AES 119th Convention

2005 October 7–10

Jacob K. Javits Convention Center, New York

The AES 119th Convention in New York was an amazing event, with an exciting atmosphere and record numbers in every measure. The exhibition featured 452 exhibitors, the largest ever for an AES convention, and the floor was packed with over 20,000 attendees, another AES record.

OPENING CEREMONY

Roger Furness, AES executive director, and Theresa Leonard, AES president, announced the official opening of the convention and welcomed the overflow crowd. Convention Chair Jim Anderson thanked the committee members for all their outstanding contributions.

Kees Immink, Awards Committe chair, announced the members being recognized for outstanding work in the Society and within the industry. Three individuals received Board of Governors Awards for outstanding contributions to the Society: John Grant for chairing the AES 25th International Conference, John Strawn for chairing the 117th Convention, and Zoe Thrall for chairing the 115th Convention. Bob Moses received the Fellowship Award for significant contributions to audio network design theory and practice.

Zoe Thrall then gave an eloquent introduction to Rupert Neve, the 119th keynote speaker. Neve related the events and forces that shaped his long, illustrious, and still-active career, keeping the audience enthralled. He discussed with great humility the motivation for developing his many ground-breaking designs that have set standards for high-quality sound recording and other audio equipment.

TECHNICAL PROGRAM

This convention had the largest range of events of any conven-

tion so far. The papers, posters, tutorials, workshops, master classes, and live sound events covered every aspect of the audio industry.

Jim Johnston, papers chair, put together an impressive program of 16 lecture sessions and four poster sessions. Two of the lecture sessions were devoted to loudspeaker technology, and featured discussions of a range of modeling techniques, including finite element modeling, the boundary element method, and radiated soundfield analysis. A particularly interesting paper in these sessions, presented by David Gunness, discussed processing a loudspeaker input signal to optimize the overall system transient response. It was concluded that a number of factors cannot be easily corrected in this way, for example any factors that were time-invariant or nonlinear, such as diaphragm breakup and limited driver excursion, and physical parameters that may vary over a production run of drivers. However, the side-effects of driver phase plugs, horn resonances, cone resonances, and crossover phase problems could be corrected using the discussed techniques. The practical application of this work was apparent in the lecture presentation rooms, as the PA loudspeakers made use of this technology.

Spatial audio was covered in the sessions on multichannel sound and spatial perception and processing. Jörg Wuttke gave an interesting summary of the relative pros and cons of a wide range of surround sound microphone techniques, consider- ➡

Opening Ceremonies and Awards

Roger Furness,
AES executive director

Theresa Leonard, AES president

Jim Anderson, convention chair

Zoe Thrall (left) introduced keynote speaker Rupert Neve to an overflow crowd at the opening ceremonies.
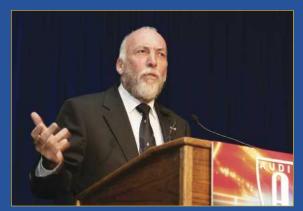

ing issues such as crosstalk between the channels and downmix to stereo. At the other end of the signal chain, Thomas Sporer presented a paper on a subjective evaluation of algorithms for downmixing 5.1 surround sound to stereo. The results showed that the preferences were somewhat dependent on the properties of the audio extracts and somewhat on the listening position, meaning that one algorithm was not universally preferred.

An inspiring paper, presented by members of the CIPIC Interface Laboratory, discussed the challenges faced when trying to apply head-tracked binaural techniques to personal music players. The authors considered the issues of converting recordings to a suitable format for head-tracked binaural audio, the limitations in data bandwidth that mobile audio devices will impose, and the problems of extracting movements of the head relative to the body from the other movements made by a walking listener. Through the use of the

motion-tracked binaural recording technique discussed in previous papers, reducing the data rate by restricting the range of head movements taken into account and using common HF information, and time averaging of the head movement data, a practical low-cost solution was suggested that uses the equivalent of 2.5 audio channels.

The program of tutorial seminars, organized by Bob Moses, included an incredible 25 sessions on topics from surround sound, through the audio capabilities of next-generation game consoles, to DSP in digital amplification. The tutorials started with *The Acoustics and Psychoacoustics of Loudspeakers in Small Rooms* by Floyd Toole. He focused on the difficulties posed by the interaction between the reproduction room and the loudspeaker, including fascinating insights such as the way in which we adapt to the acoustics of a room.

