

# ERDEM COLERI

## Assistant Professor

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## Education and Employment Information

### Education

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2011	Ph.D., Civil and Environmental Engineering University of California, Davis
2007	M.S., Civil Engineering Middle East Technical University
2005	B.S., Civil Engineering Middle East Technical University

### Professional Experience

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Sept. 2014-present	Assistant Professor School of Civil and Construction Engineering Oregon State University
Sept. 2015–Sept. 2017	Assistant Professor and Loosley Faculty Fellow School of Civil and Construction Engineering Oregon State University
March 2013- September 2014	Assistant Project Scientist (Step III) Department of Civil and Environmental Engineering University of California, Davis <ul style="list-style-type: none"><li>• Development of viscoelastic pavement vehicle interaction models to evaluate the effects of pavement type (asphalt, concrete or composite) on fuel consumption (<b>Project Manager</b>).</li><li>• Development of a micromechanical viscoelastic finite element model from X-Ray computed tomography images for Hamburg Wheel Tracking Test (HWTT).</li><li>• Investigation of consistency, repeatability and reproducibility of Asphalt Mixture Performance Tester (AMPT) laboratory test results between different laboratories (NCHRP 9-52 project).</li><li>• Development of a standard procedure and test section for the operation, calibration and operator certification of inertial road profilers in California (<b>Project Manager</b>).</li><li>• Test and include additional regional materials in the Caltrans mechanistic-empirical (ME) standard materials library.</li></ul>

October 2011-  
March 2013

Postdoctoral Scholar  
Department of Civil and Environmental Engineering  
University of California, Davis

- Development of a micromechanical viscoelastic finite element model from X-Ray computed tomography images for full-scale accelerated pavement testing.
- Investigation of open-graded asphalt concrete rutting failure mechanisms by comparing X-Ray CT images taken before and after accelerated pavement testing.
- Evaluation of pavement friction courses clogging susceptibility by X-Ray CT imaging and rainfall simulations.
- Performing Automatic Pavement Condition Surveys (APCS) on the Caltrans pavement network.
- Life-cycle cost and environmental life-cycle analysis for composite pavements.

February 2012-June  
2013

Independent Technical Consultant  
Sensys Networks, Inc.

- Development, testing, and commercialization of a Wireless Weigh-in-Motion (W-WIM) system to measure truck loads on pavements and bridges.
- Provide recommendations for the improvement of wireless automatic vehicle classification (AVC) systems.

## Research Interests

- Characterization of asphalt pavements
- Recycled asphalt concrete mixtures at high replacement contents
- Sustainable strategies for pavement design and rehabilitation
- Pavement LCA
- Network level pavement sustainability
- Modeling the effect of pavement roughness and stiffness on fuel consumption
- Multiscale finite element modeling of pavement materials and structures
- Wireless sensor networks (WSN) for infrastructure health monitoring
- Data mining, analysis and performance modeling from laboratory, accelerated pavement, and field tests

## Awards

### National and International Awards

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- Outstanding Reviewer Award, Journal of Computing in Civil Engineering, American Society of Civil Engineers, 2014.
- Award for the best paper in 2012 in the 4th International Conference on Accelerated Pavement Testing for the paper entitled “*Calibration of Incremental-Recursive Rutting Prediction Models in CalME Using Heavy Vehicle Simulator Experiment*”.

## **University or Community Awards**

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- John and Jean Loosley Faculty Fellow, 2015, Oregon State University

## **Teaching, Advising, and Other Assignments**

### **Instructional Summary**

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#### **Credit Courses**

<b>Number</b>	<b>Course Title</b>	<b>Term/Year</b>	<b>Credits</b>	<b>Enrollment</b>
CCE321	Civil and Construction Engineering Materials	Fall 2014	4	53
CCE520	Pavement Design and Sustainability	Spring 2015	3	9
CCE321	Civil and Construction Engineering Materials	Fall 2015	4	62
CCE520	Advanced Pavement Materials	Winter 2016	3	7
CE492/592	Pavement Structures	Spring 2016	3	13
CCE321	Civil and Construction Engineering Materials	Fall 2016	4	57
CCE520	Advanced Pavement Materials	Spring 2017	3	5
CE492/592	Pavement Structures	Spring 2017	3	12

#### **Course and Curriculum Development**

**CCE 321 – Civil and Construction Engineering Materials** –This course provides information on aggregate, concrete, asphalt, steel/aluminum, and wood materials for construction.

