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Committee on Repurposing Plastics Waste in Infrastructure

Information Gathering Session #2

Web-meeting via Zoom

Agenda
April 5, 2022
1pm-4pm Eastern Time

Meeting Purpose

- Gather information on research and applications for repurposing plastic waste in pavements.

OPEN SESSION

1:00 pm **Opening Remarks and Introductions**

- David Dzombak, *Committee Chair*

1:05 pm **Session on Recycled Plastics in Asphalt: International and State DOT Insights**

Each expert will provide a 20-minute presentation. Q&A discussion will follow the presentations.

Ontario Experience with Recycled Polymers in Asphalt Pavement

- Simon Hesp, *Professor of Chemistry, Queen's University, Ontario*

Research and Implementation Approach at California DOT

- Tom Pyle**,** *Chief, Office of Asphalt Pavements, California DOT*

Research Needs and Implementation at Iowa DOT

- Ashley Buss, *Bituminous Engineer, Iowa DOT*

NIST's Circular Economy Program and Collaboration with Hawaii DOT

- Jennifer Lynch, *Research Biologist, National Institute of Standards and Technology; and Co-director at Center for Marine Debris Research, Hawaii Pacific University*

3:30 pm **Adjourn Open Session**

Presenters Biographies

Simon A.M. Hesp, Ph.D.

Dr. Hesp was born in Amsterdam and brought up in Naarden, Holland. After studying Chemical Engineering in Amsterdam, he moved to Canada to study Chemistry at the University of Toronto. An M.Sc. in polymer photochemistry allowed him to continue in the field with a one year visiting research scientist position at the Hitachi Central Research Laboratory in Tokyo, Japan. Upon his return from Tokyo he embarked on a Ph.D. program to develop novel stabilization methods for recycled polymer-modified asphalt cements.

Since 1992 Dr. Hesp has held a tenured faculty position in the Department of Chemistry at Queen's University in Kingston, Canada, with a broad research program on various aspects of asphalt materials science and engineering. His asphalt research has been generously funded with over $10 million of financial and in-kind contributions from various private and government sources. Collaborative research with the Ontario Ministry of Transportation has involved the construction of 27 different straight and polymer-modified asphalt trial sections on remote and busy highways around Ontario. The long-term research program has produced several asphalt specification test methods that are now implemented for acceptance of the asphalt cement around the province.

Thomas Pyle, P.E.

Mr. Pyle is the California Department of Transportation State Pavement Engineer. In this position, he manages all aspects of Asphalt Pavement and Concrete Pavement for Caltrans including design of structural sections, specifications, and pavement preservation. He also oversees data collection of the state highway network as well as programming all pavement preservation and rehabilitation projects. Since joining Caltrans in 1985, Mr. Pyle has held numerous pavement design, construction, maintenance, and materials positions. Since 2000, he has also served as Assistant Division Chief of Construction, and Chief of the Office of Concrete Pavements, Office of Asphalt Pavements, Office of Pavement Management, and Office of Pavement Programming.

Ashley Buss, Ph.D., P.E.

Dr. Ashley Buss is the Bituminous Materials Engineer for the Iowa Department of Transportation. She is a licensed professional engineer in the State of Iowa and has over thirteen years of experience in the area infrastructure materials and pavements research. She received her Ph.D. from Iowa State University in 2014. Prior to joining the Iowa DOT, Dr. Buss served as an Assistant Professor in the Department of Civil, Construction, and Environmental Engineering at Iowa State University from 2015 to May 2021.

Jennifer Lynch, Ph.D.

Dr. Jennifer M. (Keller) Lynch is a research biologist at the National Institute of Standards and Technology (NIST) where she has performed organic analytical chemistry since 2003. Her research is part of NIST's Circular Economy program, which supports the nation's need to transition away from a model in which materials are extracted from the environment, manufactured into products, used, then discarded (a so

called “linear economy”) toward one in which the atoms and molecules that make up those products repeatedly cycle within the economy and retain their value. Since 2019 she is also the Co-Director of the Center for Marine Debris Research (CMDR). The CMDR was established in 2019 in Hawaii, which is one of Earth’s most plastic polluted regions. Dr. Lynch’s current research focuses heavily on quantifying and chemically characterizing plastic marine debris to optimize methods to help answer questions about plastic debris sources, fate, transport, and effects. She has published extensively on the measurement and effects of persistent organic pollutants, including legacy organochlorines, flame retardants, and perfluoroalkyl acids.