Ralph T. Muehleisen
Ph.D, P.E., LEED AP BD+C, INCE Board Certified
Principal Building Scientist, Argonne National Laboratory
9700 S. Cass Ave., Bldg. 362, Lemont IL 60439
Email: rmuehleisen@anl.gov, (630) 252-2547

Education

Ph. D. in Acoustics, Graduate Program in Acoustics, The Pennsylvania State University, 1996
B.S., Majors in Electrical and Computer Engineering and Physics, University of Wisconsin, 1989

Work Experience

2011–Present: Principal Building Scientist, Argonne National Laboratory (Argonne)
Principal Building Scientist, Section Leader for the Building Argonne Building Energy Decision and Technology Research (BEDTR) Program, and the Argonne Urban Science and Engineering (USE) Program Lead. Provides oversight of technology- and engineering-related projects and provides quality control to all projects within the Argonne BEDTR Program. Principal investigator for numerous projects, including innovative building materials, sensors and metrology for building energy, uncertainty analysis and model calibration methods, building and engineering acoustics, building energy modeling and coupled building/urban systems modeling. Provides internal coordination and external interfacing to all of Argonne Urban Science and Engineering activities. Leads and manages a portfolio of projects that regualarly ranges from $1M to $2M annually. Provides advice in areas of Building Science, Building/Grid Interaction, and USE to Argonne leadership and program managers at the DOE and acts as the Argonne Lab Lead to the Building Technologies Office at DOE. Provides line management of a team of 10-15 staff scientists, postdocs, and student researchers. Provides program leadership and management including budgeting, day-to-day planning, staffing, program development, partnership development, public outreach, sponsor interaction and strategic planning for BEDTR, USE and the Center for Energy, Environmental, and Economic Systems Analysis (CEEESA) in the Energy Systems Division at Argonne.

2015-Present: Joint Staff Appointment, Computation Institute, University of Chicago
Performs computational research in many areas including modeling of complex urban systems, developing models and tools for smart building / smart grid interaction, and stochastic models of building energy use.

2011–Present: Adjunct Associate Professor, Illinois Institute of Technology
Teaches courses in basic building science, building enclosure design, and architectural acoustics. Advises M.S. and Ph.D. students in Architectural Engineering Civil Engineering, Mechanical Enginering, and Architecture programs.

2010–2011: Clinical Assoc. Professor, 2003–2010: Asst. Professor in the Department of Civil, Architectural, and Environmental Engineering at the Illinois Institute of Technology
Director of the Architectural Engineering Program, 2006–2010, and the Miller Acoustics Laboratory, 2003–2010. Developed and managed a funded research program in building science, architectural acoustics, and physical acoustics. Research projects include wind pressure coefficients for low-rise buildings; natural ventilation; control systems for building thermal energy storage systems; acoustics of green buildings; classroom acoustics; statistical analysis of acoustic isolation; noise and vibration control; acoustic radiosity; acoustic characterization of porous materials, including ceramic, metal, and carbon foams; high-intensity sonic air filter cleaners; and photoacoustic trace gas analysis. Developed and taught classes in building science, building noise and vibration control, building acoustics and illumination, building enclosure design, building systems integration, building electrical systems, and architectural engineering design. As AE program director, grew program from 35 undergraduate + no graduate students to 120+ undergraduate and 30+ graduate students while losing faculty members and working with budget cutbacks every year. Thesis advisor to 1 Ph.D. student, 6 M.S. students, and 40+ MAS students.

2000–Present: President and Principal Consultant for Muehleisen Consulting
Developed educational modules for EnergyPlus energy software for DOE. Provided architectural acoustics Webinar training for the U.S. Green Building Council (USGBC). Provided engineering acoustics short courses for the Air Movement and Control Association International, Inc. (AMCA) and Zebra Technologies. Developed theory and computer models for acoustics of automotive air filters for Greenlees Air Filters. Developed theory, software, and

experiments for the in-situ measurement of acoustic absorption data for Kirkegaard and Associates. Developed acoustic theory, acoustic treatments, and audio/video systems for corporate conference rooms for Johns Manville. Conducted general noise and vibration control consulting for numerous other clients, including universities, building owners and tenants, and music and video production studios.

1998–2003: Asst. Professor, Civil, Environmental, and Architectural Engineering, University of Colorado
Developed a funded research program in architectural acoustics, thermoacoustics, and data sonification with more than $700,000 in sponsored research resulting in more than 20 publications. Developed and taught classes in building noise control, acoustical room design, thermodynamics, fluid mechanics, heat transfer, and electrical circuits. Served as thesis advisor or committee member for 20 graduate students. Served as director of department computing laboratories. Designed and administered a mixed Windows-Unix network of more than 50 workstations. Supervised graduate teaching assistants and teaching fellows for undergraduate and K-12 outreach programs. Academic advisor to more than 100 undergraduate and graduate students.

1996–1998: Postdoctoral Fellow, Department of Physics, Naval Postgraduate School
Developed theory, software, and experiments for annular acoustic resonators, thermoacoustic heat engines and refrigerators, and active control of thermoacoustic systems. Advised and assisted graduate students with theoretical and experimental thermoacoustic research.

1995–1996: Postdoctoral Scholar, Applied Research Laboratory, Pennsylvania State University
Developed theory and software for vehicle acoustic signature classification. Developed analog and digital hardware and software for Internetted Unattended Ground Sensors, including acoustic, seismic, temperature, humidity, heat flux, position, and direction sensors. Developed theory, conducted experiments, and developed analog and digital hardware and software for active noise and vibration control. Designed, managed, and participated in outdoor acoustic propagation, atmospheric measurements, ground impedance measurements, and acoustic signature collection experiments.

