

Technology for a Quieter America - Subcommittee on Metrics of Community Noise

Committee

Patricia Davies

Chair

Patricia Davies received her B.Sc. in Mathematics from the University of Bristol in 1977, and her M.Sc. and Ph.D. in Sound and Vibration from the University of Southampton in 1981 and 1985, respectively. Dr. Davies is a faculty member at the Ray W. Herrick Laboratories, part of the Purdue University School of Mechanical Engineering, where she conducts research in the areas of: (1) Nonlinear System Identification, (2) Vibration Measurements, (3) Sound Quality and Perception Based Engineering, (4) Acoustical Arrays for Sound Source Visualization, and (5) Event-based Signal Processing. She has applied her research to: modeling the dynamics of the polyurethane foam used in car seats, visualizing automobile noise sources during pass-by tests, predicting reciprocating pump failure, analyzing infant and mother laughter, and modeling human response to refrigerator, HVAC, chiller and large machinery noise. She has co-authored over 80 journal and conference papers. Currently Dr. Davies is also coordinating a group of psychology and engineering professors at Purdue who research and develop models of the effects of engineered products and systems on people. The aim is to integrate these models into the engineering design process so that engineered systems can be optimized for the people who use, or are affected by, them. Engineering and Psychology professors in this Perception-based Engineering group collaborate on projects such as image quality, sound quality, effects of noise on performance and decision making, speech and gesture perception, thermal comfort and air quality, touch and feel interfaces, interface design and response to vibration.

Kenneth M. Eldred

Member

Kenneth Eldred has made numerous contributions in noise and vibration control of air, space, and transportation vehicles and in delineating acceptable noise environment for people. Eldred is the President of Ken Eldred Engineering and has been a member of the National Academy of Engineering since 1975. He has participated in a variety of national and international activities relating to airport noise reduction and noise measurement.

Lawrence S. Finegold

Member

Larry Finegold has worked as a Research Psychologist at the U.S. Air Force Research Laboratory for 20 years. Most of his career has involved research on the effects of noise on people, resulting in the publication of over twenty-five technical reports, journal articles, and conference presentations. The focus of his research has been on community annoyance, sleep disturbance, and the non-auditory health effects of noise exposure, particularly aircraft noise exposure. He has accomplished meta-analyses of the published English-language data on both community annoyance and sleep disturbance. His community annoyance prediction curve was adopted as a US ANSI Standard, and the sleep disturbance prediction curve is now beginning to be circulated. The latter, however, has already received attention in Europe. He has managed R&D projects on noise exposure and human response monitoring technology, and led the development of a sophisticated noise exposure prediction and impact analysis system for aircraft noise exposure using geographic information system (GIS) software and state-of-the-art noise models.

In addition to his scientific research efforts, Finegold has served in the following professional appointments:

- Chair, National Research Council (NRC) Transportation Research Board (TRB), Transportation-Related Noise and Vibration Committee (A1F04), Aircraft Noise Subcommittee
- Chair, American National Standards Institute (ANSI)/Acoustical Society of America (ASA) Accredited Standards Committee on Bioacoustics (S3)
- Associate Editor, The Noise Control Engineering Journal (NCEJ) (Community Noise, Physiological and Sociological Effects of Noise, Environmental Impact Analyses)
- Chair, International Commission on Biological Effects of Noise (ICBEN) Team 9, Noise Policies, Guidelines, and Regulations
- Member, International Commission on Biological Effects of Noise (ICBEN) Team 6, Effects of Noise on Sleep
- Chair, Institute of Noise Control Engineering (INCE) Technical Committee on Community Noise (TCCN) and Chair, INCE Liaison Program Advisory Council (LPAC) Government Agencies Coordinating Group (GACG)
- Individual Expert for ANSI Standards Committee on Noise and member of several ANSI Standards Working Groups on Noise

Carl E. Hanson

Member

Carl Hanson is a principal at Harris Miller Miller and Hanson where he is a specialist in transportation noise. The company was founded in 1981, and is involved in many areas of noise control engineering. He became a member of INCE/USA in 1993, and served as chair of the technical program for NOISE-CON 01. He and his company have been contractors to many government agencies, especially with regard to aircraft noise, surface transportation noise, and recreational noise. The company “owns” the web site for the Federal Interagency Committee on Aircraft Noise (FICAN).

Ben H. Sharp

Member

Ben Sharp received his Ph.D. in Acoustics in 1965 from the University of Manchester, England. He joined the Wyle Laboratories Staff in 1968, and currently serves as Director of Wyle's Acoustic Group in Arlington, Virginia.

He has provided consulting support to airports to mitigate noise from aircraft operations and ground operations. Since 1996 he has been responsible for managing the MAGENTA project conducted for the FAA and ICAO to develop a world airport noise exposure model for quantifying the benefits of aircraft noise stringency standards, operational procedures, and land-use planning.