4(15)/61275 Parks Highway M.P. 239-252 Rehabilitation", INE/AUTC Report, UAF, AK, 2014, [https://scholarworks.alaska.edu/bitstream/handle/11122/7528/J.Liu-et-al\\_Design-Features-Crack-Sealing\\_Final-14.02.pdf?sequence=1](https://scholarworks.alaska.edu/bitstream/handle/11122/7528/J.Liu-et-al_Design-Features-Crack-Sealing_Final-14.02.pdf?sequence=1).
8. P. Li and J. Liu, "Verification of Job Mix Formula for Alaskan Hot Mix Asphalt", INE/AUTC Report, UAF, AK, 2013, <https://trid.trb.org/view.aspx?id=1331607>.
9. R. McHattie, A. Mullin, and J. Liu, "Evaluating the Need to Seal Thermal Cracks in Alaska's Asphalt Concrete Pavement", INE/AUTC Report, UAF, AK, 2013, [https://scholarworks.alaska.edu/bitstream/handle/11122/7529/R.McHattie-et-al\\_Evaluating-Need-to-Seal-Thermal-Cracks\\_Final-12.27.pdf?sequence=1](https://scholarworks.alaska.edu/bitstream/handle/11122/7529/R.McHattie-et-al_Evaluating-Need-to-Seal-Thermal-Cracks_Final-12.27.pdf?sequence=1).
10. M. Lee, R. McHattie, and J. Liu, "Inclusion of LCCA in Alaska Flexible Pavement Design Software Manual", INE/AUTC Report, UAF, AK, 2013,

[https://pdfs.semanticscholar.org/b93a/a6fd2e359027c416ad6f905dba3950f1cf02.pdf?\\_ga=2.129701452.1993247530.1500090383-406141368.1500090383](https://pdfs.semanticscholar.org/b93a/a6fd2e359027c416ad6f905dba3950f1cf02.pdf?_ga=2.129701452.1993247530.1500090383-406141368.1500090383).

11. P. Li and J. Liu, "Characterization of Alaskan HMA Mixtures with the Asphalt Mixture Performance Tester", INE/AUTC Report 12.21, UAF, AK, 2012, <https://trid.trb.org/view.aspx?id=1329344>.
12. G. Hicks, D. Cheng, H. Zubeck, and J. Liu, "Develop Guidelines for Pavement Preservation Treatments and for Building a Pavement Preservation Platform for Alaska", INE/AUTC Report 12.07, UAF, AK, 2012, [http://tundra.ine.uaf.edu/files/2013/05/AUTC\\_Combined\\_report-12-11-12-final.pdf](http://tundra.ine.uaf.edu/files/2013/05/AUTC_Combined_report-12-11-12-final.pdf).
13. H. Zubeck, J. Liu, and A. Mullin, "Pavement Preservation Practices in Cold Regions", INE/AUTC Report 12.08, UAF, AK, 2012, <http://ascelibrary.org/doi/abs/10.1061/9780784412473.014>.
14. J. Liu, A. Mullin, and J. Rein, "Use of the Micro-Deval Test for Assessing Alaska Aggregates", INE/AUTC Report 12.14, UAF, AK, 2012, <https://scholarworks.alaska.edu/handle/11122/7508>.
15. L. Li, J. Liu, and X. Zhang, "Impact of Fines Content on Resilient Modulus Reduction of Base Courses during Thawing", AUTC/AKDOT&PF Research Report, UAF, AK, 2010, [https://books.google.com/books/about/Impact\\_of\\_Fines\\_Content\\_on\\_Resilient\\_Mod.htm?l?id=CUuoYgEACAAJ](https://books.google.com/books/about/Impact_of_Fines_Content_on_Resilient_Mod.htm?l?id=CUuoYgEACAAJ).
16. P. Li and J. Liu, "Characterization of Asphalt Treated Base Course Material", AUTC/AKDOT&PF Research Report, UAF, AK, 2010, <http://ine.uaf.edu/autc/files/2011/09/Characterization-of-Asphalt-Treated-Base-Course-Material-Final-Report.pdf>.
17. J. Liu, "Performance of Warm Mix Asphalt with the Astec Double-Barrel Green System", AKDOT&PF Research Report, UAF, AK, 2010.
18. J. Liu, "Evaluation of Warm Mix Asphalt for Alaska Conditions", AUTC/AKDOT&PF Research Report, UAF, AK, 2010, [https://scholarworks.alaska.edu/bitstream/handle/11122/7459/J.Liu\\_Warm-Mix-Asphalt-in-Alaska\\_Final-11.09.pdf?sequence=1](https://scholarworks.alaska.edu/bitstream/handle/11122/7459/J.Liu_Warm-Mix-Asphalt-in-Alaska_Final-11.09.pdf?sequence=1).
19. H. Lee, A. Selim, H. Wen, G. Flintsch, K. Chou, Y. Kim, J. Liu, N. Bush, N. Suleiman, H. Mahgub, M. Losa, and E. Santagata, "Survey on Road Surface (or Pavement) Management System for Local Governments in Support of GASB 34", ASCE Transportation & Development Institute, 2008.
20. J. Liu, "Screening Test of Gilsonite Application", Alaska University Transportation Center, University of Alaska Fairbanks, AK, 2007.
21. J. Liu, A. Mukhopadhyay, and D. G. Zollinger, "Best Practices for the Use of Siliceous River Gravel in Concrete Paving", FHWA/TX-07/0-4826-1, Texas Transportation Institute, Texas A&M University, College Station, TX, 2006, <https://static.tti.tamu.edu/tti.tamu.edu/documents/0-4826-1.pdf>.
22. J. Liu, D. G. Zollinger, S. Tayabji, and K. Smith, "Repair and Rehabilitation of Concrete Pavement: Volume IV", FHWA-01-00080, Texas Transportation Institute, Texas A&M University, College Station, TX, 2004.
23. J. Liu and D. G. Zollinger, "Application of a bonded concrete overlay to a CRCP in Texas", Performance of Innovative Maintenance Techniques and Strategies FORMAT WP3 Report, European Community, 2004.