Professional Licensure and Certifications

Licensed Professional Engineer in the State of Illinois, 062.060395, November 30, 2007–Present
Institute of Noise Control Engineers (INCE) – Board Certified Noise Control Engineer, 2010–Present
Leadership in Energy and Environmental Design (LEED) Accredited Professional, 2009–Present

Honors and Awards

Elected to Board of Directors of International Building Performance Simulation Association (IBPSA) USA, 2017
Elected to Board of Directors of Midwest Energy Efficiency Alliance (MEEA), 2014
Elected Fellow of the Acoustical Society of America (ASA), 2009
Elected to Board of Directors of INCE, 2009
Elected Vice President of Student Affairs and Education of INCE, 2006
Instructor at ASA/Office of Naval Research (ONR) Physical Acoustics Summer School, 2002
Department Faculty Service Award, University of Colorado, 2000
American Society for Engineering Education (ASEE)/ONR Postdoctoral Fellowship, ASEE/ONR, 1996–1998
Applied Research Lab Postdoctoral Scholar, Penn State Applied Research Lab, 1995–1996
Physical Acoustics Summer School Fellowship, ASA, 1992
Noise Technical Committee Young Presenter Award, ASA, 1992
Dean's Fellow, Pen State University, 1990-1993
Graduated with Distinction, UW-Madison College of Engineering, 1989
Outstanding Tutor Ward, UW-Madison Physics Club, 1988
Dean's Honor List, UW-Madison College of Engineering, 1985-1989

Professional Activities

Journal Editor
2011–Present: Associate Editor for Journal of Architectural Engineering (JAE)
2007–2014: Associate Editor for Proceedings of Meetings on Acoustics (POMA)

Journal Paper Peer-Review
ASHRAE Transactions
American Journal of Physics (AJP)
Acoustic Research Letters Online (ARLO)
Building and Environment (B&E)
Energy and Buildings (E&B)
International Assocaition for Energy Economics (IAEE)
IEEE Transactions on Smart Grid (TSG)
IEEE Transactions on Power Systems (PES)
International Journal of Acoustics and Vibration (IJAV)
Journal of the Acoustical Society of America (JASA)
Journal of the Acoustical Society of America - Electronics Letters (JASA-EL)
Journal of Applied Physics (JAP)
Journal of Architectural Engineering (JAE)
Journal of Building Performance Simulation (JBPS)
Journal of Vibration and Acoustics (JVA)
Journal of Green Building Research (JGBR)
Noise Control Engineering Journal (NCEJ)
Perkins and Will Research Journal
Proceedings of Meetings on Acoustics (POMA)
Science and Technology for the Built Environment (STBE)
Smart and Sustainable Built Environment (SSBE)
Sustainable Cities and Society (SCS)

Proposal Peer Review
DOE ARPA-E
National Science Foundation (NSF) Civil, Mechanical, and Manufacturing Innovation (CMMI) Division
NSF Civil and Mechanical Systems (CMS), Applied Mathematics, and International Programs
United States Civilian Research and Development Fund
King Fahd University

Professional Society Membership
2010–Present: International Building Performance Simulation Association (IBPSA)
2008–Present: American Society of Steel Construction (AISC)
2005–Present: Society of Building Science Educators (SBSE)
2005–2013: U.S. Green Building Council, Chicago Chapter
2004–Present: American Society of Materials and Testing (ASTM)
2003–2011, 2015-Present : American Society of Civil Engineering (ASCE)
2003–2011, 2015-Present: Architectural Engineering Institute (AEI)
1999–Present: American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)
1998–2011: American Society for Engineering Education (ASEE)
1994–Present: Institute of Noise Control Engineers (INCE)
1990–Present: Acoustical Society of America (ASA), Elected Fellow in 2009
1989–2015: Audio Engineering Society (AES)
1988–Present: Institute of Electrical and Electronics Engineers (IEEE)

Professional Society Committee Membership Activities

International Building Performance Simulation Association (IBPSA)

2017-Present: IBPSA-USA Board of Directors
2016-Present: IBPSA-USA Liason to Chicago Chapter fo IBPSA-USA
2015-Present: Co-Chair of the Urban Scale Simulation Research Committee
2013-2016: Vice Chair of Chicago Chapter of IBPSA-USA

ASHRAE

2017–Present: Secretary and Voting Member of TC 4.7
2016–Present: Corresponding Member of TC 7.5, Smart Building Systems
2016–Present: Corresponding Member of TC 2.8, Building Impacts and Sustainability
2014–2017: Chair of TC 4.7 subcommittee on Data Driven Modeling
2012–Present: Member of Technical Committee (TC) 1.9, Electrical Systems
2012–Present: Member of TC 4.7, Energy Calculations
2012–Present: Member of TC 7.6, Building Energy Performance
2008–Present: Member of TC 2.6, Sound and Vibration

ASTM

2011–Present: Voting Member of TC E06 Performance of Buildings
2004–Present: Voting Member of TC E33 Building and Environmental Acoustics

Acoustical Society of America (ASA)

2001–Present: Member of Architectural Acoustics Technical Committee (TCAA)
2005–2014: Chair of TCAA Green Building Acoustics Subcommittee
1997–Present: Member of Noise Technical Committee (TCN)
1998–2014: Member of Physical Acoustics Technical Committee (PATC)
1998–2014: Member of Education in Acoustics Committee
1997–2014: Member of Noise Technical Committee (TCN)
2009–2014: Member of Public Relations Committee
2004–2007: Coordinator of Noise Technical Committee "Young Presenter" award
2000–2006: Maintainer of Physical Acoustics Technical Committee email list
1999–2002: Member of Tutorials Committee

Institute of Noise Control Engineering (INCE)

2010–2014: Board Certification Exam Grader
2010–2014: Member of Board Certification Committee
2009–2011: Vice President of Student Affairs
2009–2010: Member of INCE Board of Directors
2005-2009: Chair of Student Affairs Committee
2007–2010: NOISECON/Internoise Student paper Competition Organizer
2005–2011: Reviewer for Biennial Hirschorn Best Paper Award
2007–2011: Reviewer for Student Paper Competition

U.S. Green Building Council (USGBC)

2008: LEED for Schools instructor acoustics fundamentals and training for USGBC
2007: LEED for Schools evaluator acoustics fundamentals and training for USGBC
2005–2007: Member of Commercial Interiors Core Committee
2006–2007: Acoustical Expert to LEED for Schools Development Committee
2006–2011: Corresponding Member of LEED for Schools Committee
2007–2011: Corresponding Member of Indoor Environmental Quality Technical Advisory Group
2007–2011: Corresponding Member of Energy and Atmosphere Technical Advisory Group
2007–2011: Corresponding Member of LEED Education Committee
2008–2011: Corresponding Member of LEED Healthcare Committee
2008–2011: Corresponding Member of USGBC Research Committee

Publications and Patents

Patents

Muehleisen, Ralph T., and Ganesh Raman. 2016. ACOUSTIC BUILDING INFILTRATION MEASUREMENT SYSTEM. 20160091387, filed September 30, 2014, and application published March 31, 2016.

R. Muehleisen, "Photoacoustic Sensor", US Patent 8,561,454, filed Oct 28, 2010 and issued Oct. 22, 2013.

R.C. Troxell, P. Panikar, R. Muehleisen, R.E. Greenlees, and J.D. Troxell, "Apparatus and Method for Sonic Cleaning of an Air Filter for Wheeled and Tracked Vehicles," US Patent Application 2008/0085018 A1, filed Oct 10, 2006.

