

**SPECIAL STUDENT SESSION
PRESENTATIONS OF CLASSIC PAPERS IN NOISE CONTROL**

At the upcoming INTER-NOISE 2021 congress, INCE-USA is sponsoring a special session of student presentations of classic papers in noise control. A paper is NOT required but an abstract should be submitted and the student must be registered for the congress. The application deadline is the same as the conference abstract submission deadline; please go to internoise2021.org to submit an abstract. The winner will receive \$1000 if she or he attends the INTER-NOISE 2021 Awards Ceremony either in person or virtually (date/time to be announced). See page 4 of this document for the Contest Rules.

COMPETITION ENTRY FORM

Name(s) of contestant (presenter) – Only this person’s name should be on the Abstract Submission and the Presentation.

Address, email, and telephone number of contestant to which all correspondence should be directed:

Identifier and title of paper that you have chosen to present (must be chosen from list on pages 2-3)

Title of abstract: FORMAT should be: Overview of <original author list>'s <year> paper on <original paper title>

Number assigned when you submitted the abstract: IN21 _____

CERTIFICATIONS

I, the presenter of the overview of the work in the classic paper in noise control paper listed above, certify that I prepared the presentation myself. I am/I have submitted an application to be a student member of INCE-USA or an I-INCE Affiliated Organization. Please specify organization _____ and the organization email _____.

I have read the rules of the competition (page 4 of this document) and agree to abide by them.

(Signature and Date)

I, the faculty advisor to the above-named student(s), certify that the student prepared the presentation themselves and that I have only provided feedback to help the student improve the presentation. I also certify that this student is a full time student at _____ University.

DATE _____ NAME (PRINT) _____
(Signature and Date)

ADVISOR’S EMAIL _____

Complete CHECK-OFF LIST in Rules (page 4)

Submit abstract electronically as part of the regular conference abstract submission procedure. Choose the special session for *Presentations of Classic Papers in Noise Control*.

Material to be mailed to Patricia Davies (daviesp@purdue.edu) by conference abstract deadline.

Page 1. Competition Entry Form (this form, just this page), and Page 2. A Copy of Submitted Abstract

Include your name and abstract submission number in the names of the file:

e.g., Brown_2150_Classic_EntryForm_and_Abstract.pdf WORD or .pdf format is acceptable.

Include IN21 Classic Papers in Noise Control in the subject line of your email.

INTER-NOISE 2021, Washington, DC, USA, 2021

PRESENTATIONS OF CLASSIC PAPERS IN NOISE CONTROL SESSION – PAPER LIST

You must select one of the following papers for your presentation. There may be multiple presentations of the same paper. Additional papers may be added to the list.

1. Perception and Effects of Noise

(1.a) Fletcher, H. and Munson, W.A., “Loudness, Its Definition, Measurement and Calculation,” *J. Acoust. Soc. of Am.*, Vol. 5(2), pp. 81-108, 1933.

(1.b) Stevens, S.S., “The Measurement of Loudness,” *J. Acoust. Soc. of Am*, Vol. 27(5), pp.815-829.

(1.c) Beranek, L.L., "Airplane Quieting II - Specification of Acceptable Noise Levels," *Trans. Am. Soc. Mech. Eng.*, Vol. 69, pp. 97-100, 1947.

(1.d) Kryter K.D., Ward, W.D., Miller J.D., Eldredge D. H., “Hazardous Exposure to Intermittent and Steady-State Noise, *J. Acoust. Soc. Am.*, Vol. 39, pp. 451-464, 1965.

(1.e) Coles R.R.A., Garinther G.R., Hodge D.C., Rice C.G., “Hazardous Exposure to Impulse Noise,” *J. Acoust. Soc. Am.*, Vol. 43(2) 336-334 1967.

(1.f) Henderson D., and Hamernik, R.P., “Impulse noise: Critical review,” *J. Acoust. Soc. Am.* Vol 80, 569-584, 1986. doi: 10.1121/1.394052

(1.g) Hamernik R.P., Qiu W., and Davis B., “The effects of the amplitude distribution of equal energy exposures on noise-induced hearing loss: The kurtosis metric” *J. Acoust. Soc. Am.* Vol 114, 386-395 (2003); doi: 10.1121/1.1582446

2. Building Noise and Room Acoustics:

(2.a) Beranek, Leo L., "Revised Criteria for Noise in Buildings," *Noise Control*, Vol. 3, pp. 19-27, 1957.

(2.b) Hunt, F.V., Beranek, L.L. and Maa, D.Y., "Analysis of Sound Decay in Rectangular Rooms," *J. Acoust. Soc. Am.* Vol. 11, pp. 80-94, 1939.

(2.c) Beranek, L.L. "The Forty-Fifth Thomas Hawksley Lecture: The Transmission and Radiation of Acoustic Waves by Structures," *Proceedings of the Institution of Mechanical Engineers*, Vol. 173(1), pp.12-35, 1959.

(2.d) Sharp, B.H., “Prediction Methods for Sound-Transmission of Building Elements,” *Noise Control Engineering Journal*, Vol. 11(2), pp. 55-63, 1978.

3. Active Noise Control:

(3.a) Olson, H.F. and May, E.G., "Electronic Sound Absorber," *J. Acoust. Soc. Am.*, Vol. 25(6), pp. 1130-1136, 1953.

(3.b) Ffowcs Williams, J.E., “Anti-Sound,” *Proceedings of the Royal Society of London Series A – Mathematical and Physical Sciences* Vol. 395, pp.63-88, 1984.

(3.c) Elliott, S.J. and Nelson, P.A., “Active Noise Control,” *IEEE Signal Processing Magazine*, Vol. 10, pp. 12-35, October 1993.

