

Supporting Education in Noise Control Engineering

Eric W. Wood, Contributing Editor

The INCE Foundation is a non-profit, tax-exempt, publicly supported charitable organization established in 1993 with the approval of the board of directors of the Institute of Noise Control Engineering of the USA (INCE/USA). It is incorporated in the State of New York and is organized under Section 501(c)(3) of the Internal Revenue Code. Gifts to the foundation are tax-deductible.

As an officer and director, I have the pleasure of working with the INCE Foundation to recognize and reward technical excellence in our noise control engineering profession. Support is received from organizations and individuals recognizing the ongoing importance of the following purposes of the INCE Foundation:

- Support, promote, and advance scientific and educational activities directed toward the theory and practice of noise control engineering.
- Aid in progress and development of this field and related arts and sciences.
- Promote and support such scientific and educational activities through grants, funding, and financial assistance to various individuals, institutions, and organizations.

By providing financial support, the INCE Foundation rewards undergraduate students, graduate students, educators, engineers, authors, and projects judged to be outstanding in the field of noise control engineering. Award recipients receiving foundation support are selected annually by panels of qualified judges from the Institute of Noise Control Engineering of the United States of America. Awards presented with support from the Foundation are described below with some of the newest awards presented first:

Laymon N. Miller Award for Excellence in Acoustical Consulting – This new annual award is provided jointly by the Institute of Noise Control Engineering of the United States of America (INCE/USA) and the National Council of Acoustical Consultants (NCAC) to individuals who have practiced acoustical consulting in an exemplary manner over a sustained period of time to improve acoustical environments in and around buildings, transportation systems, work places, recreational and other occupied spaces so that the quality of life for citizens and communities is significantly enhanced.

Michiko So Finegold Award – For graduate students and young professionals in the U.S. in the fields of noise control engineering, noise effects research, and development of noise policies to facilitate their studies or travel to conferences. Funded by donations from the Michiko So Finegold Memorial Trust.

Hallberg Foundation Award – To support travel of undergraduate and graduate students to present their work in noise control engineering at an INCE/USA conference. Funded by donations from the Elizabeth L. and Russell F. Hallberg Foundation. Facilitated by INCE/USA member Douglas F. Winker.

E-A-R Thermal Acoustic Systems Award – To support travel of undergraduate and graduate students to present their work in noise control engineering at conferences sponsored by INCE/USA. Funded by a donation from E-A-R Thermal Acoustic Systems Aereo Technologies, LLC, a wholly owned subsidiary of 3M.

Classic Papers in Noise Control Engineering – Awarded to students presenting during an INCE/USA conference on seminal noise control papers with a focus on the main thrust of the original paper and additional work and analysis that has been done by the student presenter and how the original paper has influenced subsequent research or noise control practice.

Leo Beranek Student Medal for Excellence in Noise Control Studies – Established by INCE/USA and the INCE Foundation in 2010 to recognize excellence in the study of noise control by undergraduate and graduate students at academic institutions in North America with courses in, or related to, noise control engineering, including practical applications.

Martin Hirschorn IAC Prize, Graduate Student Project Award – Awarded as a contribution to the education of a graduate student studying noise control engineering in the U.S. who proposes a project related to an application of noise control engineering and/or acoustical conditioning of architectural spaces.

Martin Hirschorn IAC Prize, Best Paper Award – Awarded to the author of the best paper on new and/or improved cost-effective noise control and/or acoustical conditioning products published in the two years preceding the award.

INCE/USA Undergraduate Student Project Award – To recognize undergraduate students undertaking independent studies in noise control engineering and related topics and to provide them with nominal grants to cover expenses that otherwise would not be available from university resources.

INCE/USA Student Papers Award – Student paper competitions judged on the quality of both the written submission, as well as the oral presentation that take place during INCE/USA-sponsored annual conferences in North America. Student authors of up to five outstanding papers receive awards during the annual conferences. Authors of winning papers that are expanded and

published in the Noise Control Engineering Journal receive an additional award.

INCE/USA Distinguished Noise Control Engineer Award – To recognize individuals who have rendered conspicuous and consistently outstanding service to the Institute and to the field of noise control engineering over a sustained period.

INCE/USA Outstanding Educator Award – To honor a person who has significantly advanced the technology and practice of noise control engineering through unique contributions to the education of future noise control engineers.

INCE/USA Award for Excellence in Noise control engineering – Established to stimulate the development and recognition of noise control engineering technology for the ultimate benefit of society.

INCE/USA Distinguished Service Medal – Presented to individuals who have shown exceptional dedication and service (above and beyond the call of duty) to INCE/USA. This award acknowledges volunteers who provide significant and sustained help to INCE/USA and the profession.

Since 1993, students, educators, engineers, and authors have received 400 awards, many with financial support from the INCE Foundation. Academic institutions in the US, where exceptional educators are teaching and outstanding students are learning noise control engineering, include the following: Brigham Young University; Iowa State University; Dartmouth College; Ohio State University; Georgia Institute of Technology; Purdue University; Michigan Technological University; Stevens Institute of Technology; Pennsylvania State University; University of California at Los Angeles; Rensselaer Polytechnic Institute; University of Florida, Dept of Architecture; University of Cincinnati; University of Hartford; University of Florida in Gainesville; University of Kentucky; University of Mississippi; Université de Sherbrooke; University of Nebraska; University of Southern California; Virginia Polytechnic Institute; Wayne State University; and University of Kentucky.