Journal Publications

.Liu, Qi, Guoqiang Tan, Peng Wang, Sasitha C. Abeyweera, Dongtang Zhang, Yangchun Rong, Yimin A.Wu, et al. 2017. "Revealing Mechanism Responsible for Structural Reversibility of Single-Crystal VO2 Nanorods upon Lithiation/Delithiation." *Nano Energy* 36 (June): 197–205. https://doi.org/10.1016/j.nanoen.2017.04.023.

Chelliah, Kanthasamy, Ganesh Raman, and Ralph T. Muehleisen. 2017. "An Experimental Comparison of Various Methods of Nearfield Acoustic Holography." *Journal of Sound and Vibration* 403 (September): 21–37. doi:10.1016/j.jsv.2017.05.015.

Liu, Qi, Guoqiang Tan, Peng Wang, Sasitha C. Abeyweera, Dongtang Zhang, Yangchun Rong, Yimin A.Wu, et al. 2017. "Revealing Mechanism Responsible for Structural Reversibility of Single-Crystal VO2 Nanorods upon Lithiation/Delithiation." *Nano Energy* 36 (June):197–205. https://doi.org/10.1016/j.nanoen.2017.04.023.

Chelliah, Kanthasamy, Ganesh G. Raman, and Ralph T. Muehleisen. 2016. "Enhanced Nearfield Acoustic Holography for Larger Distances of Reconstructions Using Fixed Parameter Tikhonov Regularization." *The Journal of the Acoustical Society of America* 140 (1): 114–20. doi:10.1121/1.4954757.

Bergerson, Joshua, Ralph T. Muehleisen, Bo Rodda, Joshua A. Auld, Leah B Guzowski, Jonathan Ozik, and Nicholson Collier. 2015. "Designing Future Cities – LakeSIM Integrated Design Tool For Assessing Short- and Long-Term Impacts of Urban Scale Conceptual Designs." *ISOCARP Review* 11: 48–63.

Bergerson, Joshua, and Ralph Muehleisen. 2015. "Bayesian Large Model Calibration Using Simulation and Measured Data for Improved Predictions." *SAE International Journal of Passenger Cars - Mechanical Systems* 8 (2415–420). doi:10.4271/2015-01-0481.

Heo, Y., Augenbroe, G., Graziano, D., Muehleisen, R.T., Guzowski, L. (2015). Scalable methodology for large scale building energy improvement: relevance of calibration in model-based retrofit analysis. Accepted for publication in *Building and Environment*. http://dx.doi.org/10.1016/j.buildenv.2014.12.016

Heo, Yeonsook, Diane J. Graziano, Leah Guzowski, and Ralph T. Muehleisen. 2014. "Evaluation of Calibration Efficacy under Different Levels of Uncertainty." *Journal of Building Performance Simulation* 8: 135–44. doi:10.1080/19401493.2014.896947.

Muehleisen, Ralph T, and Silverio Patrizi. 2013. "A New Parametric Equation for the Wind Pressure Coefficient for Low-Rise Buildings." *Energy and Buildings* 57 (February): 245–49. doi:10.1016/j.enbuild.2012.10.051.

Muehleisen, Ralph T, and C Walter Beamer IV. 2009. "Steady State Acoustic Radiosity for the Prediction of Sound Pressure Levels in Enclosures with Diffuse Surfaces." *Noise Control Engineering Journal* 57 (3): 244–62. doi:10.3397/1.3140396.

Muehleisen, Ralph T. 2008. "A Description of the Acoustic Requirements in LEED for Schools and a Comparison to the ANSI S12 . 60 Classroom Acoustics Standard." *Noise Control Engineering Journal* 56 (August): 365–73. doi:10.3397/1.2976331.

Muehleisen, Ralph T, C Walter Beamer IV, and Brandon D Tinianov. 2005. "Measurements and Empirical Model of the Acoustic Properties of Reticulated Vitreous Carbon." *Journal of the Acoustical Society of America* 117 (2): 536–44. doi:10.1121/1.1850343.

Muehleisen, Ralph T. 2002. "Effects of Common Indoor Air Pollutants on the Speed of Sound." *Acoustics Research Letters Online* 3 (4): 118–23.

Muehleisen, Ralph T, and C Walter Beamer IV. 2002. "Comparison of Errors in the Three- and Four-Microphone Methods Used in the Measurement of the Acoustic Properties of Porous Materials." *Acoustics Research Letters Online* 3 (4): 112–17.

Muehleisen, Ralph T, and David C Swanson. 2002. "Modal Coupling in Acoustic Waveguides: Planar Discontinuities." *Applied Acoustics* 63 (12): 1375–92. doi:10.1016/S0003-682X(02)00016-6.

Muehleisen, Ralph T, and Anthony A Atchley. 2001. “Fundamental Modes of a Constricted Annular Resonator: Theory and Measurement.” *Journal of the Acoustical Society of America* 109 (2): 480–87. doi:10.1121/1.1337958.

Conference Proceedings

Muehleisen, Ralph T., and Joshua Bergerson. 2017. "Coupling a Reduced Order Building Energy Model to UrbanSim." In *Building Simulation 2017*. IBPSA.

Li, Qi, Godfried Augenbroe, and Ralph Muehleisen. 2017. "A Framework for Empirical Validation of Building Performance Simulation under Uncertainty." In *Building Simulation 2017*.

Muehleisen, Ralph T., Duane Verner, Kibaek Kim, and Frederic Petit. 2017. "A New Framework for Identifying and Prioritizing Failure Points in Critical Urban Infrastructure." In *CIP Report*. Presented at the Frontiers in Resiliency Symposium.

Bergerson, Joshua, Ralph T. Muehleisen, Eric Tatara, Diane Graziano, and Nicholson Collier. 2016. "Agent Based Modeling For Smarter Building Energy Simulation And Energy Efficiency Technology Evaluation." In *SimBuild 2016*.

Chelliah, Kanthasamy, Ganesh Raman, and Ralph Muehleisen. 2016. "On the Factors Affecting the Performance of the Generalized Cross Validation Method in the Context of Nearfield Acoustic Holography." In *54th AIAA Aerospace Sciences Meeting*.

Levin, Todd, and Ralph Muehleisen. 2016. "Saving Water Through Behavior Changing Technologies." In *ACEEE Summer Study on Energy Efficiency in Buildings 2016*.

Muehleisen, Ralph T., and Joshua Bergerson. 2016. "Bayesian Calibration - What, Why, and How." In *4th High Performance Buildings Conference*.

