

AES PNW Meeting Notice

Hearing, Acoustics and Soundfields:

What Can We Hear, What Can't We Hear?

Presented by

James D. Johnston

Audio Architect, Codecs Group, Microsoft,

and

PNW Section Committeemember

Co Sponsored by

the AES PNW Section

and the University of Washington Center for Digital Arts and Experimental Media (DXARTS)

[Center for Digital Arts and Experimental Media \(DXARTS\)](http://www.washington.edu/dxarts/)

Wednesday, October 6, 2004, 7:30pm
121 Raitt Hall, University of Washington Seattle Campus

Capturing a soundfield is probably impossible for basic reasons of physics, and even if it was possible would involve the use of many hundreds of channels of x,y,z,w information, spatially sampling the area around a listening area. While this sounds rather discouraging, it turns out that the human auditory system can capture only a tiny bit of that overwhelming flood of information, and further that we are able to come up with capture strategies that hold on to quite a bit of those perceptual cues.

In this presentation, Mr. Johnston will discuss the properties of a typical diffuse (i.e. large, good venue) soundfield, the properties of binaural hearing, and how the two fit together, with attention toward how this affects capture (miking, etc.) of the perceptual cues in a soundfield.

This meeting is co-sponsored by the University of Washington's Center for Digital Arts and Experimental Media, [\[http://www.washington.edu/dxarts/\]](http://www.washington.edu/dxarts/), a creative research convergence zone for artists and scholars who are pioneers of an unfolding new era in the arts.

About JJ Johnston

Mr. Johnston worked 26 years for AT&T Bell Labs and its successor, AT&T Research Labs. He was one of the first investigators in the field of perceptual audio coding, one of the inventors and standardizers of MPEG 1/2 Audio Layer 3 and MPEG-2 AAC, as well as the AT&T Bell Labs/AT&T Research Labs PTFM (perceptual transform coding), PAC (perceptual audio coding) and the ASPEC algorithm that provided the best audio quality in the MPEG-1 audio tests. Most recently, he has been working in the area of auditory perception of soundfields, ways to capture soundfield cues and represent them, and ways to expand the limited sense of realism available in standard audio playback for both captured and synthetic performances. He is an IEEE Fellow, an AES Fellow, a NJ Inventor of the Year, an AT&T Technical Medalist and Standards Awardee, and a co-recipient of the IEEE Donald Fink Paper Award. He received his BSEE and MSEE degrees from Carnegie-Mellon University in 1975 and 1976, respectively.

Meeting Location Information

The Raitt Hall doors are usually closed at 5pm, so we will have one entryway (doors 10A/10B) open for this event. This doorway is on the side of the building opposite the grassy quad/cherry trees, to the right as you face the correct side of the building. Signs will be posted. (see map link below)

To get to room 121 you have to go down the stairs as you enter, or take the elevator to level 1. The

building is wheelchair accessible.

The University is very large and has many entrances and parking areas. Raitt Hall is on a corner of the central quadrangle, between the Art building and Savery Hall. In all cases, the following directions apply:

Stop at the entrance kiosk. Tell the attendant you are attending a presentation at Raitt Hall (not a class). Pay the \$4 fee. Ask for a map, and for directions to your assigned parking area and to Raitt Hall. Parking is strictly enforced until 9pm, so it is inadvisable to buck the system. There are many 7pm classes, so plan accordingly.

The primary entrance to campus is at NE 45th St. and 17th Ave. NE. From I-5, take the NE 45th St. exit eastbound. Follow NE 45th St. about 10 blocks east until 17th Ave. NE, where the UW is a right (south) turn.

map: <http://www.washington.edu/home/maps/northcentral.html?66,63,792,353>

The access door for our event is on the side of the building closest to map coordinates M8.

driving: <http://www.washington.edu/admin/parking/directions/>

parking: <http://www.washington.edu/admin/parking/>

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

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