Examples of recent award-winning projects by graduate students who received INCE Foundation funding are:

- *Validation and Modeling of Diffraction Around Three-Dimensional Surfaces Using 3D Boundary Element Method*
- *Noise Reduction for Magnetic Resonance Imaging (MRI) Patients*
- *Development of New Acoustic Metrics for Complex Hospital Sound Environments*
- *Development of a Novel Active Sound Quality Control System*
- *Investigation of Room Effects on the Comprehension of Speech from English-*

as-a Second-Language (ESL) Talkers and Native English-Speaking Listeners

Examples of recent award-winning conference papers by students who received INCE Foundation funding are:

- *A Design Parameter for Acoustic Black Holes*
- *Measuring Sound Absorption Coefficient Under a Synthesized Diffuse Acoustic Field*
- *Atmospheric Effects on Noise Propagation from an Enroute Aircraft*
- *Impedance-to-Scattering Matrix Method for Silencer Analysis*
- *High-Frequency Sound Field Simulation by the Method of Local Basis Representation*

Examples of recent award winning best-paper publications with authors who received INCE Foundation funding are:

- *Design of a Jagged-Edge Noise Barrier: Numerical and Experimental Study*
- *Reducing the Noise Emitted From a Domestic Clothes-Drying Machine*
- *Notebook Blower Inlet Flow and Acoustics: Experiments and Simulations*
- *Effects of Voids and Recesses on the Transmission Loss of Honeycomb Sandwich Panels*
- *Numerical Optimization of the Tonal Noise of a Backward Centrifugal Fan Using a Flow Obstruction*

Technology for a Quieter America (TQA)

Fund and Follow-Up Programs. The INCE Foundation received significant contributions from the Noise Control Foundation to establish the TQA fund for the purpose of supporting follow-up programs on the findings and recommendations of the *Technology for a Quieter America* report published by and available from the National Academies Press. Organizations carrying out the TQA follow-up program include the Noise Control Foundation, the INCE Foundation, the National Academy of Engineering, and INCE/USA.

The follow-up workshop entitled *Noisy Motorcycles – An Environmental Quality-of-*

Life Issue was sponsored by the INCE Foundation, the Noise Control Foundation, and the TQA Follow-up team and was hosted by the NAE at the National Academies Keck Center, in Washington, DC, on October 24, 2012. The workshop report is available for download without cost as a public information document at the INCE/USA website.

The follow-up workshop entitled *Cost-Benefit Analysis – Noise Barriers and Quieter Pavements* was organized by the U.S. DOT Volpe Center, the INCE Foundation, the Noise Control Foundation, International INCE, and the TQA follow-up team and was hosted by the NAE at the National Academies Keck Center, in Washington, DC, on January 16, 2014. The report for this workshop has been completed and is available for download without cost as a public information document at the INCE/USA website.

The follow-up workshop entitled *Reducing Employee Noise Exposure in Manufacturing, Best Practices, Innovative Techniques, and the Workplace of the Future* was organized by the U.S. National Institute for Occupational Safety and Health, the TQA follow-up team, and the INCE Foundation and was hosted by the National Academy of Engineering at the Keck Center, in Washington, DC, on February 19-20, 2014. The report for this workshop will be completed shortly.

The INCE Foundation does not engage in, support, or promote lobbying efforts. Instead, the INCE Foundation recognizes and awards excellence by colleagues and friends in the noise-control profession.

The INCE Foundation provides financial support for INCE/USA awards, typically in the range of \$10,000 to \$15,000 annually. Each year, generous people and organizations make tax-deductible donations to the foundation. In 1999, Martin Hirschorn arranged for the Foundation to receive a \$100,000 grant as a permanent endowment, the income of which is used to support the annual Martin Hirschorn IAC Prizes.

The Noise Control Foundation has pro-

vided significant endowments to support follow-up activities directed at recommendations in the *Technology for a Quieter America* report published by the National Academy of Engineering. In 2012, the Beranek Family Trust provided an unrestricted endowment of \$50,000. Corporate donations have recently been received from E-A-R Thermal Acoustic Systems Aearo Technologies of 3M, Eckel Industries, HMMH, Noise Control Engineering, Associates in Acoustics, LSA Associates, and Acentech.

There are no private interests within the INCE Foundation. Careful control is maintained over all expenses. The foundation has no paid staff or consultants. Its governing body consists of outstanding scientists and engineers who have made major contributions to the field of noise control engineering, and all serve without compensation. Most annual expenses, other than awards, are related to printing and mailing services, plus an annual registration fee.

The INCE Foundation is searching for additional funding in the form of donations and grants to further expand the recognition and financial support to exceptional undergraduate and graduate students studying in the field of noise control engineering. The foundation is starting to plan and will appreciate individual and corporate contributions to a fund-raising drive associated with the upcoming 50th anniversary of the founding of INCE/USA.

All donations are appreciated, acknowledged, and serve to support education in noise control engineering. Donation information is available from the author.

I hope that I have heightened interest in the INCE Foundation, where we recognize excellence in noise control engineering, and I look forward to receiving comments. Contributions from individuals and from corporations are necessary for the foundation to continue serving our profession. **SV**

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