#### ***Other Articles***

1. J. Liu, "Cutting Down", Roads & Bridges, 38-40, March 2018.



2. J. Liu, "Increasing Knowledge of Asphalt-treated Base Course Materials", The AUTC Newsletter, 5(1), 6-7, 2011.

### ***Presentations***

1. Recycling in Alaska's Transportation Infrastructure, TRB ADC60 2018 Summer Workshop, Spokane, WA, July 2018.
2. Characterizing the Permanent Deformation Behavior of Alaskan Granular Base Course Materials, the 97th TRB Annual Meeting, Washington, D.C., January 2018.
3. Evaluation of Precut Technique to Control Thermal Cracking in Alaskan Asphalt Concrete Pavements, the 97th TRB Annual Meeting, Washington, D.C., January 2018.
4. Low Temperature Cracking Analysis of Asphalt Binders and Mixtures, Transportation Infrastructure Conference, Rolla, MO, December 2017.
5. Field Evaluation of Precutting Technique for Maintaining AC Pavements with Thermal Cracking, ASCE Congress on Technical Advancement, Duluth, MN, September 2017.
6. Field Evaluation of Precutting Technique for Maintaining AC Pavements with Thermal Cracking, CESTiCC 2017 Summer Workshop, Pullman, WA, August 2017.
7. Recycling in Alaska's Transportation Infrastructure, 2nd International Conference on Transportation Infrastructure and Materials, June 2017.
8. Influence of Water Access Condition during Freezing on the Resilient Behavior of Alaskan Based Course Materials, Transportation Research Congress 2016, Beijing, China, May 2017.
9. Recycling in Alaska's Transportation Infrastructure, Keynote Speech, Transportation Research Congress 2016, Beijing, China, May 2017.
10. Materials Adaptation to Climate Change and Extreme Events: Case Studies, 1st International Workshop on Sustainability Innovation in Transportation Infrastructure, Knoxville, TN, March 2017.
11. Life Cycle Sustainability of Asphalt Concrete Pavement, Panel session, ASCE CI Summit Meeting, Anaheim, CA, March 2017.
12. Low Temperature Cracking Analysis of Asphalt Binders and Mixtures, the 96th TRB Annual Meeting, Washington, D.C., January 2017.
13. Critical Low Temperature, from Asphalt Binder to Mixture, 7th IACIP Annual Workshop, Washington D. C., January 2017.
14. Sustainable Materials and Design for Alaskan Pavements, Professional Development Seminar, University of Alaska Anchorage, November 2016.
15. Planning and Preparation for an Academic Career (II), CESTiCC and IACIP webinar, November 2016 (panelist).
16. Performance of Paving Fabric Reinforced Asphalt Mixture, CESTiCC 2016 Summer Workshop, Bozeman, MT, August 2016.
17. Characterization of Alaskan Hot-Mix Asphalt containing Reclaimed Asphalt Pavement Material, CESTiCC 2016 Summer Workshop, Bozeman, MT, August 2016.
18. Evaluation of Precut Transverse Cracks for an Asphalt Concrete Pavement in Interior Alaska, CESTiCC 2016 Summer Workshop, Bozeman, MT, August 2016.
19. Characterization of Hot-Mix Asphalt containing Reclaimed Asphalt Pavement Material in Cold Climate: An Alaskan Experience, 4th international conference in Sustainable Construction Materials and Technologies, Las Vegas, NV, August 2016.
20. Performance of Multi-Axial Paving Interlayer Reinforced Asphalt Pavement, World-Famous Expert Lecture in Hubei Program, Hubei Department of Education, China, June 2016.
21. Materials and Infrastructure, World-Famous Expert Lecture in Hubei Program, Hubei Department of Education, China, June 2016.

