



AES 115th Convention

October 10–13, 2003

Jacob Javits Convention Center

New York

The AES convention returned to New York this year and found the industry in an upbeat and enthusiastic mood. Thousands of delegates flooded the exhibition floor and the busy program of workshops, tutorials, papers, technical tours, and special events devoted to all aspects of the industry. The atmosphere was electric, with an exciting buzz pervading all the events. There was a strong focus on education and training at the convention, with numerous tutorial and exhibitor seminars. The full-day Live Surround Symposium drew hundreds of participants the day before the convention opening.

OPENING CEREMONY

AES Executive Director Roger Furness opened the convention with a warm welcome to New York. He commented that on the whole this had been a good year, with a large increase in the membership of the Society. He went on to express his sadness at the death of Pat McDonald, executive editor of the *Journal*, who worked for the AES for over 30 years and was an inspiration to many members.

In his introduction AES President Kees Immink also commented on the increase in membership. He highlighted the fact that a large number of the new members were students, showing an encouraging influx of young blood into the Society.

Convention Chair Zoe Thrall thanked her organizing committee for all their hard work in making the convention possible. She explained the convention theme, *The Power of Sound*, as the power to enhance human emotion as well as the power to sell records and concert tickets. She highlighted some of the unique special events at this convention, such as the workshops *Sound for Broadway* and *Design of Technical Systems for Sports Facilities* and pointed out that this was the first AES convention in the U.S. to have a full program of exhibitor seminars. Finally, she said that her aim for the convention was to increase education in audio and to convey the message that the quality of audio engineering is of utmost importance, stating that “simply putting your DAW into record does not make you a recording engineer.”

Roy Pritts, chair of the Awards Committee, announced the AES awards for this convention. Honorary memberships in the Society were presented to Jay Fouts, legal counsel, and Bob Sherwood, financial advisor, for their valuable assis-

tance to AES over many years. For chairing previous AES international conferences and conventions, Board of Governors Awards were presented to Bill Allen (111th Convention), Jyri Huopaniemi (22nd Conference), Theresa Leonard (24th), Per Rubak (23rd), Peter Swarte (110th and 114th), Floyd Toole (113th), and Nick Zacharov (22nd).

Fellowships were awarded to Marina Bosi for her contributions to the standardization of audio and video coding and secure digital content, Arthur Ngiam for his contributions to the development of audio test equipment and high-speed audio duplication, Masaki (Mick) Sawaguchi for his work on spatial recording and reproduction in broadcast, and Nick Zacharov for his contributions to spatial sound perception and subjective audio evaluation. Wes Dooley was presented a Silver Medal Award for his work on developing new techniques and hardware for audio recording.

KEYNOTE SPEECH

The convention keynote speech was given by legendary record producer Arif Mardin, who over the last four decades has produced more than 40 gold and platinum albums and collected 11 Grammy awards. In 1990 he was inducted into the National Academy of Recording Arts and Sciences Hall of Fame. Mardin spoke on the influence of technology on the process of recording and the sound of the music of today. He quoted Marshall McLuhan, who stated that “we shape our tools and thereafter our tools shape us.” Using many examples from history, including the invention of the wheel, the printing press, and photography, he explained how advances in technology can alter an industry, giving examples of both the benefits and the disadvantages.

Audio Engineering Society 5th Convention

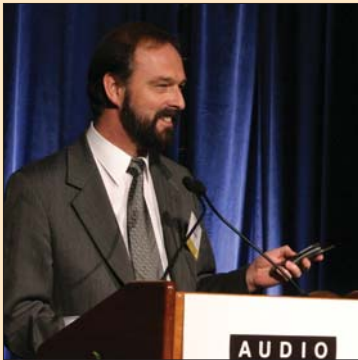
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OPENING CEREMONIES AND AWARDS



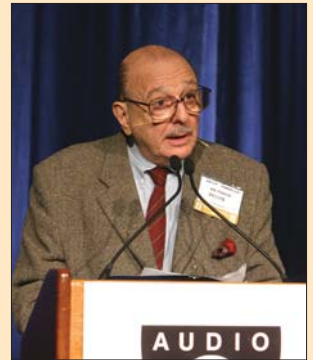
Roger Furness,
AES executive director



Kees Immink, AES president



Zoe Thrall, convention chair



Arif Mardin,
keynote speaker



Roy Pritts, awards chair



Kees Immink, left, presenting Silver Medal Award to Wes Dooley.