**CCE520 – Pavement Design and Sustainability** - It is becoming increasingly apparent that in order to achieve a sustainable transportation network, pavements should be designed by considering not only long-term performance, but also energy efficiency and environmental impacts. This brand new course teaches students how to use methods and software to design pavement structures that are more cost effective, socially beneficial, and does less damage to the environment. The course explores innovative design methods that were developed to investigate distress mechanisms of pavements including alternatives intended to address environmental performance goals. In addition, this course teaches students how to implement pavement design strategies that can have a considerable impact on fuel consumption, recycled asphalt use, vehicle maintenance costs, greenhouse gas (GHG) emissions, and life-cycle costs.

**CCE520 – Advanced Pavement Materials** – This brand new course teaches students how to design asphalt-aggregate mixtures (Superpave mix design method) to meet performance requirements. Recycling processes for asphalt mixtures and applications of other sustainable asphalt pavement technologies, such as rubberized asphalt, permeable pavements, and warm-mix asphalt, are also discussed. Characteristics of concrete pavement mixture types and concrete pavement construction and durability are also discussed. Environmental impacts of concrete and asphalt pavements’ production, construction, and use phases are also compared towards the end of the term. These comparisons are intended to provide an understanding of the importance of considering the complete pavement life cycle to evaluate environmental impacts.

## Student and Participant Evaluations

Course No.	Term	Enrollment	# Responding	Student Evaluation (#1/#2)	College Median* (#1/#2)	Required /Elective
CCE 321	Fall 2014	53	45	4.9/5.0	4.7/4.9	Required
CCE520	Spring 2015	9	9	5.9/5.9	5.3/5.4	Elective
CCE 321	Fall 2015	62	53	5.2/5.6	4.7/4.9	Required
CCE520	Winter 2016	7	5	5.3/5.9	5.3/5.5	Elective
CE 492/592	Spring 2016	13	9	5.8/5.9 (492) 5.8/5.9 (592)	4.9/5.0 (492) 5.3/5.4 (592)	Elective
CCE 321	Fall 2016	57	45	5.6/5.6	4.7/4.9	Required
CCE520	Spring 2017	5	-	-	-	Elective
CE 492/592	Spring 2017	12	9	5.8/5.9 (492) 5.8/5.9 (592)	4.9/5.1 (492) 5.1/5.3 (592)	Elective

\* College median scores are shown separately for each level (e.g., 400, 500) taught.

## Advising

### Graduate Advisees – Completed

Student	Degree	Thesis	Graduated
1. David James Covey	MS	<i>Evaluation of Oregon Tack Coat Performance to Reduce Tracking and Increase Interlayer Shear Strength of Asphalt Pavements</i>	Summer 2016
2. Aiman Mahmoud	MS	<i>Development of Technologies to Evaluate Hot Mix Asphalt Layer Adhesion through Tack Coat</i>	Summer 2016
3. Sogol Sadat Haddadi	MS	<i>Moving Towards Sustainability and Increasing User Safety by Improving Performance of RAP Mixtures and Developing a Network-Level Decision-Making Tool for Pavement Maintenance</i>	Spring 2017

### Graduate Advisees – Current

Student	Degree	Expected Graduation
1. Shashwath Sreedhar	PhD	Summer 2019
2. Mostafa Estaji	PhD	Spring 2019
3. Ihsan Ali Obaid	PhD	Winter 2020
4. Yuqi Zhang	MEng	Summer 2017
5. Blaine Wruck	MS	Winter 2019
6. Sunny Lewis	MS	Spring 2018
7. Matthew Haynes	MS	Spring 2019