Muehleisen, Ralph T., Joshua Bergerson, Nicholson Collier, Diane J. Graziano, and Eric Tatara. 2016. "Agent Based Technology Adoption Model for Program Planning and Design." In *ACEEE Summer Study on Energy Efficiency in Buildings 2016*.

Muehleisen, Ralph T. 2016. "Bayesian Calibration: Calibrating Energy Models While Considering Uncertainty." In *SimBuild 2016*.

Chelliah, Kanthasamy, Ganesh Raman, and Ralph T. Muehleisen. 2015. "Effects of Hologram Distance and Regularization Techniques on Various Methods of Nearfield Acoustic Holography Applied to Building Leakage Detection/Quantification." In *21st AIAA/CEAS Aeroacoustics Conference*.

Chelliah, Kanthasamy, Ganesh Raman, and Ralph T. Muehleisen. 2014. "Leakage Detection Techniques Using Nearfield Acoustic Holography." In *Proceedings of 4th Joint US-European Fluids Engineering Summer Meeting & 12th International Conference on Nanochannels, Microchannels, and Minichannels*.

Chelliah, Kanthasamy, Ganesh Raman, and Ralph T. Muehleisen. 2014. "Advanced Aeroacoustic Testing Techniques Using Various Methods of Acoustic Holography." In *20th AIAA/CEAS Aeroacoustics Conference*, 3071:2014.

Muehleisen, Ralph, Brian Craig, Daniel Macumber, Elaine Hale, and Jason Turner. 2014. "Integration of the CEN/ISO Monthly Building Energy Model into OpenStudio." In *ACEEE Summer Study on Energy Efficiency in Buildings*, 247–59.

Raman, Ganesh, Kanthasamy Chelliah, Manisha Prakash, and Ralph T. Muehleisen. 2014. "Detection and Quantification of Building Air Infiltration Using Remote Acoustic Methods." In *INTER-NOISE 2014*, 249:3976–3985

Riddle, Matthew, and Ralph T. Muehleisen. 2014. "A Guide to Bayesian Calibration of Building Energy Models." In *ASHRAE/IBPSA-USA Building Simulation Conference 2014*, 276–83.

Heo, Yeonsook, Diane Graziano, Leah Guzowski, and Ralph T Muehleisen. 2013. "Evaluation of Calibration Efficacy under Different Levels of Uncertainty." In *Building Simulation 2013*, 1690–97. IBPSA.

Muehleisen, Ralph T, Yeonsook Heo, Diane J Graziano, and Leah B Guzowski. 2013. "Stochastic Energy Simulation for Risk Analysis of Energy Retrofits." In *Proceedings of the 2013 Architectural Engineering National Conference*, 2013:902–11.

Guzowski LB, Graziano DJ, Heo Y, Muehleisen RT. Testing a Streamlined Project Evaluation Tool for Risk-Conscious Decision Making: The Chicago Loop Energy Efficiency Retrofit Initiative. In: *2012 ACEEE Summer Study on Energy Efficiency in Buildings*. ACEEE; 2012:139–151.

Heo Y, Zhao F, Lee SH, et al. Scalable Methodology for Energy Efficiency Retrofit Decision Analysis. In: *SimBuild 2012*. IBPSA-USA; 2012.

Muehleisen RT. Simple Design Tools for Earth-Air Heat Exchangers. In: *SimBuild 2012*. IBPSA-USA; 2012.

Pekdemir EA, Muehleisen RT, Pekdimir EA. A Parametric Study of the Thermal Performance of Double Skin Facades at Different Climates Using Annual Energy Simulation. In: *SimBuild 2012*. IBPSA-USA; 2012.

Muehleisen RT. Analysis of a pressure equalized rainscreen wall as a coupled array of helmholtz resonators. In: *Proceedings of Meetings on Acoustics*.Vol 11. Cancun, Mexico: ASA; 2012:45002–45010.

Guzowski, Leah B, Diane J Graziano, Yeonsook Heo, and Ralph T Muehleisen. 2012. “Testing a Streamlined Project Evaluation Tool for Risk-Conscious Decision Making: The Chicago Loop Energy Efficiency Retrofit Initiative.” In *2012 ACEEE Summer Study on Energy Efficiency in Buildings*, 139–51.

Heo, Yeonsook, Fei Zhao, Sang Hoon Lee, Jinsol Kim, Godfried A Augenbroe, Diane Graziano, Leah B Guzowski, and Ralph T Muehleisen. 2012. “Scalable Methodology for Energy Efficiency Retrofit Decision Analysis.” In *SimBuild 2012*.

Muehleisen, Ralph T. 2012. “Simple Design Tools for Earth-Air Heat Exchangers.” In *SimBuild 2012*.

Muehleisen, Ralph T. 2012. “Analysis of a Pressure Equalized Rainscreen Wall as a Coupled Array of Helmholtz Resonators.” In *Proceedings of Meetings on Acoustics*, 11:45002–10.

Pekdemir, Emir Aykut, and Ralph T Muehleisen. 2012. “A Parametric Study of the Thermal Performance of Double Skin Facades at Different Climates Using Annual Energy Simulation.” In *SimBuild 2012*.

Muehleisen, Ralph T. 2011. “Why We Have Two Ears - Take Two: A Revised Experiment on Sound Localization.” In *Proceedings of Meetings on Acoustics*, 8:25002–11. ASA.

Attenborough, Keith, J Stuart Bolton, Patricia Davies, Courtney B Burroughs, Stephen A Hambric, George Maling, and Ralph T Muehleisen. 2010. “Publication of Your Paper on Noise.” In *Internoise 2010*, 221:3048–54.

Muehleisen, Ralph T. 2010. “Acoustics as an Integral Factor in an Indoor Green Environment.” In *3rd CAETS Forum on Worldwide Noise Sources*.

Muehleisen, Ralph T. 2009. “Analysis of Uncertainty in Building Acoustic Predictions Using Monte-Carlo Methods.” In *Proceedings of Meetings on Acoustics*, 4:15004–10.

Muehleisen, Ralph T. 2009. “Why We Have Two Ears - A Hands-on Experiment Comparing Monaural and Binaural Hearing.” In *Proceedings of Meetings on Acoustics*, 6:25001–9.

Muehleisen, Ralph T. 2009. “Noise Problems and Opportunities in ‘Green’ Buildings.” In *2nd CAETS Forum on Worldwide Noise Sources*.