Jay Fouts, left photo, and Bob Sherwood receiving Honorary Membership Awards.



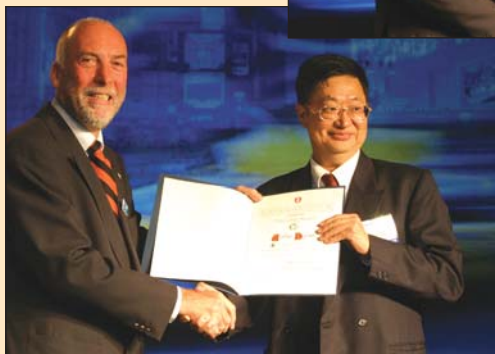
Standing-room-only crowd at the opening ceremonies



Board of Governors Award recipients: clockwise from top left, Bill Allen, Floyd Toole, Theresa Leonard, Nick Zacharov, Peter Swarte, Jyri Huopaniemi, and Per Rubak.



Fellowship Award recipients: clockwise from right, Marina Bosi, Nick Zacharov, Arthur Ngiam, and Koru Itobayashi accepting for Mick Sawaguchi.



Mardin asked rhetorically if modern technology had allowed the audio industry to become obsessed with technical perfection, and if this has removed the soul from recordings. He expanded on this by giving examples from the history of recorded music, including questioning what the great Motown

records would have sounded like if today's technology had been available when they were originally recorded. He also discussed tools such as lip syncing and auto-tune, and if their use in compensating for a poor performer was fraudulent, or if they might be used legitimately to improve on a great

performance. He urged the audience to make the best use of technology—not to make recordings like everybody else, but to make recordings like no one else. Referring to the convention theme, he closed by stating that “the power of sound will never vanquish the power of music.”

TECHNICAL PAPERS

A full and varied program of technical papers was arranged by Jim Johnston. This covered all aspects of audio technology, from game audio through micromachining to low bit-rate audio coding. The sessions on psychoacoustics and perception had a particularly international feel, with a paper on the musical pitches used in South Indian classical music presented by Arvinth Krishnaswamy and a paper on perception of timbre by listeners from a range of ethnic backgrounds presented by Bill Martens. In the session on multi-channel audio Wieslaw Woszczyk gave his thoughts on the potential benefits available with high-resolution audio systems; as frequently occurs whenever this topic is raised, a number of conflicting opinions were voiced in the question and answer session.

A popular session on low bit-rate audio coding focused primarily on developments in MPEG-4 technology. This included aspects from both ends of the quality and bandwidth range, from a paper on lossless coding by Tilman Liebchen to techniques for efficient advanced audio coding presented by Martin Wolters.

One of the more unusual paper sessions at this convention contained invited papers on micromachining. The first of these, by John Neumann, considered the potential audio applications for microelectromechanical systems, including surveillance, hearing aids, directional microphones, in-ear translators, and surround-sound wallpaper. It was explained that there are similar issues in developing microtransducers as with their conventional equivalents, but that the size difference changes the importance of different parameters. Gary Elko presented a paper that showed a microelectromechanical microphone, developed for inclusion within an integrated circuit. As part of his presentation he explained fundamental issues that affected



Speaking at the AES annual business meeting: clockwise from above left, Roger Furness, executive director; Kees Immink, president; Han Tendeloo, secretary; Chris Freitag, Board of Tellers chair, and Marshall Buck, treasurer.



Two of the 17 tutorial seminars at the 115th: Ron Streicher (right) discussing microphones, and a panel discussion (below) on surround sound mixing techniques with, from left, Geoff Martin, Koru Itobayashi, Richard King, and Frank Filipetti.



the design of this unit.

An invited papers session was also held on the subject of audio for games, covering both technical and subjective aspects. On the technical side, papers included “Interoperable Synthetic Audio Formats for Mobile Applications and Games” by Matti Hämäläinen, “Preview: Interactive XMF—A



Mastering workshop panel: from left, Andy VanDette, moderator David Glasser, Roger Talkov, Bob Ludwig, Jonathon Wyner, and Darcy Proper.



