



Audio Engineering Society – New York Section

NEWSLETTER – MEETING NOTICE

2009-2010

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The New York Section of the Audio Engineering Society invites all folks who are actively involved in professional audio to join us for a most informative evening.

Students are especially welcome.

Tuesday, November 17th, 2009

The New School Jazz Performance Space

55 West 13th Street, Between 5th and 6th Avenues

Fifth Floor

Note later than usual starting time!

Meet and Greet 7:00 P.M.

Presentation 7:30 P.M.

“New Research at the Intersection of Audio, Music, and Therapy”

Presenter: Dr. Robert Rowe, New York University

Host: Jonathan S. Abrams, Chief Technical Engineer, Nutmeg Audio Post

As audio practitioners (engineers, producers, technicians, etc.), we are often exposed to music. The music we listen to is either recorded (audio) or a live performance. Music has been used as a type of therapy, but where do these three components meet? What else is there to learn from these three disciplines and how they are related?

Robert Rowe received degrees in music history & theory (B.M. Wisconsin 1976), composition (M.A. Iowa 1978), and music & cognition (Ph.D. MIT 1991). From 1978 to 1987 he lived and worked in Europe, associated with the Institute of Sonology in Utrecht, the Royal Conservatory in the Hague, the ASKO Ensemble of Amsterdam, and with IRCAM in Paris, where he developed control level software for the 4X machine.

In 1990 his composition Flood Gate won first prize in the “live electroacoustic” category of the Bourges International Electroacoustic Music Competition. In 1991 he became the first composer to complete the Ph.D. in Music and Cognition at the MIT Media Laboratory and is currently Professor, Vice-Chair, and Director of the Music Composition program in the Dept. of Music & Performing Arts Professions of the Steinhardt School at New York University.

His music is performed throughout North America, Europe, and Japan and is available on compact discs from Innova, Bridge, New World, Roméo, Quindecim, Harmonia Mundi, and the International Computer Music Association, and his book/CD-ROM projects Interactive Music Systems (1993) and Machine Musicianship (2001) are available from the MIT Press.

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Tuesday November 17th, 2009
New Research at the Intersection of
Audio, Music and Therapy
Presented by Dr. Robert Rowe, New York University
Host: : Jonathan S. Abrams, Chief Technical Engineer,
Nutmeg Audio Post



L-R: Dr. Robert Rowe, Jonathan Abrams

Robert Auld opened the meeting by asking how many attendees were AES members. Almost all of them were. Mr. Auld noted that the next New York Section meeting, on December 8th, would be held at a new venue, the Hearst Building auditorium at 300 West 57th Street.

Jonathan Abrams then introduced Dr. Rowe, a composer with a special interest in music and cognition. Dr. Rowe has worked with the Institute of Sonology in Utrecht and with IRCAM in Paris, where he developed control level software for the 4X machine (a musically oriented computer). With this background he is especially qualified to investigate the use of computers for analyzing music and human perception of music, and much of his presentation centered around current developments in that field.

Dr. Rowe started by noting the limits of previous efforts to analyze musical content, based on examination of MIDI signals. The 20 year old MIDI standard, while still very useful, is limited in the amount of information it conveys about music--largely the timing, dynamics and pitch, but nothing about timbre for example. So now, efforts are being focused on analysis of recordings of actual music. The emphasis is on finding out how humans perceive music, and finding ways for computers to learn such comprehension.

A simple example is called specific loudness, which defines how loud something sounds to a person, rather than just the measured physical amplitude of the sound signal. A research company that Dr. Rowe works with, Source Tone, currently makes computer software plug-ins that use specific loudness parameters for measuring and modifying sound. Dr. Rowe demonstrated several of those plug-ins for the meeting.

A more complex problem is attempting to train computers to predict human emotional reactions to specific pieces of music. As part of this effort, Dr. Rowe and his associates have developed a Circumplex Model of Emotions which is used to collect and analyze data on human reactions to varied musical samples. The model can be plotted in two dimensions, showing valence (unpleasant to pleasant reactions) and arousal (calm to excited). The four quadrants possible with such a plot can encompass a wide range of listener reactions to a sample. Data collected from hundreds of subjects has then been used to develop empirical models of human perception of hundreds of musical samples. In turn, this data has been used to develop computer algorithms for predicting emotional reactions to specific pieces of music. According to Dr. Rowe, the accuracy of prediction of the software currently is better than 70 percent. Finally, Dr. Rowe spoke briefly about using music as therapy, referring to a recent article in the Wall Street Journal about the use of music in treating Alzheimer's patients.

Following Dr. Rowe's presentation there was a question and answer session, with many of the approximately fifty attendees participating.

Report by Robert Auld

The AES NY Section is pleased to thank our underwriters for their continued support, **NHT** and **Studio Consultants, Inc.** We also appreciate the support and assistance of **Christopher Hoffman** and the **New School University.** Remember to check our web site for the latest updates and information <http://www.aes.org/sections/ny/>