## **Graduate Thesis or Project Committees**

### **Minor Professor or Committee Member:**

#### ***Graduated***

1. James Darnell, MS, 2015
2. Neil Schweitzer, MEng, 2016
3. Jason Anderson, MS, 2016
4. Luca Montanari, MS, 2017

#### ***Current***

1. Jon Huffman, PhD
2. Jason Anderson, PhD

## **Undergraduate Research Assistants**

1. Caleb Lennon (Winter 2015 - Summer 2015)
2. Blaine Wruck (Winter 2015 - Winter 2017)
3. Dylan Kreiger (Winter 2016 - Fall 2016)
4. Jawad Qassem (Winter 2017 – Spring 2017)
5. Matthew Haynes (Winter 2016 – Spring 2017)
6. Nicholas Giles (Fall 2016 – Spring 2017)
7. Natasha Anisimova (Winter 2016 – present) (EECS)
8. Timothy Flowerday (Fall 2016 – present)
9. Nicholas Kolstad (Winter 2017 – present)
10. Andrew Johnson (Winter 2017 – present)
11. John Paul Morton (Winter 2017 – present)
12. Erick Daniel Moreno Rangel (Winter 2018-present)

# Scholarship and Creative Activity

## Publications

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Graduate students are shown in bold font.

### Refereed Journal Publications

1. **Covey, D.**, E. Coleri, **A. Mahmoud**, (2017). *Tack Coat Rheological Properties and the Effects on Interlayer Shear Strength*. ASCE - Journal of Materials in Civil Engineering, 29 (11), p.1-11, doi.org/10.1061/(ASCE)MT.1943-5533.0002054.
2. **Mahmoud, A.**, E. Coleri, J. Batti, and **D. Covey**. (2017). *Development of a Wireless Field Tack Coat Tester to Evaluate In-Situ Tack Coat Performance*. Journal of Road Materials and Pavement Design, p.1-19, doi: 10.1080/14680629.2017.1354775.
3. Bajwa, R., E. Coleri, R. Rajagopal, P. Varaiya, and C. Flores. (2017). *Development of a Cost-Effective Wireless Vibration Weigh-In-Motion System to Estimate Axle Weights of Trucks*. Computer-Aided Civil and Infrastructure Engineering, 32, No.6, p.443-457, DOI: 10.1111/mice.12269.
4. Coleri E. and J.T. Harvey. (2017). *Impact of Pavement Structural Response on Vehicle Fuel Consumption*. ASCE's Journal of Transportation Engineering, Part B: Pavements, 143, No.1, <https://doi.org/10.1061/JPEODX.0000004>.
5. **Mahmoud, A.**, E. Coleri, J. Batti, **D. Covey**. (2017) *Development of A Field Torque Test to Evaluate In-Situ Tack Coat Performance*. Journal of Construction and Building Materials, 135, p.377-385, doi.org/10.1016/j.conbuildmat.2017.01.013.
6. Zak, J., C.L. Monismith, E. Coleri, J.T. Harvey (2016). *Uniaxial Shear Tester – New Test Method to Determine Shear Properties of Asphalt Mixtures*. Journal of Road Materials and Pavement Design, 18, p.87-103, doi: 10.1080/14680629.2016.1266747.
7. Tsai, B.W., E. Coleri, J.T. Harvey, C. L. Monismith (2016). Evaluation of AASHTO T 324 Hamburg Wheel Track Device Test. *Elsevier - Construction and Building Materials*, 114, p.248-260, doi:10.1016/j.conbuildmat.2016.03.171.
8. Coleri, E., J.T. Harvey, I. Zaabar, A. Louhghalam, K. Chatti (2015). Model Development, Field Section Characterization and Model Comparison for Excess Vehicle Fuel Use Due to Pavement Structural Response. *Transportation Research Record: Journal of the Transportation Research Board*, 2589, p.40-50.
9. Coleri, E., M. Kayhanian, J.T. Harvey (2014). Permeability of Porous Friction Course Pavements: Before and After Accelerated Pavement Tests. *Transportation Research Record: Journal of the Transportation Research Board*, p.21-29, DOI:10.3141/2456-03.
10. Coleri E., M. Kayhanian, J.T. Harvey, K. Yang, J.M. Boone (2013). Clogging Evaluation of Open Graded Friction Course Pavements Tested under Rainfall and Heavy Vehicle Simulators. *Journal of Environmental Management*, 129, p.164-172, DOI: 10.1016/j.jenvman.2013.07.005.

