Joonhee Lee

Curriculum Vitae

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EDUCATION

2016	Ph.D. in Architectural Engineering	University of Nebraska – Lincoln	Omaha, USA
2009	M.S. in Architectural Sciences	Rensselaer Polytechnic Institute	Troy, USA
2008	B.S. in Architectural Engineering	Seoul National University	Seoul, Republic of Korea

EMPLOYMENT

2017– **Assistant Professor**, Concordia University, Montréal, Canada
2016–2016 **Lecturer**, University of Nebraska – Lincoln, Omaha, USA
2011–2011 **Lecturer**, Andong University, Andong, Republic of Korea
2010–2012 **Researcher**, Korea Institute of Civil Engineering and Building Technology, Ilsan, Republic of Korea

GRANTS AWARDED

2017–2019	ENCS Start-up	PI	Sound Field Diffuseness: Improving Objective and Subjective Quantification Methods	$50,000
2018–2019	NSERC Engage	PI	Perceptual Optimization of Sound Masking Systems	$25,000
2018–2020	NSERC CRD	Co-PI	Improving design and scheduling process for prefabrication of light gauge steel (LGS) panelized walls	$104,346
2019–2022	FRQNT Nouveaux Chercheurs	PI	Development of Tone Evaluation and Attenuating Method for Building Equipment Noise	$92,448
2020–2022	OVPRGS Facility Optimization	PI	Variable acoustic testing facility for building noise reduction technologies	$35,000
2020–2023	ASHRAE Research Project	Sub-Contractor	Develop performance metric, criteria, and process to measure and predict speech privacy in High-Performance Buildings (1852-TRP)	$140,000
2021–2016	NSERC Discovery	PI	Human-centered design optimization for noise control technologies in built environments	$120,500

AWARDS & HONOURS

2017 Early Career Travel Grant, Acoustics '17, Boston
2015 Robert Bradford Newman Student Medal for Merit in Architectural Acoustics
2015 Maude Hammond Fling Fellowship, University of Nebraska-Lincoln
2015 Commendation Award, Spring Research Fair, University of Nebraska-Lincoln
2014 Inter-Noise Young Professionals Grant, Internoise 2014, Melbourne
2014 Concert Hall Research Summer Institute Full Scholarship, CHRG 2014, Chicago
2014 Leo Beranek Student Medal, Institute of Noise Control Engineering
2014 Milton Mohr Scholarship, University of Nebraska-Lincoln
2010 ICA Young Scientist Grant, International Symposium on Room Acoustics, Melbourne
2007 Commendation Award, Annual Exhibition of Architecture, Seoul National University
2002 Academic Scholarship, Ministry of Education, Republic of Korea

TEACHING EXPERIENCES

- Concordia University, 2017 - Current
  - Acoustics and Lighting, BLDG 366, Winter 2017, 2018, 2019, 2020, 2021
  - Building Acoustics, BLDG 473/6721, Fall 2018, 2019, 2020
  - Noise Control in Buildings, BLDG 691, Winter 2021
  - Building Illumination and Daylighting, BLDG 474/6713, Fall 2017
  - Air Pollution and Emission Control, CIVI 467, Winter 2021
  - Building Engineering Drawing and Introduction to Design, BLDG212, Winter 2021
- University of Nebraska – Lincoln, 2016
  - Building Acoustics Fundamentals, AE 3300, Fall 2016
  - Building Environment Technical Systems II, ARCH 334, Spring 2014