Muehleisen, Ralph T. 2009. “Review of the Implementation and Recent Changes of Several Acoustic Criteria Used in United States Schools.” In *Internoise 2009*.

Muehleisen, Ralph T. 2008. “Sound Recordings from the 2007 Emergence of Brood XIII Cicada.” In *Proceedings of Meetings on Acoustics*, 2:10001–7.

Muehleisen, Ralph T. 2008. “Six Surface Steady State Acoustic Radiosity.” In *AEI 2008*, 328:55–65. ASCE.

Muehleisen, Ralph T. 2008. “Simplified Radiosity for Predicting Sound Levels in Rectangular Enclosures.” In *Proceedings of Noise-Con 2008* 117:973–81.

Muehleisen, Ralph T. 2007. “A Comparison of the Acoustic Requirements in LEED for Schools and ANSI S12.60.” In *Proceedings of Noise-Con 2007*, 116:195–204.

Muehleisen, Ralph T, and C Walter Beamer IV. 2006. “Steady-State Diffuse Acoustic Radiosity for Sound Level Prediction in Rooms.” In *AEI 2006*, 21–28.

Muehleisen, Ralph T, and C Walter Beamer IV. 2005. “Application of Acoustic Radiosity Methods to Noise Propagation within Buildings.” In *Noise-Con 2005*, 114:1301–7.

Muehleisen, Ralph T. 2005. “Use of the Monte Carlo Method for Uncertainty Analysis of Acoustic Models and Measurements.” In *Noise-Con 2005*, 114:1295–1300.

Muehleisen, Ralph T, C Walter Beamer IV, Brandon D Tinianov, and Dana S Hougland. 2003. “Acoustic and Illumination Design of Conference Rooms.” In *AEI 2003*, 1–5.

Muehleisen, Ralph T, and C Walter Beamer IV. 2001. “Measurement of Thermo-Viscous Functions of RVC and Wire Mesh Stacks.” In *1st Workshop on Thermoacoustics*.

Atchley, Anthony A, Brent Carter, Ralph T Muehleisen, and H T Lin. 2000. “Annular Thermoacoustic Engines.” In *Nonlinear Acoustics at the Turn of the Century: ISNA 15*, 227–30.

Muehleisen, Ralph T, and Anthony A Atchley. 1998. “Simple Model for Temperature Gradient Formation in a Short Stack.” In *Proceedings of the 16th International Congress on Acoustics*, 103:807–9.

Muehleisen, Ralph T, and Anthony A Atchley. 1998. “Lumped Impedance of a Planar Discontinuity in an Acoustic Waveguide.” In *Proceedings of the 16th International Congress on Acoustics*, 2831–32.

Muehleisen, Ralph T, Anthony A Atchley, David D Hebert, and Arthur R Salindong. 1997. “Measurements and Empirical Model of Temperature Evolution in a Short Stack.” In *AiCHE Symp. Series 314. Vol 93*, 265–70.

Muehleisen, Ralph T, and Anthony A Atchley. 1997. “Development of an Active Load Impedance.” In *Noise-Con 9797*, 81–93.

Technical Reports

Milostan, C., T. Levin, R. Muehleisen, and L. Guzowski. 2017. "Commercial Midstream Energy Efficiency Incentive Programs." ANL/ESD-17/24. Argonne National Laboratory.

Levin, Todd, Robert M. Horner, and Ralph T. Muehleisen. 2016. "Research and Development Opportunities for Technologies to Influence Water Consumption Behavior." *ANL/ESD-16/17*. Argonne National Laboratory.

Heo, Y., Graziano, D. J., Guzowski, L. B., & Muehleisen, R. T. 2014. Evaluation of the Efficacy of Bayesian Calibration. In *ANL Report: ANL/DIS-14/1*. Argonne National Laboratory.

Guzowski, L. B., Muehleisen, R. T., Heo, Y., & Graziano, D. J. 2014. Comparative Analysis for the Chicago Energy Retrofit Project: Project Report. In *ANL Report: ANL/DIS-14/2*. Argonne National Laboratory.

Heo Y, Muehleisen RT, Guzowski LB. 2013. Selection of Parameter Subset for Bayesian Calibration. Project report for DOE Building Technologies Office.

Heo Y, Muehleisen RT, Graziano DJ, Guzowski LB. 2013. Quantification of Uncertainty in Building Energy Simulation Models. Project Report for DOE Building Technologies Office.

Heo Y, Graziano DJ, Guzowski LB, Muehleisen RT. 2012 Evaluation of the Efficacy of Bayesian Calibration. Project Report for DOE Building Technologies Office.

Muehleisen RT, Heo Y, Graziano DJ, Guzowski LB. 2012. Sensitivity Analysis of Normative Energy Model for High-Rise Buildings in Chicago. Project Report for DOE Building Technologies Office,

Trade Magazine Articles and Book Reviews

Muehleisen, Ralph T. 2010. "Acoustics of Green Buildings." *InformeDesign* 8 (1): 1–7.

Muehleisen, Ralph T. 2007. "Architectural Acoustics by Marshall Long." *Noise Control Engineering Journal* 55 (4): 427–30.

Keynote, Plenary, and Special Invited Presentations

Muehleisen, Ralph T. 2017. "Argonne Urban Science and Engineering: Combining Sensor Technologies and Edge Computing to Enable Smart Cities." presented at the DTU High Tech Summit 2017, September 20.

Muehleisen, Ralph T. 2017. "Urban Science and Engineering: Big Data + Big Computing = Big Solutions to Big Problems." Keynote presented at the Texas Energy Conference, September 25.

Muehleisen, Ralph T. 2017. "SMART BUILDINGS & GRID MODERNIZATION OF CITIES: Smart Buildings +Smart Grid = Smart Cities." presented at the Chicago Advanced Energy Stakeholders June Meeting, June 8.

Muehleisen, Ralph T. 2017. "Critical Infrastructure & Microgrids: Where We Are and Where We Are Headed." Chicago Advanced Energy Stakeholders March meeting, March 2.

Muehleisen, Ralph T. 2016. "SonicLQ and DOE Lab-Corps." presented at the DOE Lab Impact Summit, Golden, CO, May 3.

Muehleisen, Ralph T. 2016. "eeHarmony: Intelligent Efficiency Is Closer Than You Think." Invited Seminar presented at the Midwest Energy Solutions Conference 2016.

Muehleisen, Ralph T. 2015. "Semi-Automated, Low Touch, and Virtual – Emerging Trends Shaping the Future of Energy Audits." presented at the ASHRAE IL 2015 Meeting.