11. Coleri, E. and J.T. Harvey (2013). Investigation of Layered Elastic Theory Prediction Accuracy for Asphalt Concrete Pavement Design Using Micromechanical Viscoelastic Finite Element Modeling. *Journal of Materials and Structures*, p.1-22, DOI: 10.1617/s11527-013-0069-6.
12. Coleri, E. and J.T. Harvey (2013). A Fully Heterogeneous Viscoelastic Finite Element Model for Full-Scale Accelerated Pavement Testing. *Journal of Construction and Building Materials*, 43, p.14-30, DOI.org/10.1016/j.conbuildmat.2013.01.022.
13. Coleri, E., J.T. Harvey, K. Yang, J.M. Boone (2013). Micromechanical Investigation of Open-graded Asphalt Friction Courses' Rutting Mechanisms. *Journal of Construction and Building Materials*, 44, p.25-34, DOI.org/10.1016/j.conbuildmat.2013.03.027.
14. Khazanovich, L., D. Tompkins, P. Saxena, R. Wu, E. Coleri, J.T. Harvey. (2014). Mechanistic-Empirical Pavement Design to Mitigate Rutting in Asphalt Overlays of Concrete Pavements Using MEPDG and CalME. *Transportation Research Record: Journal of the Transportation Research Board*, 2368, p.36-44, 10.3141/2368-04.
15. Coleri, E., J.T. Harvey, K. Yang, J.M. Boone (2012). Investigation of Asphalt Concrete Rutting Mechanisms by X-Ray Computed Tomography Imaging and Micromechanical Finite Element Modeling. *Journal of Materials and Structures*, 46, p.1027-1043, DOI: 10.1617/s11527-012-9951.
16. Coleri, E., J.T. Harvey, K. Yang, J.M. Boone (2012). A Micromechanical Approach to Investigate Asphalt Concrete Rutting Mechanisms. *Journal of Construction and Building Materials*, 30, p.36-49 DOI:10.1016/j.conbuildmat.2011.11.041.
17. Coleri, E., J.T. Harvey, K. Yang, J.M. Boone (2012). Development of A Micromechanical Finite Element Model from Computed Tomography Images for Shear Modulus Simulation of Asphalt Mixtures. *Journal of Construction and Building Materials*, 30, p.783-793, DOI:10.1016/j.conbuildmat.2011.12.071.
18. Coleri E., R. Wu, J.M. Signore, J.T. Harvey (2012). Rutting of Rubberized Gap-Graded and Polymer-Modified Dense-Graded Asphalt Overlays in Composite Pavements. *Transportation Research Record: Journal of the Transportation Research Board*, 2304, p.195-204, 10.3141/2304-22.
19. Coleri, E., J.T. Harvey (2011). Evaluation of Laboratory, Construction and Performance Variability by Bootstrapping and Monte Carlo Methods for Rutting Performance Prediction of Heavy Vehicle Simulator Test Sections. *ASCE's Journal of Transportation Engineering*, 137, No.12, p.897-906, DOI: 10.1061/(ASCE)TE.1943-5436.0000292.
20. Coleri, E., J.T. Harvey (2011). Analysis of Representative Volume Element for Asphalt Concrete Laboratory Shear Testing. *ASCE's Journal of Materials in Civil Engineering*, 23, No.12, p.1642-1653, DOI: 1061/(ASCE)MT.1943-5533.0000344.
21. Coleri, E., M. Guler, A.G. Gungor, John T. Harvey (2010). Prediction of Subgrade Resilient Modulus Using Genetic Algorithm and Curve-Shifting Methodology - Alternative to Nonlinear Constitutive Models. In *Transportation Research Record: Journal of the Transportation Research Board*, 2170, p.64-73, DOI: 10.3141/2170-08.

22. Coleri, E., B.W. Tsai, C.L. Monismith (2008). Pavement Rutting Performance Prediction by Integrated Weibull Approach. In *Transportation Research Record: Journal of the Transportation Research Board*, 2087, p. 120-130 DOI: 10.3141/2087-13.