Some of the authors who presented papers at the 115th: clockwise from left, Wieslaw Woszczyk, Lidia Lee, Magali Deschamps, Rob Maher, and György Wersényi.



Counterclockwise from above, Ronald Aarts, Don Keele, and Brad Gover were among more than 40 authors who presented poster presentations, which allowed them to explain difficult concepts to listeners one-to-one.



Standardized Interchange File Format for Advanced Interactive Audio Content” by Chris Grigg, and “Interactive Mixing of Game Audio” by Brian Schmidt. A paper on the subjective aspects of game audio, “Computer Games and Multichannel Audio Quality Part 2—Evaluation of Time-Variant Audio Degradations Under Divided and Undivided Attention,” was written by Rafael Kassier, Slawomir Zielinski, and Francis Rumsey.

Other papers sessions included topics such as automotive audio, archiving and restoration, high resolution audio, loudspeakers, and signal processing.

The measurement of loudness, with recent attempts to develop a standardized method, is a controversial topic at the moment. Jeffrey Riedmiller presented a paper that explained that the most relevant factor in broadcast applications is that of the perceived loudness of speech when switching between channels or programs. Gilbert Soulodre presented two papers on the topic. The first of these described subjective tests that were undertaken to judge the loudness of a wide range of items of program material that may be broadcast. The second paper reviewed a number of objective measurement techniques, from simple power metrics to complex proprietary algorithms, and compared these with the subjective evaluations. The results of this investigation were somewhat surprising and controversial. A full listing of all papers and their abstracts and the complete list of convention events begins on page 1215 of this issue. A CD-ROM of all the 115th Convention papers is available for purchase at www.aes.org/publications.

EXHIBITION

The exhibition floor at the Javits Center was crowded and busy throughout the four days of the convention. Over 15,000 visitors enjoyed an exciting range of new products from more than 350 exhibitors (see the complete list of exhibitors starting on page 1210). Below is a summary of a small proportion of the innovative products presented at the 115th.

There were a number of notable developments in the field of live sound. JBL unveiled its new loudspeaker range for large venues, the PD5000 series, which boasts high power output, controlled dispersion pattern, and greater low-frequency extension in a compact cabinet. Martin Audio released a number of new loudspeaker models. The W8LM is a compact line array unit that can be flown or ground stacked in places where space is limited. It uses the array principles from its larger predecessors coupled with an evolution of their hybrid loading technique. The W8LM can be combined with the





From left, Bill Siegmund, special events chair, Zoe Thrall, AES 115th Convention chair, George Massenburg, and Lisa Roy, Platinum Series chair



Jim Johnston (left), papers chair, and Han Tendeloo, program coordinator



From left, Irv Joel, historical events, Phil Ramone, and David Baker, historical events chair



From left, David Bialik, special events (broadcast) chair, Ulrike Schwarz, facilities assistant, and Jim Anderson, facilities chair



Fred Ampel, special events, Live Surround

Tim Casey, facilities for Live Surround, with Maxine Taylor on exhibit floor



new WLX Hybrid subwoofer for greater low-frequency extension. This includes an 18-in driver coupled to a hyperbolic horn at the front and a reflex port at the back. SLS Loudspeakers also announced a new line array loudspeaker, the RLA/3. In common with other products in this range, it includes a ribbon tweeter, which in this case is partnered with a 6.5-in woofer.

Looking at live-sound processing, Apex introduced its Intelli-X equalizer and loudspeaker management rack unit. This offers parametric and graphic EQ, delay, and output limiting options, with flexible crossover and matrix configurations. The routing of the system can be configured in many ways, as any of the four inputs can be routed to any of the eight outputs, allowing its use in a wide range of applications. Lake Technology demonstrated its Contour loudspeaker processor, where the loudspeaker frequency response can be equalized on an intuitive graphical display. This also includes integration with the SIA SmaartLive measurement tool.