4. Passive Noise Control, and Acoustic Materials:

(4.a) Maa, D.Y., "Microperforated-Panel Wideband Absorbers", *Noise Control Engineering Journal*, Vol. 29(3), pp. 77-84, 1984.

(4.b) Biot, M.A., “Theory of propagation of elastic waves in a fluid-saturated porous solid 1. Low-frequency range,” *J. Acoust. Soc. Am.* Vol. 28 (2), pp. 168-178, 1956.

(4.c) Sabine, P.E., "A Critical Study of the Precision of Measurement of Absorption Coefficients by Reverberation Methods," *J. Acoust. Soc. Am.* Vol. 3, pp. 139-154, 1931.

5. Modeling of Sound Generation:

(5.a) Heckl, M., “Tyre Noise Generation,” *Wear*, Vol. 113(1), pp.157-170, Dec 1 1986.

(5.b) Lighthill, M.J., and Newman, M.H.A., “On Sound Generated Aerodynamically. 1. General Theory,” *Proceedings of the Royal Society of London Series A – Mathematical and Physical Sciences*, Vol. 211, pp.564-587, 1952.

(5.c) Sharland, I.J., “Sources of Noise in Axial Flow Fans,” *Journal of Sound and Vibration*, Vol. 1(3), pp.302-322, 1964.

6. Modeling Techniques:

(6.a) Lyon, R.H. and Maidanik, G., “Power Flow between Linearly Coupled Oscillators”, *J. Acoust. Soc. of Am.*, Vol. 34(5), pp. 623–639, 1962.

(6.b) Crocker, M.J. and Price, A.J., “Sound transmission using Statistical Energy Analysis.,” *J. Acoust. Soc. of Am.*, Vol. 9 (3), pp. 469-486 , 1969.

(6.c) Schenck, H.A., “Improved Integral Formulation for Acoustic Radiation Problems,” *J. Acoust. Soc. of Am.*, Vol. 44(1), pp. 41-58, 1968.

(6.d) Sung, S.H. and Nefske, D.J. “A Coupled Structural-Acoustic Finite Element Model for Vehicle Interior Noise Analysis” *Journal of Vibration, Acoustics, Stress and Reliability in Design*, Vol. 106(2), pp. 314-318, April 1984.

7. Sound Propagation

(7.a) Parkin, P.H. and Scholes, W.E., “Horizontal Propagation of Sound from a Jet Engine Close to the Ground at Hatfield,” *J. Sound and Vib.*, Vol. 2(4), pp. 353-374, 1965.

(7.b) Embleton, T.F.W., Piercy, J.E. and Olson N., “Outdoor Sound Propagation over Ground of Finite Impedance,” *J. Acoust. Soc. Am.*, Vol. 59(2), pp. 267-277, 1976.

PRESENTATION OF CLASSIC PAPERS IN NOISE CONTROL CONTEST RULES

PAPER OVERVIEW BEING PRESENTED. The paper being presented must be selected from the list provided in this entry form. Once the abstract has been submitted, the student must stick with a presentation of that paper, and not switch to another paper on the list.

AUTHORSHIP OF PRESENTATION. The presentation must be compiled by and presented by the student. The student must be **registered as student at a university or college at the time of the conference.**

CONNECTION WITH I-INCE. The student must be a student member of an I-INCE Affiliated organization, e.g., INCE-USA. <http://i-ince.org/membership.php#members>

PRESENTATION AND ABSTRACT TITLE: Format for the title of paper should be: "Overview of <original author list>'s <year> paper on <original paper title>"

ABSTRACT: This should highlight the main thrust of the original paper and the focus of the presentation, which could include additional work that has been done by the student presenter. Additional work could include reproduction of the results in the paper, additional analysis, or showing how the original paper has influenced subsequent research or noise control practice, etc.

DEADLINE. An abstract for the presentation must be submitted by **the conference abstract submission deadline (currently 15 February 2021)**. If the deadline is extended, then the new date will be used as the deadline for submission of your entry.

SOCIETY MEMBERSHIP. If the student is not a student member of an I-INCE affiliated organization, student member application forms and payments, if any, must be received by the I-INCE Affiliated Organization by the **abstract deadline**. **A Competition Entry Form (page 1 of this document) is required for the presentation to be considered for the session and in the competition.**

JUDGES. All decisions of the I-INCE and INCE/USA judges are final. The Institute reserves the right not to make an award should presentations not satisfy minimum levels of expectations by the panel of judges.

JUDGING CRITERIA. Judges will evaluate the in-person and virtual presentations by considering:

- i. The judges' perceptions of the student's understanding of the technical content of the classic paper.
- ii. The student's understanding of the impact of the research reported in the paper.
- iii. The quality of the communication of the technical content of the classic paper.
- iv. The quality of the slides.
- v. The clarity and presentation style of the speaker.
- vi. The quality of any additional analysis performed.

AWARDS CEREMONY. All contest entrants must present their papers in person or virtually in the session to which their papers are assigned. They must also be present in person at the awards ceremony of the conference (check the final Conference Schedule) to receive prize.

CHECK-OFF LIST.

Submission of the abstract electronically as part of the regular conference abstract submission procedures:

- Abstract Submitted in the Session: “**PRESENTATIONS OF CLASSIC PAPERS IN NOISE CONTROL**”
- Note Abstract Number Assigned on submission on form (page 1 of this document): IN21_####
- Note title and identifier (in list on pages 2 and 3) of selected paper on form (page 1 of this document)
- Complete rest of form (page 1) including the signature of advisor.

Material to be mailed to Patricia Davies (daviesp@purdue.edu) by conference abstract deadline. combined into 1 file.

- PAGE 1: Competition Entry Form (1st page of this document) & PAGE 2: Copy of Submitted Abstract