### **Peer-Reviewed Archival Conference Publications**

- Coleri E., R. Wu, J.T. Harvey, J.M. Signore (2012). *Calibration of Incremental-Recursive Rutting Prediction Models in CalME Using HVS Experiments*. In proceedings of the 4th International Conference on Accelerated Pavement Testing, p471-481.
- Coleri, E., J.T. Harvey (2013). *Prediction of Rutting Performance Using Laboratory Measured and Strain Gauge Backcalculated Asphalt Concrete Stiffness*. In Proceedings of the 93rd Annual Meeting of the Transportation Research Board, Washington D.C., p.18.
- Bajwa, R., R. Rajagopal, E. Coleri, P. Varaiya, C. Flores. (2013). *In-Pavement Wireless Weigh-In-Motion*. In Proceedings of the 12th International Conference on Information Processing in Sensor Networks, ACM, New York, USA, 2013, p. 103-114 (25% acceptance rate).
- Bajwa, R., E. Coleri, C. Flores, R. Rajagopal, R. Kavalier, P. Varaiya, B. Wild. (2012). *An Experimental Wireless Accelerometer-Based Sensor System for Applications to WIM and Vehicle Classification*. In Proceedings of the 6th International Conference on Weigh-in-motion - ICWIM6, Dallas, Texas, p.3-12.
- Coleri, E., J.T. Harvey (2013). *Effects of Asphalt Concrete Anisotropy on Predicted Pavement Response at High Temperatures*. In Proceedings of the 92<sup>nd</sup> Annual Meeting of the Transportation Research Board, Washington D.C., p.22.
- Coleri E., L. Popescu, J.M. Signore\*, R. Wu, J.T. Harvey (2012). *PCC Slab Temperature Gradients as a Function of Structure and Environment; Experience from the SHRP II R21 Composite Pavement Test Track*. In Proceedings of the 10th International Conference on Concrete Pavements, p.339-356.
- Wu R., J.M. Signore, J.T. Harvey, E. Coleri (2012). *Assessment of JPCP Slab and Joint Movement under Multiple Structural and Environmental Conditions*. In Proceedings of the 10th International Conference on Concrete Pavements, p.408-421.
- Coleri E. (2012). *Genetic Algorithm for Finite Horizon Pavement Resurfacing Planning Problem*. In Proceedings of the 91<sup>st</sup> Annual Meeting of the Transportation Research Board, Washington D.C., p.22.

### **Other Peer-Reviewed Publications**

The following papers appeared in proceedings that were distributed primarily to attendees (as CDs, printed volumes, availability through a public website, etc.).

1. Harvey, J.T., A. Rezaei, R. Wu, I. Guada, E. Coleri, M. Kayhanian (2015). *Summary of Evaluations of Open-Graded Asphalt Mixes for Noise, Permeability and Durability*. International Airfield and Highway Pavements Conference, Miami, FL.
2. He, Y., J.T. Harvey, E. Coleri, F. Farshidi, H. Li (2013). *Effects of Specimen Preparation Variables and Testing Temperature on Asphalt Mixture Performance Tester Repeated-Load Triaxial Test for Hot-Mix Asphalt*. Presented at the 93<sup>rd</sup> Annual Meeting of the Transportation Research Board, Washington D.C.



3. Rajagopal, R., R. Bajwa, E. Coleri, P. Varaiya, C. Flores. (2013). *Sensor Network for Pavement Performance Monitoring*. Presented at the ASCE International Workshop on Computing in Civil Engineering, June 23-25, 2013. Los Angeles, CA.
4. Coleri, E., A.G. Gungor, M. Guler (2008). *Correlation between Light Falling Weight Deflectometer Test Results and Laboratory Measured Elastic Response of Unbound Materials*. IS-Atlanta, In Proceedings of the 4th International Symposium on Deformation Characteristics of Geomaterials, No. 0133.

### Papers Currently under Peer Review

NONE

### Other Publications

Transportation Research Circular E-C209 (*Integrating Asphalt Mixture Design, Structural Design, and Construction Quality Control*) prepared for Standing Committee on Characteristics of Asphalt Paving Mixtures to Meet Structural Requirements by H. Von Quintus and K.D. Hall in collaboration with F. Fee, E. Coleri, M. Heitzman, R. May, N. Morian, and E. Y. Hajj (2016). Helped write and review the circular.

