

**David W. Herrin**  
**Guest Professor of US Sound & Vibration Institute**



University of Kentucky

Department of Mechanical Engineering

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**A. Professional Preparation**

University of Cincinnati, Cincinnati, OH, Mechanical Engineering, B.S., 1991

University of Cincinnati, Cincinnati, OH, Engineering Mechanics, M.S., 1993

University of Kentucky, Lexington, KY, Mechanical Engineering, Ph.D., 2000.

**B. Appointments**

University of Kentucky

January, 2012 ó Present Associate Professor

July, 2011 ó December, 2011 Associate Research Professor

January, 2004 ó June, 2011 Assistant Research Professor

2000-2003 Post-doctoral scholar

1993-2000 Instructor / Research Assistant / Teaching Assistant

Other Related Experience

Structural Dynamics Research Corporation, Milford, OH

1987-1990

Co-op Engineer in the Software Product Marketing Division

### C. Publications

1. Herrin, D. W., Cui, Z., and Liu, J., "Predicting Insertion Loss of Large Duct Systems above the Plane Wave Cutoff Frequency," *Applied Acoustics*, Vol. 73, pp. 37-42 (2012).
2. Zhou, L., Carter, A. E., Herrin, D. W., Shi, J., and Copley, D. C., "Airborne Path Attenuation of Partial Enclosures: Simulation and Sensitivity Study," *Applied Acoustics*, Vol. 72, pp. 380-386 (2011).
3. Liu, J. and Herrin, D. W., "Enhancing Micro-Perforated Panel Attenuation by Partitioning the Adjoining Cavity," *Applied Acoustics*, Vol. 71, pp. 120-127 (2010).
4. Herrin, D. W., Liu, J., Martinus, F., D. J. Kato, and Cheah, S., "Prediction of Sound Pressure in the Far Field using the Inverse Boundary Element Method," *Noise Control Engineering Journal*, Vol. 58, No.1, pp. 74-82 (2010).
5. Martinus, F., Herrin, D. W., and Han, J., "Identification of an Aeroacoustic Source using the Inverse Boundary Element Method," *Noise Control Engineering Journal*, Vol. 58, No.1, pp. 83-92 (2010).
6. Herrin, D. W., Liu, J., and Sampath, G., "The Applicability of the Moebius Transformation to Mechanical and Acoustic Impedance Modifications," *Journal of Sound and Vibration*, Vol. 328, pp. 382-395 (2009).
7. Martinus, F., Herrin, D. W., and Seybert, A. F., "Selecting Measurement Locations to Minimize Reconstruction Error Using the Inverse Boundary Element Method," *Journal of Computational Acoustics*, Vol. 15, No. 4, (2007).
8. Herrin, D. W., Martinus, F., Wu, T. W., and Seybert, A. F., "An Assessment of the High Frequency Boundary Element and Rayleigh Integral Approximations," *Applied Acoustics*, Vol. 67, pp. 819-833 (2006).
9. Herrin, D. W., Wu, T. W., and Seybert, A. F., "The Energy Source Simulation Method," *Journal of Sound and Vibration*, Vol. 278, pp. 135-153 (2004).
10. Herrin, D. W., Wu, T. W., and Seybert, A. F., "Boundary Element Modeling," Chapter 8, *Handbook of Noise and Vibration Control*, John Wiley, pp. 116-127 (2007).

#### D. Synergistic Activities

1. Director of the Vibro-Acoustics Consortium ó The Consortium consists of 20 companies. The mission of the consortium is to assist in training members in the use of vibro-acoustic software, assess software, and play a role in enhancing the state-of-the-art (2007-Present).
2. PI on American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) grant ó Full - Frequency Numerical Modeling of Sound Transmission in and Radiation from Lined Ducts (2012-Present).
3. PI for sub-award on NSF Small Business Innovation Research grant ó Realizing Broadband Sound Absorption in Micro-Slit Panels (2011)
4. Co-PI on NSF Grant ó Simulation of Diesel Particulate Filters in Exhaust Systems (2009-present).
5. PI on American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) grant ó Validation of a low order acoustic model for boilers and its application to solving combustion driven oscillation problems (2010-present).
6. Co-PI on American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) grant ó Numerical Methods for Low-Frequency HVAC Noise Applications (2004-2006).
7. An Applied Introduction to Vibro-Acoustic Simulation ó Organized and presented short course related to the numerical prediction of acoustics problems (2009, 2011, 2012).

## BIOGRAPHICAL NOTES

Dr. David Herrin is an Associate Professor in Mechanical Engineering at the University of Kentucky. He received both his B.S. and M.S. degrees from the University of Cincinnati and his Ph.D. from University of Kentucky. His research specialization is acoustics and vibrations. He directs the Vibro-Acoustics Consortium, a group of companies interested in the development and use of noise prediction technology, and is the author of over 80 journal and conference papers.