- Andong University, 2011
  - Building Mechanial System, Fall 2011

PUBLICATIONS

Refereed Journal Papers

1. Lee, J., J. M. Francis, and L. M. Wang (2017). How tonality and loudness of noise relate to annoyance and task performance. *Noise Control Engineering Journal* **65**(2), 71–82.
2. Lee, J. and L. M. Wang (2018). Development of a model to predict the likelihood of complaints due to assorted tone-in-noise combinations. *The Journal of the Acoustical Society of America* **143**(5). Publisher: Acoustical Society of America, 2697–2707. (Visited on 08/27/2021).
3. Hadavi, S. and J. Lee (2019). A Survey of The Unoccupied Acoustic Conditions of Active Learning Classrooms in Montreal. en. *Canadian Acoustics* **47**(1). Number: 1, 81–86. (Visited on 08/27/2021).
4. Dabirian, S., S. H. Han, and J. Lee (2020). Stochastic-based noise exposure assessment in modular and off-site construction. en. *Journal of Cleaner Production* **244**, 118758. (Visited on 08/27/2021).
5. Lee, J. and L. M. Wang (2020). Investigating multidimensional characteristics of noise signals with tones from building mechanical systems and their effects on annoyance. *The Journal of the Acoustical Society of America* **147**(1). Publisher: Acoustical Society of America, 108–124. (Visited on 08/27/2021).
6. Nik-Bakht, M., J. Lee, and S. H. Dehkordi (2021). BIM-based reverberation time analysis. en. *Journal of Information Technology in Construction (ITcon)* **26**(3), 28–38. (Visited on 08/27/2021).
7. Zhang, S. and J. Lee (2021). Diffuseness Quantification in a Reverberation Chamber and Its Variation with Fine-Resolution Measurements. en. *Buildings* **11**(11), 16.
8. Zarei, F., J. Lee, R. Mackenzie, and V. Le Men (2022). Evaluation of the uniformity of sound-masking systems in an open-plan office. en. *Applied Acoustics* **186**, 108464. (Visited on 11/04/2021).

Conference Proceedings

9. Lee, J., C. Schaefer, H.-E. de Bree, and N. Xiang (2010). Scaled-model measurements for coupled volumes using an automated high spatial-resolution scanning system. In: *International Symposium on Room Acoustics 2010*. Melbourne, Australia.
10. Lee, J., C. Schaefer, and N. Xiang (2010). An experimental scaled-model for coupled volumes with an automated high-spatial-resolution scanning system. In: *The Journal of the Acoustical Society of America*. Vol. 127. Publisher: Acoustical Society of America, pp.2002.
11. Alamuru, A., N. Xiang, and J. Lee (2011). Analysis of sound propagation in an experimental model using a high resolution scanning system. In: *The Journal of the Acoustical Society of America*. Vol. 130. Publisher: Acoustical Society of America, pp.2317–2317. http://asa.scitation.org/doi/abs/10.1121/1.3654258 (visited on 08/27/2021).
12. Lee, J., K. Yang, J. Yeon, and K.-W. Kim (2012). Sustainable acoustic absorbers using recycling paper. In: *19th International Congress of Sound and Vibration*. Vilnius, Lithuania.
13. Lee, J., J. M. Francis, A. Steinbach, and L. M. Wang (2013). Application of assorted tonality metrics to human annoyance thresholds of tones in noise. In: *The Journal of the Acoustical Society of America*. Vol. 134. Publisher: Acoustical Society of America, pp.4221–4221.
14. Francis, J., J. Lee, and L. Wang (2014). SE-14-C043: Determining annoyance thresholds of tones in noise. In: *2014 ASHRAE Annual Meeting Transactions*. Vol. 120. Atlanta, GA: ASHRAE, pp.1–8. https://digitalcommons.unl.edu/archengfacpub/73.
15. Lee, J., J. M. Francis, and L. M. Wang (2014). Investigating human annoyance thresholds of tones in noise from a dose-response relationship. In: *The Journal of the Acoustical Society of America*. Vol. 135. Publisher: Acoustical Society of America, pp.2343–2343. http://asa.scitation.org/doi/abs/10.1121/1.4877698 (visited on 08/27/2021).
16. Lee, J. and L. Wang (2014). Assessment of Noise-induced Annoyance by Tones in Noise from Building Mechanical Systems. In: *Internoise 2014*. Melbourne, Australia. https://digitalcommons.unl.edu/archengfacpub/70.
17. Lee, J. and L. M. Wang (2014a). Evaluating the effect of prominent tones in noise on human task performance. In: *The Journal of the Acoustical Society of America*. Vol. 136. Publisher: Acoustical Society of America, pp.2183–2183.
18. Lee, J. and L. M. Wang (2014b). The presence of tones in environmental noise. In: *ASHRAE Annual Conference 2014*. Seattle, WA: ASHRAE.
19. Lee, J. and L. M. Wang (2015a). Annoyance perception of complex multi-tone noise signals in both harmonic and inharmonic structures within the built environment. In: *The Journal of the Acoustical Society of America*. Vol. 138. Publisher: Acoustical Society of America, pp.1899–1899.