### Reports to Sponsors

1. **Haddadi, S.**, Coleri, E., and **B. Wruck**. (2017). *A Network-Level Decision Making Tool for Pavement Maintenance and User Safety*. SPR 785, Draft report for Pacific Northwest Transportation Consortium (PacTrans) USDOT University Transportation Center for Federal Region 10 (under review).
2. Coleri, E., **S. Sreedhar**, **S. Haddadi**, and **B. Wruck**. (2017). *Adjusting Asphalt Mixes for Increased Durability and Implementation of a Performance Tester to Evaluate Fatigue Cracking of Asphalt Concrete*. SPR 785, Draft report for Oregon Department of Transportation, Salem, Oregon, (under review by TAC).
3. Coleri, E., **S. Haddadi**, **S. Sreedhar**, **S. Lewis**, **Y. Zhang**, and **B. Wruck**. (2017). *Binder-Grade Bumping and High Binder Content to Improve Performance of RAP-RAS Mixtures*. SPR 797, Draft report for Oregon Department of Transportation, Salem, Oregon, (under review by TAC).
4. Coleri, E., **D. Covey**, **A. Mahmoud**, J. Batti, N. Anisimova. (2017). *HMAC Layer Adhesion through Tack Coat*. Research Report for Oregon Department of Transportation, FHWA-OR-RD-17-05.
5. Harvey, J.T., Lea, J.D., Kim, C., Coleri, E., Zaabar, I., Louhghalam, A., Chatti, K., Buscheck, J., Butt, A. (2016). *Simulation of Cumulative Annual Impact of Pavement Structural Response on Vehicle Fuel Economy for California Test Sections*. Davis and Berkeley, CA: University of California Pavement Research Center. (UCPRC-RR-2015-05).
6. Newcomb, D., A. E. Martin, F. Yin, E. Arambula, E. S. Park, A. Chowdhury, R. Brown, C. Rodezno, N. Tram, E. Coleri, D. Jones, J.T. Harvey, J.M. Signore (2015). *NCHRP Report 815: Short-Term Laboratory Conditioning of Asphalt Mixtures*. Washington DC: National Cooperative Highway Research Program, Transportation Research Board, National Research Council.
7. Wu, R., I. Guada, E. Coleri, A.Rezaei, M. Kayhanian, J.T. Harvey (2013). *Implementation of New Quieter Pavement Research: Accelerated Pavement Testing and Laboratory Evaluation of Different Open-Graded Hot-Mix Asphalt Materials*. Davis and Berkeley, CA: University of California Pavement Research Center (UCD-ITS-RR-13-29).
8. Rao, S., M. Darter, D. Tompkins, M. Vancura, L. Khazanovich, E. Coleri, J.M. Signore, R. Wu, J.T. Harvey, J. Vandenbossche (2012). *Composite Pavement Systems Volume 1: HMA/PCC Pavements*.

Technical Report Prepared for Strategic Highway Research Program 2, Transportation Research Board, Washington D.C., National Research Council, National Academy of Sciences.

9. Rao, S., M. Darter, D. Tompkins, M. Vancura, L. Khazanovich, E. Coleri, J.M. Signore, R. Wu, J.T. Harvey, J. Vandenbossche (2012). *Composite Pavement Systems Volume 2: PCC/PCC Pavements*. Technical Report Prepared for Strategic Highway Research Program 2, Transportation Research Board, Washington D.C., National Research Council, National Academy of Sciences.
10. Signore, J.M., E. Coleri, R. Wu, J.T. Harvey (2012). *Integrating Pavement Preservation into the ME Design Process*. Davis and Berkeley, CA: University of California Pavement Research Center. (UCPRC-RR-2012-01).
11. Signore, J.M., R. Wu, E. Coleri, J.T. Harvey, R. Cheng, J. Zhou, L. Popescu (2012). *Performance Monitoring of Field Sections for Extended Life Benefits of Pavement Preservation Treatments*. Davis and Berkeley, CA: University of California Pavement Research Center. (UCPRC-RR-2012-05).
12. Signore, J.M., J.T. Harvey V. Kannekanti, B.D. Steven, B.W. Tsai, E. Coleri (2010). *Evaluation and Calibration of RadiCAL for Prediction of Longitudinal Cracking in Rigid Pavements*. Davis and Berkeley, CA: University of California Pavement Research Center. (TM-2008-10).
13. Guler, M., A.G. Gungor, E. Coleri, C. Avsar, O. Ozay (2007). *Adaptation of Resilient Modulus to Mechanistic-Empirical Design Specifications of Flexible Pavements*. Turkish General Directorate of Highways, Ankara, Turkey. (In Turkish).