Two tutorials were given by Anthony Grimani on the design of project studios. These included a wealth of practical advice,

Kees Immink, awards chair

Theresa Leonard presenting Fellowship Award to Bob Moses

Board of Governors Award winners: top to bottom, John Grant, John Strawn, and Zoe Thrall

from how to position the equipment and loudspeakers for the best acoustical and ergonomic results, to acoustic treatment to lessen the annoyance to the neighbors next door.

David Moulton gave a fascinating tutorial about technical ear training. A full house heard him talk about the value of critical listening skills and the problems of fooling ourselves about what we hear. The attendees were given a number of exercises that helped to develop their critical listening skills and that demonstrated what is possible with ear training and how it can be undertaken.

The 15 workshops, organized by Alan Silverman, started with *Surround Sound: A Chance for Enhanced Creativity*. A packed auditorium heard a number of leading proponents of surround sound production discuss a range of projects that use 5.1 audio in different ways, from conventional front-biased orchestral recordings to dramatic and surrounding film mixes. The workshop included demonstrations of these recordings,

and there was an opportunity for the attendees to hear these extracts in more detail in a more favorable acoustical environment later during the convention.

Another workshop, *What's Shakin' You?*, discussed the issues involved in combining audio with haptic stimulation (the sense of touch). This covered different situations, such as feedback from interfaces used for remote control of devices and the reproduction of vibrations to enhance the cinematic experience. Other workshops covered disparate topics such as *New Issues in Audio–Video Synchronization*, *Audio Networking Applications and Requirements*, and *Next Generation Audio Communications*, all of which gave attendees the opportunity to participate in detailed discussions of these subjects.

A new feature for this convention was a series of master classes, arranged by Alan Silverman. These consisted of talks by Terry Manning, Doug Sax, Oliver Archut, John Klett, and Bob Clearmountain on their specialist subjects of record- ➡

ing, mastering, vintage equipment, studio maintenance, and mixing respectively. These world-renowned industry veterans discussed their progression through the industry, shared tips and insider information, and talked in detail about their previous projects.

Mary Falardeau and John Kilgore put together a series of events focused on live sound. These events kicked off with a tutorial on sound design for Broadway musicals. It proved to be a highly interactive session, with the chair and audience setting real and hypothetical questions for the panel to discuss, including the challenges of limited budgets and the problems of trying to create a sense of intimacy with a large sound system in a large room. Other live-sound events included sessions on wireless microphones, intercom in large events, and the problems of touring. A particularly lively tutorial discussed a range of methods for tuning the live-sound system within a room. The panelists agreed that more than one microphone position should be used to ensure that any results are not

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

unique to the given position. However, some recommended a large array of microphones for making measurements, while others suggested that this would be too expensive and complicated, instead recommending the use of a few portable ➡

Among the presenters of the 25 tutorial seminars were: clockwise from right: Bill Whitlock, Ronald Prent and Jeff Levison, Alex Case, Mick Sawaguchi, Poppy Crum, Anthony Grimani, and John Strawn.

One of 15 workshops at the 119th was *Academia Meets the Industry: The Future of Audio and Music Research*. The panel was comprised of, from left, Xavier Amatriain, Nicola Bernardini, Morton Lave, John Strawn, William Martens, Karsten Nielsen, Rob Maher, Karlheinz Brandenburg, and Peter Eastty.

microphones.

A full listing of the entire 119th program starts on page 1196. A complete list of 119th papers is listed on the order form inserted with this issue; and papers can be purchased online at http://www.aes.org/publications/ preprints. Audio recordings of most of the 119th sessions are listed on another form inserted with this issue, and MP3 CDs or audio cassettes can also be purchased online at http://www.confer encemediagroup.com.