20. Lee, J. and L. M. Wang (2015b). Multidimensional characteristics of annoyance perception to tonal building mechanical noises. In: *The Journal of the Acoustical Society of America*. Vol. 137. Publisher: Acoustical Society of America, pp.2320–2320.
21. Lee, J. and L. M. Wang (2015c). Understanding annoyance perception of noise with tones through multidimensional scaling analysis. English (US). In: *22nd International Congress on Sound and Vibration, ICSV 2015*. Florence, Italy: International Institute of Acoustics and Vibrations. https://experts.nebraska.edu/en/publications/understanding-annoyance-perception-of-noise-with-tones-through-mu (visited on 08/27/2021).
22. Wong, D., J. Lee, and L. M. Wang (2015). How acoustics in California high performance schools relate to student achievement. English (US). In: *22nd International Congress on Sound and Vibration, ICSV 2015*. Florence, Italy: International Institute of Acoustics and Vibrations. https://experts.nebraska.edu/en/publications/how-acoustics-in-california-high-performance-schools-relate-to-st (visited on 08/27/2021).
23. Brill, L. C., J. Lee, and L. M. Wang (2016). Exploring correlation between sound levels in active occupied classrooms and unoccupied classrooms. In: *The Journal of the Acoustical Society of America*. Vol. 140. Publisher: Acoustical Society of America, pp.2946–2946.
24. Lee, J., L. C. Brill, H. Lester, J. Bovaird, and L. M. Wang (2016). Statistically defining the construct of "acoustic quality" in K-12 classrooms. In: *The Journal of the Acoustical Society of America*. Vol. 140. Publisher: Acoustical Society of America, pp.2946–2946.
25. Lee, J. and L. M. Wang (2016). How audible tones affect psychoacoustic perception of heating, ventilation, and air conditioning noise. In: *The Journal of the Acoustical Society of America*. Vol. 139. Publisher: Acoustical Society of America, pp.2058–2058.
26. Lee, J. and L. M. Wang (2017). Uncertainty in tone quantification methods of background noise for enclosed spaces. In: *The Journal of the Acoustical Society of America*. Vol. 141. Publisher: Acoustical Society of America, pp.3501–3501.
27. Lee, J. and M. Zaheeruddin (2017). Acoustics Specialization for Building Engineers. In: *Proceedings of the Acoustics Week in Canada 2017*. Vol. 45. 3, pp.100–101. https://jcaa.caa-aca.ca/index.php/jcaa/article/view/3083.
28. Dabirian, S., S. Han, and J. Lee (2018). Identification of modular construction activity noise levels by using k-means clustering. In: *Internoise 2018*. Vol. 258. Issue: 3. Chicago, IL: Institute of Noise Control Engineering, pp.4319–4325. https://www.ingentaconnect.com/contentone/ince/incecp/2018/00000258/00000003/art00035#expand/collapse.
29. Dabirian, S., J. Lee, and S. Han (2018). Noise exposure assessment of a modular construction manufacturing factory. In: *The Journal of the Acoustical Society of America*. Vol. 144. Publisher: Acoustical Society of America, pp.1756–1756.
30. Erfani, K., S. Mahabadipour, J. Lee, and M. Nik-Bakht (2018). Compatibility study between building information modeling and acoustic simulation software. In: *The Journal of the Acoustical Society of America*. Vol. 144. Publisher: Acoustical Society of America, pp.1918–1919. (Visited on 08/27/2021).
31. Hadavi, S. and J. Lee (2018a). Acoustic conditions for students' engagement in active learning classrooms. In: *The Journal of the Acoustical Society of America*. Vol. 144. Publisher: Acoustical Society of America, pp.1894–1894. (Visited on 08/27/2021).
32. Hadavi, S. and J. Lee (2018b). The new acoustic design challenges in active learning classrooms. en. In: *Internoise 2018*. Chicago, IL, pp.6.
33. Jha, D. D., J. Lee, and M. Zaheeruddin (2018). Characterization, analysis, and noise control measures of a mechanical room. In: *The Journal of the Acoustical Society of America*. Vol. 144. Publisher: Acoustical Society of America, pp.1790–1790.
34. Erfani, K., S. Mahabadipour, M. Nik-Bakht, and J. Li (2019). BIM-based Simulation for Analysis of Reverberation Time. In: *IBPSA Building Simulation 2019*. Rome, Italy: IBPSA. http://www.ibpsa.org/proceedings/BS2019/BS2019_211379.pdf.
35. Zhang, S. and J. Lee (2019). Diffuseness quantification of a reverberation chamber and uncertainty with fine-resolution measurements. en. In: *26th International Congress on Sound and Vibration*. Montreal, Canada, pp.7.
36. Hadavi, S. and J. Lee (2020). Calculation of activity noise levels in classrooms by using a Gaussian mixture model. In: *Internoise 2020*. Vol. 261. Issue: 5. Seoul, South Korea: Institute of Noise Control Engineering, pp.1779–1784. https://www.ingentaconnect.com/contentone/ince/incecp/2020/00000261/00000005/art00093.
37. Lee, J., F. Zarei, R. Mackenzie, and V. Le Men (2020). The spatial uniformity of an electronic sound masking system in an open-plan space. In: *The Journal of the Acoustical Society of America*. Vol. 148. Publisher: Acoustical Society of America, pp.2440–2440.