## **Professional Meetings, Symposia, and Conferences**

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### **Presentations to Professional Groups**

- Invited Talk (2017). *Development of Strategies to Increase Recycled Asphalt Pavement Mixtures in Oregon*. New Frontiers in Construction Conference. University of Washington, Seattle, March 2017.
- Invited Talk (2017). *Oregon's Tack Coat Research & Results – What Products & Methods Should We Be Using?* 23rd Annual Oregon Asphalt Conference. Eugene, Oregon, Feb 2017.
- Invited Talk (2017). *OSU's Research on High Recycled Content Mixes*. 23rd Annual Oregon Asphalt Conference. Eugene, Oregon, Feb 2017.
- Invited Talk (2016). *HMAC Layer Adhesion through Tack Coat*. Northwest Pavement Management Association Conference. Portland, Oregon, October 2016.
- Invited Talk (2016). *Pavement Research at Oregon State University*. Turkish General Directorate of Highways. Ankara, Turkey, July 2016.
- Invited Talk (2015). *Pavement and Sustainability Research at Oregon State University*. Oregon State University Materials Science Seminar, Corvallis, Oregon, March 2015.
- Conference presentation (2015). *Model Development, Field Section Characterization and Model Comparison for Excess Vehicle Fuel Use Due to Pavement Structural Response*. Presented at the 94<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington D.C.

- Conference presentation (2014). *Permeability of Porous Friction Course Pavements: Before and After Accelerated Pavement Tests*. Presented at the 93<sup>rd</sup> Annual Meeting of the Transportation Research Board, Washington D.C.
- Committee presentation (2013). *Micromechanical Investigation of Open-graded Asphalt Friction Courses' Rutting and Clogging Mechanisms*. Presented at the 92<sup>nd</sup> Annual Meeting of the Transportation Research Board, Washington D.C at the AFD40- Standing Committee on Full-Scale Accelerated Pavement Testing meeting.
- Conference presentation (2013). *Rutting Mechanisms of Porous Asphalt Friction Courses*. Engineering Mechanics Institute Conference, Northwestern University, August 2013.
- Conference presentation (2013). *Prediction of Rutting Performance Using Laboratory Measured and Strain Gauge Backcalculated Asphalt Concrete Stiffness*. Presented at the 92<sup>nd</sup> Annual Meeting of the Transportation Research Board, Washington D.C.
- Conference presentation (2013). *Effects of Asphalt Concrete Anisotropy on Predicted Pavement Response at High Temperatures*. Presented at the 92<sup>nd</sup> Annual Meeting of the Transportation Research Board, Washington D.C.
- Committee presentation (2012). *A Micromechanical Approach to Investigate Structural Properties of Asphalt Concrete Pavements*. Presented at the 91<sup>st</sup> Annual Meeting of the Transportation Research Board, Washington D.C at the AFK50- Standing Committee on Characteristics of Asphalt Paving Mixtures to Meet Structural Requirements meeting.
- Conference presentation (2012). *Micromechanical Investigation of Asphalt Concrete Rutting Mechanisms*. Engineering Mechanics Institute Conference, University of Notre Dame, June 2012.
- Conference presentation (2012). *A Micromechanical Finite Element Model for Asphalt Concrete Shear Modulus Simulation*. Engineering Mechanics Institute Conference, University of Notre Dame, June 2012.
- Conference presentation (2012). *Rutting of Rubberized Gap-Graded and Polymer- Modified Dense-Graded Asphalt Overlays in Composite Pavements*. Presented at the 91<sup>st</sup> Annual Meeting of the Transportation Research Board, Washington D.C.
- Conference presentation (2012). *Calibration of Incremental-Recursive Rutting Prediction Models in CalME Using HVS Experiments*. Presented at the 4<sup>th</sup> International Conference on Accelerated Pavement Testing.
- Conference presentation (2012). *Genetic Algorithm for Finite Horizon Pavement Resurfacing Planning Problem*. Presented at the 91<sup>st</sup> Annual Meeting of the Transportation Research Board, Washington D.C.
- Conference presentation (2008). *Pavement Rutting Performance Prediction by Integrated Weibull Approach*. Presented at the 87<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington D.C.

## Participation at Invitational Workshops

- Invited speaker. APAO/ODOT Advanced Pavers Workshop. *Tack Coat Research in Oregon*. February 2016, Eugene, Oregon.

## Grant and Contract Support

List covers grants/contracts on which candidate served as PI or coPI only, including those funded through other institutions. “My share” indicates the amount of funding, if any, over which the candidate had control.