HEYSER LECTURE

The Richard C. Heyser Memorial Lectures are given at each convention by eminent individuals in audio engineering and its related fields. At this convention the lecture was given by Jozef Zwislocki, a leading researcher into hearing and the auditory system. His talk covered the mechanisms and physiology of the auditory system, through the components of the outer, middle, and inner ear, to the way in which audio is converted into neurological impulses and passed onto the brain. He spent a while discussing the possible mechanisms that the inner ear may use to analyze the frequency content of audio signals, examining the way in which there appears to be active feedback to increase the resolution of the system. He also discussed the nonlinearity of the ear, such as the compression of the signal caused by the cochlea, which means that our perception of the loudness of a signal is not linearly related to sound pressure. Throughout the presentation he emphasized how amazing our hearing system is, stressing that it is delicate and needs to be protected. He finished by demonstrating an unusual hearing protector, which makes use of resonant tubes to conduct acoustic energy away from the ear canal across the most critical range of audio frequencies.

Some of the authors who presented papers at the 119th: clockwise from top left, Brahim Hamadicharef, Koji Fujiyama, Roland Jacques, KiHyun Choo, Gilbert Soulodre, Wolfgang Ahnert, Michael Makarski, and Bozena Kostek.

The 119th technical program included a large number of poster presentations; they included papers by, clockwise from above, Delphine Bard, Sunil Bharitkar, Dan Barry, Duane Wise, and Kyeongok Kang.
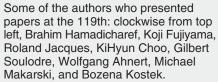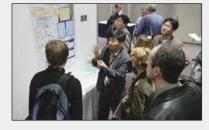
EXHIBITION

The exhibition hall was packed throughout the convention, with a dynamic and exhilarating atmosphere. Most of the exhibitors were showing exciting new products, with a large number of remarkable developments.

A plethora of new microphones were unveiled at the convention, covering a wide range of applications. Schoeps showed off its first ever shotgun microphone, the CMIT 5U. This includes three types of built-in EQ: high-frequency emphasis to increase speech intelligibility and to compensate for attenuation caused by certain windscreens; high-pass filtering to suppress wind and handling noise; and a gentle low-requency filter to compensate for the proximity effect.

DPA Microphones introduced a new version of its well-known 4006 omnidirectional microphone. The new model, the 4006-TL, is a transformerless design, which increases the sensitivity of the unit as well as providing a response down to lower frequencies. This modification is also available for retrofitting to existing 4006 units.

Some of the 119th Convention Committee gathered at the opening ceremonies: from left, top row, Ulrike Schwarz, Felice Santos-Martin, Zoe Thrall, Charlie Post, Yujin Cha, and Dottie Kreps; bottom row, David Bialik, Irv Joel, Harry Hirsch, Jim Anderson, Bob Moses, Jim Johnston, and Lou Manno.

Royer Labs, well known for its ribbon microphones, introduced the R-122V, a limited production model that incorporates vacuum tube active electronics. The active circuitry is designed to provide a constant and known impedance to the ribbon element of the microphone. CharterOak Acoustic Devices also showed a new vacuum tube microphone. The S600 is a large-diaphragm condenser microphone with a cardioid directivity pattern, and it is designed to capture a wide range of instruments.

Blue Microphones showed its Snowball microphone, which features a USB connection so that it can be plugged directly into a computer. It is a condenser microphone that is switchable between cardioid and omnidirectional polar pattern. It takes the power for the microphone capsule, preamplifier, and analog-to-digital converter from the USB bus.

At the other end of the signal chain, a number of new loudspeaker products were on show. JBL used the convention to launch its LSR4300 range of studio monitors, which include a number of interesting features. The built-in room-mode correction system aims to overcome low-frequency problems caused by the interaction between the loudspeaker and the room. In addition, Harman has developed a network protocol that allows the properties of the loudspeakers, such as the equalization, to be remotely controlled and adapted from a PC.

A new studio monitor was also shown by Klein + Hummel. The O300D is a three-way active design that incorporates a molded front baffle designed to reduce resonances and act as a waveguide to the drivers.

One of the biggest events in the exhibition was the launch of Pro Tools version 7 by Digidesign. Functional developments in this new version include increased support for MIDI sequencing, such as improved integration with virtual instruments, region looping for assembling backing tracks, and real-time timing quantization of input MIDI data. Other advances include more efficient use of the available processing power and reorganization of the menu system for easier use.