The already well populated field of studio monitoring designs was further complemented by new models from Adam Audio, JBL, and Blue Sky International. Adam Audio released the S5V-A, a four-way vertically-oriented studio monitor that incorporates unique folded-ribbon tweeter and midrange drivers. JBL announced the LSR6300 range, which incorporates a number of patented transducer technologies to minimize the detrimental effect on response caused by the acoustical properties of the room. Blue Sky International introduced Big Blue, a three-way midfield monitor featuring dual 8-in hemispherical woofers, a 4-in hemispherical midrange driver, and a 1-in dual concentric diaphragm tweeter.

The convention was host to the release of a number of items



Sam Berkow (right), workshops/tutorials chair, with, from left, Don Keele, David Griesinger, and Jiri Tichy



Lou Manno (left), technical tours chair, with James T. Russell, a pioneer in the development of the compact disc

of outboard processing equipment. Not least of these was the range of new products from Solid State Logic. These are based on the design of the XL 9000 K series mixing console and include the XLogic Channel, XLogic Multichannel Compressor, and XLogic SuperAnalogue Mic Amp. PreSonus introduced its Eureka Class A transformer-coupled microphone pre-amp. This channel strip features variable input impedance as well as a method to simulate tube saturation. It also includes a full-featured compressor and 3-band EQ within a 1U unit.

Yamaha updated its classic range of effects processors with the release of a new model, the SPX2000. This features a number of reverberation algorithms together with other effects such as delays, pitch shifters, and modulators; it also includes the ability to simulate earlier Yamaha models and contains a range of new algorithms.

Rane unveiled a 5-band parametric equalizer, the PEQ 55. This features five bands of fully adjustable parametric EQ, adjustable high-cut and low-cut filters, and a 3-band Accelerated Slope control on each of the two channels. The device can be switched to either dual-mono 5-band processing, mono 10-band processing, or stereo-linked 5- or 10-band processing.

One of the more unusual new products at the 115th was the Liquid Channel by Focusrite. This is a 2U microphone pre-amp and compressor that aims to emulate a large range of classic units. The input impedance of the preamplifier can be varied, and it is possible to switch between a transformer-based or solid-state electronic signal path. A range of compressors have been sampled, and these are simulated using dynamic convolution. The front panel controls are digital,



From left, Don Puluse, Education Committee chair, Dell Harris, education events assistant, and Will Moylan, education events chair

We Thank...

115th Convention Committee

Zoe Thrall
chair

Jim Johnston
papers chair

Lisa Roy
Platinum Series chair

Sam Berkow
workshops/tutorials chair

Lou Manno
technical tours chair

William Moylan
education events chair

Bill Siegmund
special events chair

Dell Harris
education events assistant

Fred Ampel
special events,
Live Surround

David Baker
historical events chair

Tim Casey
facilities, Live Surround

Irv Joel
historical events, other

David Bialik
special events chair,
broadcasting

Jim Anderson
facilities chair

Ulrike Schwarz
facilities assistant

Han Tendeloo
program coordinator

meaning that the parameters can be saved for recall at a later date. The Liquid Channel comes complete with 40 preamplifier and compressor simulations, and more can be downloaded to the unit via a USB interface.

The rapidly expanding market of software plug-ins for digital audio workstations (DAWs) generated the release of a range of new products. Among these were innovations from SRS Labs, TASCAM, MOTU, and Eventide. SRS Labs introduced a new VST plug-in for encoding and decoding a multi-channel mix of up to 6.1 channels to and from a 2-channel delivery format with its SRS Circle Surround VST Pro. TASCAM launched a convolution-based reverberation and microphone simulator VST plug-in named GigaPulse. This can sample an electronic or acoustic system such as a room, vintage EQ, or microphone, and the sample can then be ➡

applied within a DAW to simulate the measured system. The software allows the user to modify the measured response, allowing the reverberation decay to be stretched. It also has an option to sample a room in a number of positions and to switch between or combine positions. MOTU unveiled the MX4, a virtual instrument plug-in designed for a range of software applications. This includes a wide range of synthesis types, including subtractive, wavetable, FM, AM, and emulation of analog devices. Eventide released two new plug-ins for the TDM platform. The Eventide Reverb includes halls, chambers, plates, rooms, and Lo-Fi effects. Each reverb type offers three-band stereo parametric equalization both before and after the reverb, reverb contour for built-in tone shaping, a pair of delay lines with filters, as well as a compressor. The Eventide Octavox Harmonizer is a diatonic pitch shifter that can be used to create anything from stacked harmonies and choirs to musical rhythmic sequences.