Muehleisen, Ralph T. 2015. "The Brave New World of Energy Efficiency." presented at the MEEA Midwest Energy Solutions Conference.

Muehleisen RT. Acoustics of green buildings. Tutorial Lecture of the 162nd Meeting of the ASA. *The Journal of the Acoustical Society of America*. 2011;130(4).

Muehleisen RT. Acoustics as an integral factor in an indoor Green environment. In: *CAETS 3rd Forum on Worldwide Noise Sources*. Lisbon, Portugal; 2010.

Muehleisen RT. Noise Problems and Opportunities in "Green" Buildings. In: *2nd CAETS Forum on Worldwide Noise Sources*. Ottawa, CA: Council of the Academies of Engineering and Technical Sciences; 2009.

Muehleisen RT. Plenary Talk: Measurement of the Acoustic Properties of Acoustic Absorbers. In: *NOISECON 2007*. Reno, NV; 2007.

Muehleisen RT. Summer Lecturer at the Physical Acoustics Summer School, "Acoustical Signal Processing", Physical Acoustics Summer School, Asliomar CA, 2002.

Invited Conference Presentations and Published Conference Abstracts

Chelliah, Kanthasamy, and Ralph T. Muehleisen. 2017. "Building Air-Infiltration Quantification Based on Sound Transmission Loss Calculated Using Nearfield Acoustic Holography (A)." *The Journal of the Acoustical Society of America* 142 (4): 2729–2729.

Chelliah, Kanthasamy, and Ralph T. Muehleisen. 2017. “Measurement Extension Limits of Patch Nearfield Acoustic Holography (A).” *The Journal of the Acoustical Society of America* 141 (5): 3984–3984.
Muehleisen, Ralph T. 2017. “Bayesian Calibration-Model Calibration Under Uncertainty.” presented at the MAST 2017 Dealing With Uncertainty Conference.
Muehleisen, Ralph T. 2017. “Agent Based Modeling to Estimate the Adoption of Energy Efficient Building Technologies.” presented at the 2017 ASHRAE Annual Meeting.
Yan, Xiaojie, Sam Dunn, Yungang Sun, Ralph Muehleisen, Leah Guzowski, and Jie Li. 2017. “A Novel Hydrothermal Process for Continuous Manufacturing of Thermochromic VO2 Nanomaterials.” In 2017 AiChe Midwest Regional Conference.
Muehleisen, Ralph T. 2017. “Urban Energy.” presented at the ASHRAE Winter Conference.
Muehleisen, Ralph T. 2016. “How to Do Energy Model Uncertainty Analysis with Correlated Input Variables.” presented at the ASHRAE 2016 Annual Meeting.
Muehleisen, Ralph T. 2016. “How to Do Energy Model Uncertainty Analysis with Correlated Input Variables.” presented at the ASHRAE 2016 Annual Meeting.
Muehleisen, Ralph T. 2016. “Simulation Calibration Methods: Which Should I Choose?” presented at the ASHRAE 2016 Winter Meeting.
Muehleisen, Ralph T., Kasanthamy Chelliah, Hirenkumar Patel, and Ganesh Raman. 2016. “Modifying Nearfield Acoustic Holography for Use in Building Leak Detection (A).” *The Journal of the Acoustical Society of America* 139 (4): 2109–2109.
Bergerson, Joshua, and Muehleisen, Ralph T. 2015. “Marketplace Exploration and Market Potential Evaluation of Energy Efficient Technologies Using Agent Based Modeling.” Invited Presentation presented at the 2015 ASHRAE Energy Modeling Conference, October.
Chelliah, Kanthasamy, Ganesh G. Raman, Ralph T. Muehleisen, Hirenkumar Patel, and Eric Tatara. 2015. “Building Leakage Detection and Quantification Using Statistically Optimized Nearfield Acoustic Holography Technique (A).” *The Journal of the Acoustical Society of America* 137 (4): 2325–2325.
Muehleisen, Ralph T. 2015. “Publish or Perish and Funding or failure—The Dark Side of a Career in Academia (A).” *The Journal of the Acoustical Society of America* 137 (4): 2316–2316.
Muehleisen, Ralph T. 2015. “Review and Recent Advancements in Thermoacoustic Refrigeration.” presented at the ASHRAE 2015 Winter Conference.
Muehleisen, Ralph T. 2015. “Risk Analysis of Building Energy Retrofits.” presented at the 2015 Chicago Actuarial Association.
Muehleisen, Ralph T. 2015. “Understanding the Concepts of Uncertainty, Reproducibility, and Repeatability and the Application to Acoustic Testing (A).” *The Journal of the Acoustical Society of America* 137 (4): 2215–2215.
Muehleisen, Ralph T. 2015. “Synergies Between High Performance Buildings and Good Acoustics.” presented at the ASHRAE 2015 Annual Conference, July.
Muehleisen, Ralph T. 2015. “Synergies between High Performance Buildings and Good Acoustics (A).” *The Journal of the Acoustical Society of America* 138 (3): 1738–1738. doi:10.1121/1.4933476.
Muehleisen, Ralph T. 2015. “Façade Research within the Department of Energy: Goals for 2020 and Beyond.” presented at the Facades Plus, November 5.
Patel, Hirenkumar J., Kanthasamy Chelliah, Ganesh Raman, Ralph T. Muehleisen, and Eric Tatara. 2015. “Detecting Building Leakages Using Nearfield Acoustic Holography Technique: A Numerical Simulation (A).” *The Journal of the Acoustical Society of America* 137 (4): 2233–2233.
Sun, Yuming, and Ralph Muehleisen. 2015. “Bayesian Calibration of Building Energy Models.” presented at the ASHRAE 2015 Winter Meeting.
Muehleisen, Ralph T. 2014. “Review of the Role of Uncertainties in Room Acoustics (A).” *The Journal of the Acoustical Society of America* 135 (4): 2203–2203. doi:10.1121/1.4877188.
Muehleisen, Ralph T., and Michael Stopka. 2014. “Using New Construction to Inspire Energy Retrofits, Comparing Two Projects at Loyola University.” presented at the AIA 2014 Convention, June 28.
Muehleisen, Ralph T., Eric Tatara, and Brett Bethke. 2014. “Relationship between Air Infiltration and Acoustic Leakage of Building Enclosures (A).” *The Journal of the Acoustical Society of America* 135 (4): 2379–2379.
Muehleisen, Ralph T., Eric Tatara, Ganesh Raman, and Kanthasamy Chelliah. 2014. “Acoustic Building Infiltration Measurement System (A).” *The Journal of the Acoustical Society of America* 136 (4): 2172–2172.
Muehleisen, Ralph T. 2011a. “Overview of Current Research Activities in Architectural Acoustics (A).” *Journal of the Acoustical Society of America* 129 (4): 2407–2407.