Dolby introduced its new Media Producer software, which includes encoding and decoding utilities for a wide range of formats including Dolby Digital, Dolby Digital Plus, Dolby TrueHD, and MLP lossless. These tools support current formats such as DVD-Video and DVD-Audio, as well as upcoming formats such as HD DVD and Blu-Ray.

A new product by Lexicon blurred the division between software and hardware products. The MX200 reverberation and effects processor can be used as a conventional standalone unit in studio and live-sound applications. In addition, it features a USB interface and VST plug-in architecture that allows it to be used via a graphical interface directly from a compatible digital audio workstation.

With the release of the X-Rack dynamics package, Solid State Logic added to its range of XLogic outboard processing equipment. This offers up to eight dynamics modules within a single 4U rack unit, each including variable ratio, threshold, and release controls together with options for RMS or peak detection and fast or slow attack speed options.

Fairlight unveiled its Constellation-ANTHEM console, a product that combines a recording/mixing console with a multitrack recorder/editor. This can be configured in a number of modes, including split (using separate sections for recording and monitoring/playback), in-line (using the same sections for recording and monitoring/playback), and Constellation (a mode for postproduction and editing in common with other Fairlight products).

A large number of small outboard processing units were

We Thank…
119th Convention Committee

Jim Anderson
chair

Zoe Thrall
vice chair

Jim Johnston
papers chair

Alan Silverman
workshops and master
classes chair

Bob Moses
tutorial seminars chair

**Mary Falardeau and
John Kilgore**
live sound events cochairs

David Bialik
broadcasting events chair

Charlie Post
platinum panels on-site
producer

Michael McCoy
facilities chair

Ulrike Schwarz
facilities cochair

**Dottie Kreps and
Felice Santos-Martin**
education events cochairs

Lou Manno
technical tours chair

Harry Hirsch
historical events chair

Yujin Cha
volunteers coordinator

Han Tendeloo
program coordinator

Alan Silverman,
workshops and master
classes chair

John Kilgore and Mary Falardeau,
live sound events cochairs

Han Tendeloo, program
coordinator

Jim Anderson (left), convention chair,
and Mike McCoy, facilities chair

Yujin Cha (far left), volunteers coordinator, with just a few of her large contingent of volunteers.

also on display at the convention. Rupert Neve Designs launched the Portico 5032 microphone preamplifier and EQ unit. It is a half-rack-width design and includes low and high shelf filters, a single parametric filter, and a variable-frequency high-pass filter. Weiss showed its DNA1, a real-time audio restoration device, which includes processing to reduce noise, clicks, and crackles, as well as algorithms to enhance the ambience of recordings. Atlas Pro Audio introduced two new products. The REQ-2.2 is a two-channel EQ unit that uses passive components, and the DCS-2.2 is a compressor that includes two compressor types within a single unit.

Drawmer introduced the interestingly named Three-Sum processor. This device splits a stereo input into two or three frequency bands with variable cut-off frequencies, which are output from the device to external processing units. The processed signals can then be recombined into a stereo signal by routing them back through the Three-Sum processor. This allows multiband processing, such as compression, in situations where specific multiband devices are not available.

In addition to the large number of audio recording products on show at the convention, there was also a wide range of products for the live-sound market.

ATC introduced a new powered PA loudspeaker, the ➡

Fred Ampel coordinated Surround Live III, the live sound symposium at the Grand Ballroom of the Manhattan Center Studios the day before the opening of the convention. From left, Bob Doyle on the Digico console and panelist Riccardo Mazza; Bob Doyle, Mike Pappas, and Fred Ampel; live music was performed by, from left, Gary Carter, Teresa, and Tim Veazey.

An Afternoon with Ray Dolby: Moderators Barry Fox (left) and Paul Gallo (right) interview Ray Dolby.

1. Platinum Engineers: from left, Jack Joseph Puig, Bob Clearmountain, and Jason Corsaro
2. Platinum Producers: from left, Jack Joseph Puig, David Kahne, and John Shanks.
3. Platinum Surround: Nathaniel Kunkel

PA65. This has been developed from ATC's experience in designing active studio monitors. It's a three-way model containing a 200-W amplifier for the bass driver, a 100-W amplifier for the mid-range, and a 50-W amplifier for the tweeter. It claims a horizontal coverage of ±80 degrees and a maximum sound pressure level of 116 dB.
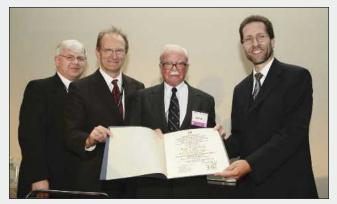
Renkus-Heinz showed a new range of loudspeakers, the CF/CFX series. The CF range includes integrated digital amplification, and the CFX range is designed for use with external processing and amplification. The series includes a range of products with differing power outputs and driver options, as well as a wedged-shaped unit for stage-monitor applications.