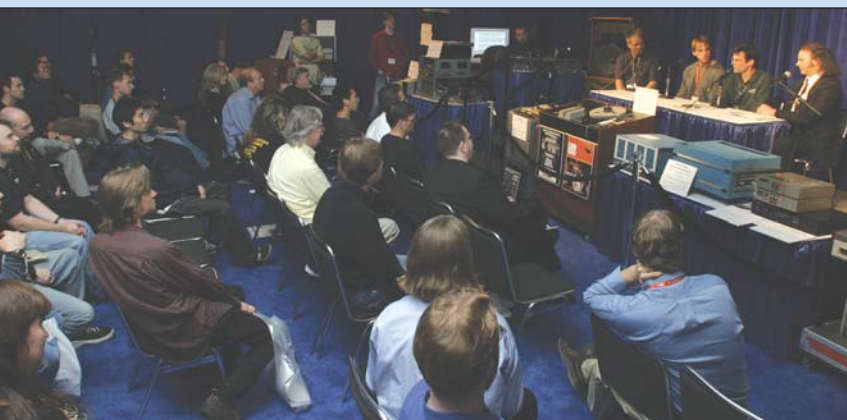


Four of the many Special Events at the 115th: counterclockwise from left, Kurt Graffey at the Surround Live Symposium; a panel discussion at one of the many Vinyl Goes Digital sessions; AES President Kees Immink at the GRAMMY Soundtable; and the Platinum Engineers panel, from left Jeff Joseph Puig, Mark Ronson, Tony Brown, moderator Ron Fair, and Cory Rooney.

At the front end of the audio signal chain, a number of new microphone models were launched at the convention. Audio-Technica unveiled the AT3060, a tube microphone that can be phantom powered, removing the need for a separate power supply. This is a large-diameter condenser microphone with a cardioid directivity pattern, which is said to deliver high sensitivity with low overall noise levels. A short shotgun microphone was introduced by Sanken; the CS-1 is a compact model designed for mounting on cameras or use on a boom pole.

Mackie unveiled its new digital console, the dXb. This can run at up to 192-kHz sampling rate and can have up to 72 inputs and 72 outputs. Other features include dual integrated touch screens, internal DSP, automation, and FireWire I/O option cards for streaming audio to and from a computer. There is also the possibility for users to run select VST plug-ins internally without the need for a separate computer. Roland launched two new keyboard workstations: the Fantom-S and Fantom-S88 include synthesis, sampling, and mixing, together with a USB port for transferring data to and from a computer. Otari introduced its DR-100 hard-disk recorder that features 48-track recording at up to 24-bit resolution with a sampling rate of up to 48 kHz or 24-track recording at up to 24-bit resolution with a sample rate of up to 96 kHz. The unit is based on the Linux operating system and includes a range of editing features.

Panasonic showed its new in-car DVD-Audio system that was designed in collaboration with well-known engineer Elliot



Scheiner. Attendees could listen to the system in a new Acura TL on the exhibition floor.

House Ear Institute and the Audio Engineering Society cosponsored hearing screenings that were available to all attendees throughout the convention. This was intended to raise awareness among audio professionals of the importance of safe listening practices in order to prevent permanent loss of hearing.

For the first time at an AES convention in the U.S., the exhibition was supported by a series of exhibitor seminars that allowed manufacturers to explain aspects of their products in greater depth to participants. Seminars were given on DVD-Audio and SACD, networking technology (Digigram, Calrec, Yamaha, and BridgeCo), loudspeaker technology (JBL and Genelec) and a range of other topics by D. W. Fearn, Earthworks, Plangent Processes, Audio Precision, Infinium, Manifold Labs, SABRA-SOM, and Fraunhofer. Digidesign, with support from Microsoft, provided a series of white-paper forums on ProTools and its integration with Windows XP and Windows Media Audio.