Muehleisen, Ralph T. 2011b. “Teaching Room Modes and Diffraction Using COMSOL MULTIPHYSICS (A).” *Journal of the Acoustical Society of America* 129 (4): 2646–2646.
Muehleisen, Ralph T, and Andrew C Morrison. 2011. “Low Cost Sound Level Meters for Education and Outreach (A).” *Journal of the Acoustical Society of America* 130 (4): 2362–2362.
Piacsek, Andrew A, and Ralph T Muehleisen. 2011. “Using COMSOL Multiphysics Software to Investigate Advanced Acoustic Problems (A).” *Journal of the Acoustical Society of America* 130 (4): 2363–2363.
Muehleisen, Ralph T. 2010. “A Review of the New Leadership in Energy and Environmental Design v3 Green Building Rating System (A).” *Journal of the Acoustical Society of America* 127 (3): 1721–1721.
Muehleisen, Ralph T. 2009. “Applying the Guide to Uncertainty in Measurements (GUM) to Building Systems Engineering.” presented at the ASHRAE Winter Meeting.
Muehleisen, Ralph T. 2009. “Why We Have Two Ears-Take Two: A Revised Experiment on Sound Localization (A).” *Journal of the Acoustical Society of America* 126 (4): 2177–2177.
Jados, Benjamin, and Ralph T Muehleisen. 2008. “New Equipment for the Measurements of Flow Resistivity and Porosity of Open Cell Ceramic and Metal Foams (A).” *Journal of the Acoustical Society of America* 123 (5): 3034–3034.
Muehleisen, Ralph T. 2008. “Acoustics Modules Developed in the IIT Research Experience for Teachers Program (A).” *Journal of the Acoustical Society of America* 123 (5): 3519–3519.
Muehleisen, Ralph T. 2008. “Analysis of Uncertainty in Building Acoustic Predictions Using Monte-Carlo Methods (A).” *Journal of the Acoustical Society of America* 123 (5): 3504–3504.
Muehleisen, Ralph T. 2008. “Why Has It Been so Difficult to Add Acoustics to the Criteria of the Leadership in Energy and Environmental Design Green Building Rating System? (A).” *Journal of the Acoustical Society of America* 124 (4): 2545–2545.
Karimabad, Arash Soleimani, and Ralph T Muehleisen. 2007. “Computer Simulations of a Maximum Length Sequence Modulated Photoacoustic Spectrometer (A).” *Journal of the Acoustical Society of America* 122 (5): 2966–2966.
Muehleisen, Ralph T. 2007. “Sound Recordings from the 2007 Emergence of Brood XIII Cicada (A).” *Journal of the Acoustical Society of America* 122 (5): 2947–2947.
Muehleisen, Ralph T, and Arash Soleimani Karimabad. 2007. “Application of Maximum Length Sequences to Photoacoustic Chemical Analysis (A).” *Journal of the Acoustical Society of America* 121 (5): 3086–3086.
Muehleisen, Ralph T. 2006. “Acoustics Curriculum for Architectural Engineers (A).” *Journal of the Acoustical Society of America* 119 (5): 3263–3263.
Muehleisen, Ralph T. 2006. “An Acoustics Education Outreach Program for Young Children (A).” *Journal of the Acoustical Society of America* 120 (5): 3117–3117.
Muehleisen, Ralph T. 2006. “Animations, Auralizations, and Visualizations in Architectural Acoustics (A).” *Journal of the Acoustical Society of America* 120 (5): 3073–3073.
Beamer IV, C Walter, and Ralph T Muehleisen. 2005. “A Comparison of Partially Specular Radiosity and Ray Tracing for Room Acoustics Modeling (A).” *Journal of the Acoustical Society of America* 117 (4): 2499–2499.
Muehleisen, Ralph T, C Walter Beamer IV, and Brandon D Tinianov. 2005. “Measurement of the Acoustic Properties of Reticulated Vitreous Carbon (A).” *Journal of the Acoustical Society of America* 117 (4): 2554–2554.
Muehleisen, Ralph T, and C Walter Beamer IV. 2004. “A Comparison of Computational Models for Predicting Speech Intelligibility and Speech Privacy (A).” *Journal of the Acoustical Society of America* 116 (4): 2638–2638.
Beamer IV, C Walter, and Ralph T Muehleisen. 2003. “Radiant Exchange in Partially Specular Architectural Environments (A).” *Journal of the Acoustical Society of America* 114 (4): 2411–2411.
Muehleisen, Ralph T. 2003. “Teaching Noise Control to Architectural Engineers (A).” *Journal of the Acoustical Society of America* 113 (5): 2303–2303.
Beamer IV, C Walter, and Ralph T Muehleisen. 2002. “A Comparison of Radiosity with Current Methods of Sound Level Prediction in Commercial Spaces (A).” *Journal of the Acoustical Society of America* 112 (5): 2437–2437.
Muehleisen, Ralph T. 2002. “Animations and Auralizations for Noise Control Education (A).” *Journal of the Acoustical Society of America* 112 (5): 2344–2344.
Muehleisen, Ralph T, and C Walter Beamer IV. 2002. “Acoustic Radiosity for the Computation of Sound Fields in Diffuse Environments (A).” *Journal of the Acoustical Society of America* 111 (5): 2331–2331.
Muehleisen, Ralph T. 2001. “Acoustic Resonators as Air Quality Sensors (A).” *Journal of the Acoustical Society of America* 110 (5): 2628–2628.

