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Smart Vehicle Concepts Center

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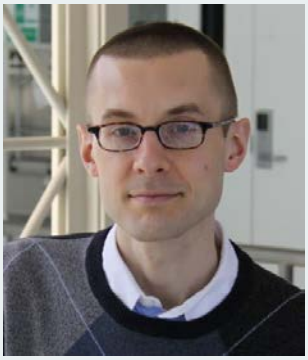
Short Course: Engineering Vibroacoustics



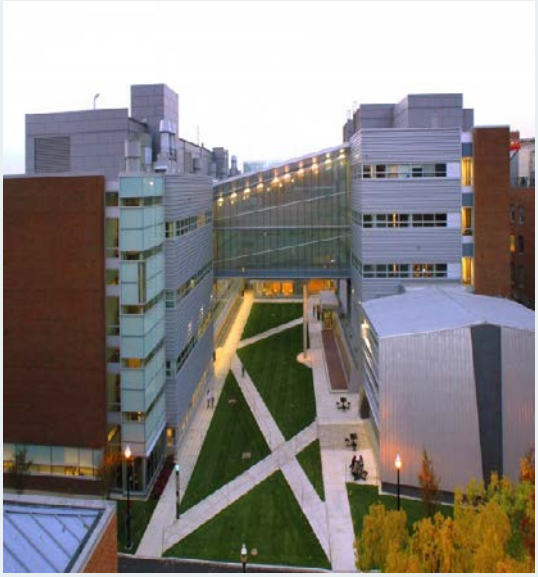
Ryan L. Harne, Assistant Professor
Department of Mechanical and Aerospace Engineering
Director of Laboratory of Sound and Vibration Research

Ryan L. Harne is an assistant professor in the Department of Mechanical and Aerospace Engineering at The Ohio State University where he directs the Laboratory of Sound and Vibration Research. Dr. Harne received the Ph.D. degree in Mechanical Engineering at Virginia Tech in 2012. From 2012 to 2015, Dr. Harne was a Research Fellow at the University of Michigan. His research expertise falls in the areas of vibration, acoustics, mechanics, and nonlinear dynamics. The outcomes of his research efforts have included several patents pending, one book, over 50 journal publications, and over 40 conference proceedings, alongside numerous students mentored and guided through their academic programs. Dr. Harne is active in ASME, ASA, and SPIE, where he serves in several elected and appointed roles. Dr. Harne was awarded a 2017 Air Force Research Lab Summer Faculty Fellowship from the Air Force Office of Scientific Research, the 2017 ASME Best Paper Award in Structures and Structural Dynamics, the 2016 Haythornthwaite Young Investigator Award from ASME, and the 2011 ASA Royster Award. He currently serves as an Associate Editor for The Journal of the Acoustical Society of America, Proceedings of Meetings on Acoustics.

Abstract

This short course provides an introduction to the challenging problems coupling vibrations and sound in the context of noise and vibration control applications. At the conclusion of the course, participants will have a broad understanding of the fundamentals of vibrations and acoustics involved in engineering vibroacoustics applications, will understand the essential fluid-structure coupling mechanisms at play, and will acquire knowledge on effective noise control strategies and modeling approaches available to address challenges in practice. By the broad extensibility of these fundamentals, participants will be able to face vibroacoustics problems in industry and research will a richer understanding of workable solutions. Established analytical methods and computational approaches to model and characterize vibroacoustics contexts will be employed with example cases to guide learning. Experimental demonstrations will further aid to exemplify key concepts.

Thursday, March 1
9:00am – 11:00pm
E100 Scott Laboratory



Hosted by Professor Marcelo Dapino

THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING