



Northeastern

Department of Civil and Environmental Engineering Distinguished Seminar Series

Structural Health Monitoring: Case of the Indian River Inlet Bridge

Harry “Tripp” Shenton, PhD

Professor and Chair

Department of Civil and Environmental Engineering

University of Delaware,

Newark, Delaware, USA

Monday, October 24, 2016 12:00 pm-1:00pm

458 Richards Hall

Abstract

The technology of Structural Health Monitoring (SHM) has advanced to a stage where it is now a practical and economical tool for monitoring the performance of bridges over long periods of time. The information gathered from an SHM system can be used to continually evaluate the condition of the structure, and to make more informed decisions about maintenance and repair operations. Conventional wired, fiber optic, and wireless SHM systems are now being manufactured at a reasonable cost to meet the demands of the harsh thermal and environmental conditions they must operate within. Add to this increased computational power in ever smaller footprints, reduced power demands, and increased storage capacity, and SHM is a viable option today for bridge owners.

Biographical Sketch

Harry “Tripp” Shenton, Ph.D. is Professor and Chairman of the Department of Civil and Environmental Engineering at the University of Delaware, and an affiliated faculty of the University’s Center for Innovative Bridge Engineering. He holds bachelors and master’s degrees from the University of Delaware and a Ph.D. from The Johns Hopkins University. Previously he served as a research engineer at the U.S. Army Ballistics Research Laboratory, and a research structural engineer at NIST. Shenton joined the faculty of the University of Delaware in 1994. Professor Shenton’s area of research expertise is in structural health monitoring, condition assessment, and preservation of civil infrastructure, with particular emphasis on bridges. He has received external funding from NSF, FHWA, NIST, NCHRP, DOE, the Delaware Department of Transportation, and industry. Shenton has lead the effort to develop and implement permanent health monitoring systems on new and existing bridges, and conducted research that has resulted in the development of specialized sensors and sensor systems for in-service monitoring of bridges. His research in bridge preservation has focused on maintenance of small movement bridge joints, and the long term performance of unpainted weathering steel. He is a member of ASCE and ISHMII. He is past-chair of the ASCE Technical Activities Committee on Performance of Structures, a member of the ASCE Technical Activities Division Executive Committee, and is the Academic Director of the TSP2 Northeast Bridge Preservation Partnership.



Harry "Tripp" Shenton, PhD

Professor and Chair, Civil & Environmental Engineering
University of Delaware, USA



Education

- PhD, Civil Engineering, *THE JOHNS HOPKINS UNIVERSITY*
- MCE, Civil Engineering, *UNIVERSITY OF DELAWARE*
- BCE, Civil Engineering, *UNIVERSITY OF DELAWARE*

Research Interests

- **Structural Health Monitoring**
- **Condition Assessment of Civil Infrastructure**
- **Innovative Systems and Materials for Low-rise Construction**
- **Development of Specialized Sensor Systems for In-service Monitoring of Bridges**

Selected Service and Awards

- **Member, American Society of Civil Engineers(ASCE) and ISHMII**
- **Academic Director, TSP2 Northeast Bridge Preservation Partnership.**
- **NSF Career Award: (1999-2003)**
- **U.S. Army Ballistics Research Laboratory, Service Award, 1986**
- **Slocomb Excellence in Teaching Award: 2006**