MEETINGS, TECHNICAL COUNCIL EVENTS

Mark Yonge, Standards manager, coordinated an extensive program of meetings throughout the convention devoted to AES Standards work. And many AES committees held meetings during the 115th. The day after the convention the AES Board of Governors (see page 1208) discussed policy and planning.



Digidesign and Microsoft sponsored 19 white-paper forums.



Panel discussion on Super Audio CD, Bob Dylan SACD Reissue Project, was one of 17 exhibitor seminars.



Ray Kurzweil, second from left, gave the Richard C. Heyser Memorial Lecture. He is flanked by, from left, Wieslaw Woszczyk, Technical Council chair, and vice chairs Bob Schulein and Jürgen Herre.



Over 350 exhibitors displayed new products at the 115th.

The AES Technical Council and Committees held numerous meetings throughout the convention, during which plans were made for future conferences and events. The Technical Council also hosted the 9th Richard C. Heyser Memorial Lecture, given by Ray Kurzweil, a pioneer in optical character recognition, speech synthesis, music synthesis, and speech recognition.

Kurzweil gave an enthralling and inspirational lecture on his predictions for future technological advances. He gave a number of examples of technology that showed an exponential development trend, including computer processing power, data storage capacity per dollar, the falling cost of DNA sequencing, data transfer speeds, and the number of internet hosts. He also gave examples of state of the art technology, such as the creation of artificial blood cells and an amusing demonstration of a virtual female pop star controlled by his movements and with vocal processing to modify his voice to sound female. He predicted that by 2015 readily available computing power will be equivalent to a mouse brain, and by 2020 this will be equivalent to a human brain. He went on to predict that by 2010, computers will have evolved to include projection into the eye, which will allow the beginnings of virtual reality and augmented reality. Finally, he predicted that by 2029 the human brain would be reverse engineered, the Turing test would have been passed, and nonbiological systems would be able to combine the best of human intelligence (including



AES Meetings

- 1 Regions and Sections: from left, Subir Pramanik, chair, Roger Furness, Søren Bech, and Peter Swarte.
- 2 Standards: Standards Manager Mark Yonge, right, with Ted Sheldon.
- 3 Technical Council: Wieslaw Woszczyk (center), chair, and vice chairs Jürgen Herre (left) and Bob Schulein.
- 4 Publications Policy Committee: from left, Emil Torick; Dick Small, chair; John Eargle, and Mark Gander.
- 5 Conference Policy Committee: Theresa Leonard, Geoff Martin, and Søren Bech, chair.
- 6 Education Committee: from left, Don Puluse, chair; John Monforte, Annemarie Staepelaere; Markus Erne; and Ron Streicher.

pattern recognition) and computing (including access speed, accurate and large memory, and near-instantaneous knowledge sharing).

WORKSHOPS AND TUTORIAL SEMINARS

Sam Berkow, workshop and tutorial seminar chair, organized a full program of events that drew together expert panelists from all parts of the audio industry. The workshop format allowed for audience participation, which led to a lively debate on the topic of digital audio workstations in a session chaired by David Malekpour, where the benefits and limitations of various systems were considered in detail and numerous tips were shared. There was a focus on live sound, with workshops on audio system design for sports facilities, sound for Broadway, and loudspeaker line arrays. The new technical committee on semantic audio hosted a workshop chaired by Mark Sandler that helped to explain the scope of the committee; examples were given of applications in speech recognition, music information retrieval, and automatic generation of metadata. Other workshops covered a wide range of topics including audio for games, aftermarket products for automobiles, and DVD authoring.

The Society continued to fulfill its educational mission with a range of tutorial seminars that included introductory sessions and master classes for all convention attendees, from students to the most experienced professionals. A range of "All About..." tutorials informed the attendees on such topics as compressors, equalizers, A/D converters, stage monitoring, computer interconnections, and time-domain measurements. Some of the most popular sessions gave tips on surround sound microphone and mixing techniques. The last afternoon of the convention saw a mammoth session on listening test methodology, which included tutorials on a wide range of techniques and an overview of the most widely used standardized methods.

