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Pavement and Sustainability Research at Oregon State University

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Increasing cost of paving, decreasing pavement program funding levels, and increasing traffic volumes are expected to have a considerable impact on the road network condition in the near future. In addition, continuous economic growth, consequent reduction in non-renewable energy resources, and the apparent signs of global warming have started to create movement in the industry and governments to address the need to construct transportation infrastructure that is more cost effective, socially beneficial, and does less damage to the environment. 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.

In this presentation, I will focus on the on-going pavement research at Oregon State University and will : 1) present innovative empirical and mechanistic methods that were developed to investigate distress mechanisms of pavement materials and structures; 2) present our research projects that focus on reducing the cracking and rutting of asphalt pavements by modifying the properties of the asphalt mixtures; 3) present research ideas that will encourage the use of more sustainable pavement materials and structures, such as permeable pavements, rubber asphalt, and recycled asphalt pavement (RAP); and 4) discuss possible applications of pavement design strategies that can have a considerable impact on fuel consumption, vehicle maintenance costs, greenhouse gas (GHG) emissions, and life-cycle costs.

The final part of the presentation will focus on graduate research opportunities and positions available at Oregon State University.

Biography:

Erdem Coleri received his Ph.D. degree from the University of California, Davis with specialization in pavement materials and structures. He received his M.S. and B.S. degrees from the Middle East Technical University. He is currently an Assistant Professor at Oregon State University - School of Civil and Construction Engineering. Dr. Coleri joined Oregon State University after working as a Project Scientist at the University of California Pavement Research Center for two years. He has also worked as a Technical Consultant for Sensys Networks, Inc., which is a leading provider of wireless traffic detection and integrated traffic data systems. His research interests are in the areas of sustainable pavement materials and structures, energy efficient pavement design strategies, and infrastructure health monitoring using wireless sensor networks.

Dr. Coleri is currently an assistant professor at Oregon State University and he named the John and Jean Loosley Faculty Fellowship at Oregon State University from 2015 to 2017.