<i>Agency &amp; Dates</i>	<i>PI (and coPIs)</i>	<i>Title</i>	<i>Total Budget</i>	<i>My Share</i>
Oregon Dept. of Transportation (ODOT) 12/14-8/16	E. Coleri	HMAC Layer Adhesion Through Tack Coat	\$140,000	\$140,000
California Dept. of Transportation 4/15-4/17	J. Harvey – Main PI O.S.U subcontract PI: E. Coleri	Modeling Effects of Pavement Structural Response on Vehicle Fuel Economy and Simulation of Cumulative Annual Impact	\$1,600,000	\$150,374
PacTrans Region 10 UTC 12/15-6-17	E. Coleri	A Network-Level Decision Making Tool for Pavement Maintenance and User Safety	\$36,335	\$36,335
ODOT 10/15-6/17	E. Coleri	Adjusting Asphalt Mixes for Increased Durability and Implementation of a Tester to Evaluate Fatigue Cracking of Asphalt Concrete	\$170,000	\$170,000
ODOT 11/15-06/17	E. Coleri	Binder-Grade Bumping and High Binder Content to Improve Performance of RAP- RAS Mixtures	\$170,000	\$170,000
ODOT 8/17-7/19	E. Coleri	Bridge Deck Asphalt Concrete Pavement Armoring	\$185,000	\$185,000
ODOT 8/17-7/19	E. Coleri	Implementation of ODOT Tack Coat Technologies and Procedures to Improve Long- Term Pavement Performance	\$185,000	\$185,000
Industry (TBA)	E. Coleri	TBA	\$32,200	\$32,200
ODOT 11/17-8/19	E. Coleri	Development of a Balanced Mix Design Method in Oregon	\$85,000	\$85,000
<i>Totals</i>			\$2,603,535	\$1,153,909

# Service

## University Service

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- Strategic Governance Committee 2015-2016
- CCE Grad Committee, 2016-present

## Service to the Profession

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### Conference and Workshop Organization

- Engineering Mechanics Institute (EMI), American Society of Civil Engineers (ASCE). In EMI 2013, organized and moderated the conference session - "Pavement Materials: Experiments and Modeling".
- Member of the Young Professional Conference Organization Committee on Accelerated Pavement Testing for the APT2012, 4th International Conference on Accelerated Pavement Testing, September, 2012.

### Conference Program Committees

- Member of the Conference Scientific Committee on International Airfield and Highway Pavements Conference, Miami, FL, June, 2015.
- Presiding Officer for the session "Modeling of Asphalt Concrete Mixtures" at the Transportation Research Board Conference, Washington D.C., January 2014.
- Presiding Officer for the session "Relationship between Field Performance and Properties of Asphalt Mixtures" at the Transportation Research Board Conference, Washington D.C., January 2015.

### Reviewing

Reviewed over 95 papers since 2010 for the following journals and conferences:

- ASCE Journal of Transportation Engineering
- ASCE Journal of Materials in Civil Engineering
- ASCE Journal of Engineering Mechanics
- Elsevier - Construction and Building Materials
- ASCE Journal of Computing in Civil Engineering
- International Journal of Pavement Engineering
- IEEE Sensors Journal
- Transportation Research Board - Full Scale/Accelerated Pavement Testing (AFD40) Committee
- Transportation Research Board - Characteristics of Asphalt Paving Mixtures to Meet Structural Requirements (AFK50) Committee
- Journal of ASTM International
- Accelerated Pavement Testing Conferences
- International Society for Asphalt Pavements
- International Journal of Roads and Airports

### Other

#### **Professional Memberships**

- Committee member, AFK50 committee of Transportation Research Board (TRB), Characteristics of Asphalt Paving Mixtures to Meet Structural Requirements (04/2012 - present).

- Committee member, AFD40 committee of Transportation Research Board (TRB), Full-Scale Accelerated Pavement Testing (04/2013 – present).
- Committee member and **Membership Coordinator (since November 2016)**, Engineering Mechanics Institute (EMI), American Society of Civil Engineers (ASCE). Mechanics of Pavements Committee (11/2012 – present).
- Member of International Society for Asphalt Pavements.
- Member of Association of Asphalt Paving Technologists (AAPT).
- Member of Asphalt Pavement Association in Oregon (APAO).