VINYL GOES DIGITAL

The Historical Committee, led by David Baker and Irv Joel, put together *Vinyl Goes Digital*, a fascinating series of presentations that covered more recent audio history, focusing on the advent of digital technology. A large number of experienced practitioners gave their views on the transition from analog to digital production tools, and there were a number of sessions that examined possible future digital formats.

SPECIAL EVENTS

The 15th annual GRAMMY Recording Soundtable discussed the unique technical challenges of this year's GRAMMY show, the first to be broadcast in High Definition with discrete 5.1 surround sound. Randy Ezratty, Robert Seidel, Murray Allen, Rocky Graham, and John Harris with moderators Phil Ramone and Hank Neuberger explained the process that was undertaken to put on this groundbreaking production. Among the items discussed were the importance of the simultaneous stereo mix and the problems of delivering the 5.1 sound via numerous distribution companies to consumers. In the Platinum Producers session Tony Brown, Jack Joseph Puig, Mark Ronson, Cory Rooney, and moderator Ron Fair



Education activities: clockwise from left, Dell Harris, Education Events assistant, flanked by Marie Desmarteau (left), student chair, and Felice Santos-Martin, student vice chair; industry veterans mentored students one-on-one; numerous schools and colleges had booths at the Education Fair.

discussed the effect that modern technology has had on producers, including the freedom that is afforded by computer-based recording and the effect that this has had on the psychology of the performance. The Platinum Engineers session chaired by Bobby Owsinski saw Mick Guzauski, Angela Piva, Nathaniel Kunkel, and Jack Joseph Puig discuss how music recording techniques have changed recently, both for better and worse.

There was a special focus at the 115th on broadcast technology, with sessions on audio processing for broadcast, digital broadcast technology, and the redesign of the New York broadcasting network following the loss of the World Trade Center facilities. Other sessions included a fascinating insight into the selection of the first fifty recordings to be in the National Registry of Recorded Sound. Attendees heard George Massenburg, together with Peter Alyea, Samuel Brylawski, and Elizabeth Cohen, describe the purpose and scope of this project, together with the criteria used to select the recordings.

Sound for Pictures featured Ken Hahn, Andy Kris, Dan Lieberstein, and Dominic Tavella discussing the unique problems involved in the world of film and television. They shared insightful and amusing stories from their work and gave demonstrations to accompany their thoughts.

TECHNICAL TOURS

Louis Manno, technical tour chair, provided the convention attendees with a stimulating range of options to visit some of the prime audio centers of New York. Visits were arranged to a number of recording studios, including Sync Sound, Avatar, and Hit Factory. In the sound for picture arena, there was opportunity to visit Kaufman Astoria Studios and the upgrade to High Definition at the Ed Sullivan Theater. Other

technical tours included visits to Alpine Tower, Loew's Jersey Theater, and the vinyl pressing plant of Brooklynpheono.

STUDENT ACTIVITIES

Education Events Chair Will Moylan, with the assistance of Dell Harris, organized a number of activities specifically for students. For the first time at an AES convention there was a Design Project Competition where students could show their skills at creating audio tools, including loudspeaker designs, electronic circuits, and software. There was also a Recording Competition, which included categories for classical, jazz/folk, and pop/rock as well as surround classical and nonclassical.

Students were invited to sign up for one-on-one mentoring sessions with distinguished members of the audio industry. At the Education Fair, institutions publicized their courses through the display of literature and academic guidance sessions. The Education Forum gave an opportunity for educators, authors, and students to discuss the programs of the Education Committee and to give input to future events. At the Student Delegate Assembly meetings new officers were elected and design and recording awards were presented.

The 115th AES Convention provided a program of events to suit every audio professional and covered all aspects of the industry, from examples of the latest technology to informative and educational tutorials and discussions. There was also ample time for the delegates to relax and meet in an informal setting. Social events such as the AES Mixer Party gave attendees the opportunity to catch up with old friends as well as make new ones to the accompaniment of a live jazz band. The city of New York once again was an electric backdrop to an exciting and fulfilling convention, and attendees can now look forward to the upcoming conventions next year in Berlin in May and San Francisco in October. Details of future activities can be found at www.aes.org/events. ➔