UTC Project Information Project 1.6	
Project Title	Progressive fault identification and prognosis of railway tracks based on intelligent inference
University	University of Connecticut (UConn), Storrs, CT
Principal Investigator	Jiong Tang, Ph.D.
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Funding Source(s) and Amounts Provided (by each agency or organization)	Fast-Act (Federal-U.S. DOT): $138,720; UConn (1:1 match): $138,720
Total Project Cost	$277,440
Agency ID or Contract Number	69A3551847101
Start and End Dates	October 01, 2018 - June 30, 2022
Brief Description of Research Project	The objectives of this project are to synthesize novel sensors integrated with physics-informed data analytics to monitor the railway track for enhanced reliability and durability. New active sensing mechanisms will be developed, to enable autonomous detection and identification. New physics-informed statistical inference algorithms will be formulated, to realize highly accurate fault diagnosis and prognosis. Direct collaboration with industry partner will be carried out.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	Currently, the research project is in the initial phase and is ongoing. The research outcomes will be implemented as they are developed. The formulation of high-frequency finite element analysis with piezoelectric actuation has been shared with Sperry Rail Service and partially utilized by Sperry to facilitate wave propagation analysis in Sperry probe.
Impacts/Benefits of Implementation (actual, not anticipated)	The research project is in the initial phase and is ongoing. The benefits will be determined towards the end of the research project.
Web Links • Reports • Project website	N/A at this stage.