22. Implementation of Stress Dependent Resilient Modulus of Asphalt Treated Base for Flexible Pavement Design, Transportation Research Congress 2016, Beijing, China, June 2016.
23. Field Evaluation of Precut Thermal Cracks in AC Pavement in Alaska, Transportation Research Congress 2016, Beijing, China, June 2016.
24. Critical Low Temperature, from Asphalt Binder to Mixture, International Workshop on the Genome of Stone-based Civil Infrastructure Materials, Beijing, China, June 2016.
25. Advances in Pavement Design, Construction, Preservation and Assessment, ASCE CI Summit Meeting, Orlando, FL, March 2016.
26. Introduction to ACI Alaska Chapter, ASCE Fairbanks Student Chapter Meeting, December 2015.
27. CESTiCC Overview, ASCE Fairbanks Chapter Meeting, October 2015.
28. Field Evaluation of Precut Thermal Cracks in an AC Pavement in Alaska, International Symposium on Systematic Approaches to Environmental Sustainability in Transportation, Fairbanks, AK, August 2015.
29. Crack Surveying Methods to Evaluate Sealing Practice in Alaska, International Symposium on Systematic Approaches to Environmental Sustainability in Transportation, Fairbanks, AK, August 2015.
30. Pavement Preservation in Cold Regions, Summer Transportation Institute, Fairbanks AK, June 2015.
31. CESTiCC Research Highlights, CUTC Summer Meeting, New Brunswick, NJ, June 2015.
32. Findings in Characterization of Alaska Transportation Materials for M-E Pavement Design, FHWA MEPDG Peer Exchange Meeting, Portland, OR, April 2015.
33. Advances and Challenges in Asphalt Paving, ASCE Construction Institute Summit, Henderson, NV, February 2015.
34. Development of Innovative Antifreeze Grout Mortar for Anchor Application in Cold Regions, the 94th TRB Annual Meeting, Washington, D.C., January 2015.
35. Performance of Multi-Axial Paving Interlayer Reinforced Asphalt Pavement, 5th IACIP Annual Workshop, Washington D. C., January 2015.
36. An Automated System for Rail Transit Infrastructure Inspection, CESTiCC November Webinar, November 2014.
37. Development of Innovative Antifreeze Grout Mortar for Anchor Application in Cold Regions, Alaska Concrete Summit Meeting, Anchorage, AK, November 2014.
38. Evaluation of Pavement Preservation Treatments in Cold Regions, 17th Annual National Native Tribal Transportation Conference, Anchorage, AK, September 2014.
39. Micro-Deval Test for Assessing Alaska Aggregates, AKDOT&PF RD&T2 workshop, July 2014.
40. CESTiCC Overview, U.S. DOT OST-R Kick-off meeting, June 2014.
41. Evaluation of Pavement Preservation Treatments Used in Alaska, GeoShanghai International Conference, Shanghai, China, May 2014.
42. Predictive Model for Nonlinear Resilient Modulus of Emulsified Asphalt Treated Base, GeoShanghai International Conference, Shanghai, China, May 2014.
43. Transportation Infrastructure in Cold Climates, Engineering session in Kids2College program, April 2014.
44. Working with Transportation Infrastructure in Cold Climates, Annual Engineering Open House, February 2014.
45. Materials Innovations for Sustainable Infrastructure, ASCE Construction Institute (CI) Summit, Dallas, TX, September 2013.
46. Evaluation of Pavement Preservation Treatments Used in Alaska, International Symposium of Climatic Effects on Pavement and Geotechnical Infrastructure, August 2013.