Muehleisen, Ralph T. 2001. “Computer Simulation and Virtual Experiments for Architectural Acoustics Education (A).” *Journal of the Acoustical Society of America* 110 (5): 2697–2697.
Muehleisen, Ralph T., and C. Walter Beamer. 2001. “Thermoviscous Functions of Wire Mesh and RVC Stacks.” *The Journal of the Acoustical Society of America* 109 (5): 2404–2404.
Beamer IV, C Walter, and Ralph T Muehleisen. 2000. “Comparison of Techniques for Measuring the Acoustic Properties of Porous Materials (A).” *Journal of the Acoustical Society of America* 108 (5): 2519–20.
Muehleisen, Ralph T. 2000. “Noise Control in Buildings---A Noise-Control Class for Architectural Engineers (A).” *Journal of the Acoustical Society of America* 108 (5): 2589–2589.
Muehleisen, Ralph T, and C Walter Beamer IV. 2000. “Thermoviscous Functions of Wire Mesh and RVC Stacks (A).” *Journal of the Acoustical Society of America* 108 (5): 2555–2555.
Underwood, Tamra S, Bryan S Morley, Benjamin L Kuritz, and Ralph T Muehleisen. 2000. “Redesign of a Small Thermoacoustic Refrigerator (A).” *Journal of the Acoustical Society of America* 108 (5): 2554–2554.
Underwood, Tamra, Dana S Smith, and Ralph T Muehleisen. 1999. “Design and Construction of a Small Thermoacoustic Refrigerator (A).” *Journal of the Acoustical Society of America* 106 (4): 2264–2264.
Muehleisen, Ralph T.. 1999. “Development of an Acoustics Curriculum in an Architectural Engineering Department (A).” *Journal of the Acoustical Society of America* 106 (4): 2169–2169.
Muehleisen, Ralph T. 1998. “Software for Thermoacoustic Modeling.” *Journal of the Acoustical Society of America* 104 (3): 1772–1772.
Lin, H T, Ralph T Muehleisen, and Anthony A Atchley. 1997a. “Investigation of an Annular Thermoacoustic Prime Mover (A).” *Journal of the Acoustical Society of America* 101 (5): 3021–3021.
Lin, H T, Ralph T Muehleisen, and Anthony A Atchley. 1997b. “Numerical Investigation of a Two Stack Annular Prime Mover (A).” *Journal of the Acoustical Society of America* 102 (5): 3071–3071.
Lin, Hsaio-Tseng, Yun Choe, Ralph T Muehleisen, and Anthony A Atchley. 1997. “Resonant Modes of a Constricted Annular Resonator (A).” *Journal of the Acoustical Society of America* 101 (5): 3021–3021.
Muehleisen, Ralph T, H T Lin, and Anthony A Atchley. 1997. “Control System Analysis of an Annular Prime Mover (A).” *Journal of the Acoustical Society of America* 101 (5): 3021–3021.
Muehleisen, Ralph T.. 1996. “Higher-Order Modal Reflection and Transmission in Acoustic Waveguide Junctions. (A).” *Journal of the Acoustical Society of America* 99 (4): 2556–2556.
Muehleisen, Ralph T.. 1996. “Higher-Order Modal Reflection and Transmission in Acoustic Waveguide Step Discontinuities. (A).” *Journal of the Acoustical Society of America* 99 (4): 2555–2555.
Muehleisen, Ralph T.. 1996. “Reflection, Radiation and Coupling of Higher Order Modes in Finite Length Rigid Walled Rectangular Ducts.” *Journal of the Acoustical Society of America* 100 (6): 3990–3990.
Muehleisen, Ralph T. 1995. “Reflection of Higher Order Modes at the End of a Baffled Rectangular Duct.” *Journal of the Acoustical Society of America* 97 (5): 3255–3255.
Muehleisen, Ralph T, and David C Swanson. 1994. “Plane Wave Radiation Impedance for a Source Mounted in the Side of an Infinite Duct with Mean Flow.” *Journal of the Acoustical Society of America* 97 (5): 2836–2836.
Muehleisen, Ralph T, and David C Swanson. 1992. “An Impedance Model for Actively Controlled Finite Waveguides.” *Journal of the Acoustical Society of America* 91 (4): 2349–2349.

Invited Seminars and Colloquia

Muehleisen, Ralph T. 2017. “Urban Science and Engineering (USE) Toward Low Emissions, Low Energy, Resilient Cities.” presented at the Sun City Seminar Series, February 25.
“Materials, Models, and Meters - Architectural Engineering Research at Argonne National Laboratory.”Invited Semianr presented at the Illinois Institute of Technology, February 24, 2017
“SonicLQ.” Invited Seminar presented at the DOE Lab Investor Knowledge Series, June 16, 2016.
“Urban Sciences and Engineering - Complex Models for a Complex World.” Invited Seminar presented at the U. of Miami, March 15 2016.
“SonicLQ.” presented at the Chicago Innovation Mentors, April 14, 2016
“Getting to Net Zero Buildings”, Seminar for AEE 2015 Winter Luncheon.
“Uncertainties and Probabilities in Building Energy Modeling.” presented at the Graduate Student Seminar, Illinois Institute of Technology, April 18, 2014
“Risk Analysis Related to Energy Use in the Chicago Loop.” presented at the Chicago Council on Highrise Building Spring Seminar, June 12, 2014.
“Uncertainties and Probabilities in Building Energy Modeling.” presented at the Chicago Computation Group Seminar, May 28 2014.
“Net Zero Buildings”, Seminar for AEE 2011 Fall Luncheon.

"Acoustics of Green Buildings", Argonne Decision and Information Sciences Seminar. 2011.
"Pressure Equalized Rainscreen Walls as Acoustic Resonators", Penn State Graduate Program in Acoustics Seminar, January 2010.
"Pressure Equalized Rainscreen Walls", IIT CAEE Graduate Seminar , November 2010.
"Conflicts and Synergies Between Good Acoustics and Energy Efficient Building Design", IIT CAEE Graduate Seminar, Nov. 2009
"The LEED Green Building Rating System", IIT CAE Graduate Seminar Colloquium, Apr. 2006.
"Sound and Hearing", IIT ASCE Student Chapter Seminar, Mar. 2006.
"Traffic Noise", Colloquium for the Illinois DOT, Nov. 2005.
"The Human Auditory System", IIT ASCE Student Chapter Seminar, Apr. 2005.
"Acoustic Radiosity", Colloquium for the IIT Department of Civil and Architectural Engineering, May 2003.
"Thermoacoustic-Stirling Systems", Colloquium for Department of Physics and Astronomy, University of Wyoming, Feb. 2003.
"Acoustic Radiosity", Colloquium for Department of Physics and Astronomy, BYU, Oct. 2002.
"Acoustic Resonators as Indoor Air Quality (IAQ) Sensors", Seminar at the ONR Physical Acoustics and Resonance Meeting, June 2001.
"Recent Advances in Thermoacoustic Refrigeration", Colloquium for Department Civil, Environmental and Architectural Engineering, University of Colorado, Nov 1999.
"Annular thermoacoustic prime movers" Thermal Systems Seminar at Los Alamos National Laboratory, July, 1998.
"Systems Identification Alternatives to Swept Sine and Curve Fitting ", Seminar at the ONR Physical Acoustics and Resonance Meeting, April 1997.
"Recent Advances in Architectural Acoustics", Colloquium for Department Civil, Environmental and Architectural Engineering, University of Colorado, April 1996.