

**AES PNW Section and the Art Institute of Seattle Student Section
January 2010 Meeting Notice**

"Upgrading the Audio Industry"

Dr. Floyd Toole

and

"The Subjective Evaluation of Loudspeaker Sound Quality"

Dr. Sean Olive, Director of Acoustic Research, Harman International

and

MS Studios Facility Tour

with Rick Senechal, MS Studios

Wednesday, January 20, 2010 - 7:30PM

Microsoft Studios

4420 148th Ave NE, Redmond WA 98052, Building 127

[DIRECTIONS...](#)

Our January meeting features not one, but two of our industry's leading acousticians, Drs. Floyd Toole and Sean Olive. Sean is Director of Acoustic Research for Harman International, the parent company that includes JBL, Studer/Soundcraft, Crown, dbx, BSS, Lexicon, AKG and others. Floyd was VP for Acoustical Engineering at Harman before his retirement a few years ago. Both have made notable contributions to the fields of acoustics, rooms, psychoacoustics and listening tests, and descriptions of their presentations here (and full bios) follow.

In addition, our venue host Rick Senechal of Microsoft will offer a short tour of the Microsoft Studios facility. Microsoft Studios is a world class full-service production facility, offering end-to-end solutions for all media needs including creative services, project management, graphic and 3D design, three sound stages for live broadcast or stage production, media distribution, and all types of audio production. The production backbones at MS Studios feature an HD router that includes an intercom system integrated into the audio consoles and telephony system and a 100 terabyte SAN with fiber connectivity to production machines. MS Studios also has three Starbucks coffee machines so the work can go on around the clock.

**Upgrading the Audio Industry
by Floyd E. Toole**

The audio industry is based on sound reproduction – a recreation that strongly resembles an original performance, whether it is a live performance or an artistic creation in a mixing/mastering room. Yet, for over 100 years, starting with Edison, it has been obvious that the recreations that consumers have been hearing have been not only different from the originals, but different from each other. Some of the variability can be traced to a lack of consistency in the creative process (e.g. non-standardized, even idiosyncratic, monitor loudspeakers and control rooms) and some to huge variability in playback (e.g. all manner of loudspeakers, headphones and car audio systems). Music has survived these abuses, and the directional and spatial deprivations imposed by monophony for about 50 years, and stereophony for more than 50. The core of the art: musicianship, melody, harmonies, rhythm and lyrics have prevailed. But, we can do much better.

Time moves on, and now we have multichannel audio, a healthy home theater industry, and electronic processing capabilities that once could only be dreamed of, but still the original goal of sound reproduction eludes us. Existing technical specifications on audio products are frequently inappropriate, wrong or incomplete. Industry standards incorporate requirements that are simply not capable of achieving the stated objectives. This applies to loudspeakers, rooms and even to room acoustical materials. The practices of the industry include oft-repeated beliefs that are sometimes wrong, but that are held to be commensurate with scientific facts. Part of the task of upgrading, therefore, is education. The rest of it is a thoughtful and deliberate application of the science that is known to problems that are now quite well identified. A logical starting point is to define a listening situation that shows continuity in the essential perceptual dimensions from the point at which the art is created (music and movie monitoring) to playback in homes and cars.

**The Subjective Evaluation of Loudspeaker Sound Quality
by Sean Olive**

Listening tests play an important role in the research, development and testing of consumer, professional and automotive loudspeaker products at Harman International. A scientific listening test method provides sensitive, reliable and valid perceptual judgments of

loudspeaker sound quality that can be largely explained and predicted by acoustical measurements of the loudspeaker and its interaction with the room acoustics. An overview of the listening test methods, tools and facilities used at Harman International will be given using examples from recent tests on loudspeakers and room correction products. The author will demonstrate Harman's "How to Listen" software used for training and selecting Harman's listeners.

About our Presenters

Floyd E. Toole, PhD

Floyd Toole has a Ph.D. in electrical engineering from Imperial College, London. He spent 25 years as a research scientist at the National Research Council of Canada, and 15 years as Corporate VP – Acoustical Engineering at Harman International. For research into the acoustics and psychoacoustics of sound reproduction he received the AES Silver Medal Award. Dr. Toole is a fellow of the ASA, and a fellow and past President of the AES. In 2008 he was awarded the CEDIA Lifetime Achievement Award. Now retired, he wrote "Sound Reproduction" (Focal Press 2008), and contributes to CEDIA course content and teaching, and to entertaining AES audiences.

Sean Olive, PhD

Sean Olive is Director of Acoustic Research for Harman International where he directs the Corporate R&D group, and oversees subjective benchmarking of consumer, professional and automotive audio products. Sean received a Bachelors degree in Music from the University of Toronto, and his Masters and Ph.D. degrees in Sound Recording from McGill University in Montreal. Dr. Olive has written over 30 research papers on the perception and measurement of audio for which he was awarded the AES Fellowship Award in 1996, and two Publication Awards (1990 and 1995). Sean is the current Vice President for the AES Western US-Canada region. His blog, "Audio Musings" can be followed at <http://seanolive.blogspot.com>

*CEDIA (Custom Electronic Design & Installation Association) <http://www.cedia.net/>
Harman International: an enormous multi-national corporation that owns, Harman Kardon, JBL, Crown, BSS,
Soundcraft, Studer, Lexicon, and many, many others. see www.harman.com*

December Meeting Notice

Rather than trying to compete with everyone's holiday events, there is no December meeting.

Steve Turnidge

AES PNW 2009-2010 Section Chair

n.b. *The material presented at our meetings is the opinion of the presenter and not necessarily that of the Society. You are encouraged to conduct your own research and to form your own opinions before adopting the presented material as Truth.*

Our meetings are open to anyone interested in Audio. AES membership is NOT required for you to attend our meetings.

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