47. Performance of Paving Fabric Reinforced Asphalt Mixture, International Symposium of Climatic Effects on Pavement and Geotechnical Infrastructure, August 2013.
48. A Field Study of Sealing Thermal Cracks in Alaska's Asphalt Pavements, International Symposium of Climatic Effects on Pavement and Geotechnical Infrastructure, August 2013.
49. Permanent Deformation Behavior of Alaskan Granular Base Materials, 10th International Symposium on Cold Regions Development, Anchorage, AK, June 2013.
50. Evaluating the Necessity for Sealing Thermal Cracks in Alaska's AC Pavements, ASCE Bituminous Materials Committee (BMC) Annual Meeting, January 2013.
51. Impact of Fines in the Unbound Pavement Layers, Alaska Society of Professional Engineers monthly meeting, March 2012.
52. Pavement and Materials Research in Alaska, Online seminar to faculty and students in School of Transportation Science & Engineering, Harbin Institute of Technology, China, November 2011.
53. Simple Performance Testing of Alaskan Asphalt Mixes, AUTC Governing Board Meeting, October 2011.
54. Resilient Modulus Characterization of Alaskan Granular Base Materials, the 90th TRB Annual Meeting, Washington, D.C., January 2011.
55. WMA Project Highlight, CEM&INE Convocation, University of Alaska Fairbanks, September 2010.
56. Materials and Temperature Effects on the Resilient Response of Asphalt Treated Alaskan Base Course Materials, the 89th TRB Annual Meeting, Washington, D.C., January 2010.
57. Pavement and Materials Research at AUTC, Alaska Asphalt Pavement Summit Meeting, November 2009.
58. Resilient Modulus Characterization of Hot Asphalt Treated Alaskan Base Course Material, GeoHunan International Conference, Hunan, China, August 2009.
59. Concrete Research at AUTC, Annual education seminar of Alaska Concrete Product Association, March 2009.
60. Determination of Fatigue Limit for Perpetual Pavement Design in Binzhou, China, the 88th TRB Annual Meeting, Washington, D.C., January 2009.
61. WMA for Alaska Application, AFK30 committee meeting at the 88th TRB Annual Meeting, Washington, D.C., January 2009.
62. Materials and Pavement Research in Alaska, Changsha Science and Technology University, China, January 2009.
63. Experimental Study on Gilsonite-modified Asphalt, ASCE Airfield and Highway Pavement Specialty Conference, Bellevue, Washington, October 2008.
64. Experimental Study on Pervious Concrete, the 9th International Conference on Concrete Pavements, San Francisco, CA, August 2008.
65. Detection of Delamination in Concrete Pavements using Ground-Coupled GPR Technique, the 87th TRB Annual Meeting, Washington, D.C., January 2008.
66. Property of High Strength Concrete Made with Field-Demolished Concrete Aggregates, the 87th TRB Annual Meeting, Washington, D.C., January 2008.
67. Early Age Delamination in Concrete Pavements Made with Gravel Aggregates, Shanghai Jiaotong University, China, May 2007.
68. Characterization of ATB course materials, Alaska Asphalt Paving Alliance meeting, Fairbanks, April 2007.
69. Selecting Construction Measures for Mitigating Early-age Delamination in CRC Pavements made with Gravel Aggregates, the 86th TRB Annual Meeting, Washington, D.C., January 2007.
70. A Two-Step Fracture Mechanics-based Approach for Assessing Early-age Delamination Distress, the 86th TRB Annual Meeting, Washington, D.C., January 2007.

71. Selection of Design Factors for the Use of Gravel in CRC Paving, The 2006 Airfield and Highway Pavement Specialty Conference, Transportation and Development Institute of the ASCE, Atlanta, Georgia, April 30 –May 3, 2006.
72. Early Age Delamination in Concrete Pavements Made with Gravel Aggregates, the Utah State Transportation Seminar, Logan, Utah, 2006.
73. Materials and Infrastructure, guest speaker in class of CE 207 Introduction to Civil Engineering Profession, Texas A&M University, April 2006.
74. Research on Pavement and Infrastructure Engineering, NSF workshop for the Advancement and Retention of Underrepresented and Minority Engineering Educators, Arlington, Virginia, March 2006.
75. Aggregate Testing and the Effects of Aggregate Properties on Pavement Performance, the 85th TRB Annual Meeting, Washington, D.C., January 2006.
76. Panel discussion in Civil Engineering Women’s Mentoring Group, Texas A&M University, September 2005.
77. Shrinkage Effect on Stress Intensity Factors of Concrete Pavements at Early Age, Workshop on Fracture Mechanics for Concrete Pavements, International Society for Concrete pavements, Copper Mountain, Colorado, August 2005.
78. Developing Teaching Portfolio, Graduate Teaching Academy (GTA) Teaching Portfolio Workshop, Texas A&M University, February 2005.
79. Application of Reliability Concept in Concrete Pavement Rehabilitation Decision Making, the 84th TRB Annual Meeting, Washington, D.C., January 2005.

***Other Product***

1. S. Zhao, J. Alloway, and J. Liu, “[Environmental Sustainability in Transportation Infrastructure — an Outreach Video](#)”, CESTiCC, 2017.