38. Lee, J., R. Mackenzie, V. Le Men, F. Gariépy, and F. Zarei (2021). The effect of sound masking on employees' acoustic comfort and performance in open-plan offices in Canada. en. In: *Internoise 2021*. Washington, D.C., pp.6. https://www.ingentaconnect.com/content/ince/incecp/2021/00000263/00000001/art00093.
39. Mackenzie, R., F. Zarei, V. Le Men, and J. Lee (2021). Spatial uniformity tolerances for sound masking systems in open-plan offices. en. In: *Internoise 2021*. Washington, D.C., pp.7.

ACADEMIC & PROFESSIONAL SERVICE

- Guest editor for Buildings, Special Issues on "Noise Control in Buildings" (2019)
- Scientific committee member, The 26th International Congress on Sound and Vibration (Aug. 2018)
- Technical committee member in Architectural Acoustics & Noise, Acoustical Society of America, (2010-current)
- Conference session Organizer
  - 182nd Meeting of of Acoustical Society of America, Session Title: Balancing speech intelligibility with privacy for indoor spaces, Denver, USA, May 2022
  - Internoise 2020, Session Title: Acoustics in Schools, Seoul, South Korea, August 2020
  - ICSV26, Session Title: Building Acoustics, Montreal, Canada, July 2019
  - Acoustics'17, Session Title: Perception of tonal noise, Boston, USA, June 2017
  - Joint Meeting of 176th Meeting of Acoustical Society of America and 2018 Acoustics Week in Canada, Session Title: Effects of noise on human performance, Victoria, BC, Nov. 2018
- Journal Paper Reviewer for
  - Building and Environment
  - Journal of the Acoustical Society of America
  - Canadian Acoustics
  - Sustainable Cities and Society
  - Applied Sciences
  - Acta Acustica united with Acustica
  - Building Acoustics
  - International Journal of Environmental Research and Public Health
  - Indoor and Built Environment
  - Noise Control Engineering Journal
  - Journal of Architectural Engineering