New loudspeakers were also shown by Community, which demonstrated its new range of installation loudspeakers, the iBOX iHP3500 series. These are all three-way systems, con-
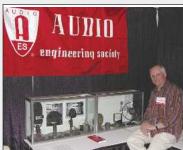

Grammy Soundtable participants: from left, Maureen Droney, executive director, Producers & Engineers Wing, the Recording Academy; moderator Dave Adelson; Michael Caplan, Or Records founder and president; Susan Butler, Billboard Magazine legal and music publishing editor; Glenn Lorbecki, P&E Wing cochairman; Terry Lickona, Recording Academy chairman; Robert Hurwitz, Nonesuch Records president; George Massenburg, producer and engineer; and Theresa Leonard, AES president.

Josef Zwislocki (second from right), 119th Heyser Memorial Lecturer, receives commemorative certificate from Bob Schulein (left), Wieslaw Woszczyk, and Jürgen Herre.

The AES New York section had a booth at the 119th where attendees could relax and catch their breath before returning to the rest of the exhibits, and Malcolm Addey, section chair, was on hand with a display of his vintage microphone collection.

Exhibitor seminars and training sessions (22 in total) drew enthusiastic audiences.

The cast of the radio drama performed live at the 119th: clockwise from front right, Marion Seldes, Himan Brown, Russell Horton, Michael Wager, David Saviet, Paul Hecht, and Bob Calliban.

David Bialik (DKB Broadcast) introduces panelists at the Digital Radio Broadcast Forum: from left, David Layer (NAB), Mike Lyons (Ibiquity Digital), Leonard Kahn (Kahn Laboratories), Skip Pizzi (Microsoft), Jan Andrews (NPR), Mark Kalman (Sirius), Tony Masiello (XM Radio), Don Spragg (Continental Electronics), and Dave Wilson (Consumer Electronics Association).

sisting of a 15-inch bass driver, an 8-inch mid-range driver, and a 2.87-inch high-frequency compression driver, though the products differ in terms of the radiation pattern. This range is complemented by the i118S and i215LVS subwoofers, the former consisting of a single 18-inch driver and the latter consisting of two 15-inch drivers.

An interesting trend seen at the convention was the increasing proliferation of small portable recorders based on solid-state memory. TASCAM unveiled its new two-channel recorder, the HD-P2, which records to the Compact Flash memory format. It includes XLR microphone inputs, which feature phantom power and a limiter, as well as a SMPTE timecode input for synchronization to external devices. The recorded format is Broadcast WAVE, which can include the SMPTE time information for simple compilation of takes. A FireWire interface is also included for transfer of the material to other devices.

Nagra showed another solid-state device that records either linear PCM or MPEG data-compressed audio to 1 GB of built-in flash memory. The ARES-M includes a built-in microphone and loudspeaker, with the option to plug in an external micro-phone. It also offers instant start-up, one-button recording, and automatic level control.

HHB took the small portable recorder concept a step further, and introduced the FlashMic, a new microphone that incorporates a built-in digital recorder. The microphone part is a Sennheiser condensor capsule with an omnidirectional directivity pattern, and this is combined with a solid-state recorder that can record either linear PCM or MPEG data-compressed files to the 1 GB of flash memory. The recorded data can then be transferred to another device via the built-in USB interface.

Sony also showed an integrated unit including microphones and flash-memory-based recording. The PCM-D1 includes a pair of condenser microphones in a cross-pair configuration, and 4 GB of built-in memory together with MemoryStick removable memory.

EXHIBITOR SEMINARS AND TRAINING SESSIONS

The 31 exhibitor seminars at the 119th allowed attendees to get a more detailed overview of specific products and their features. Digidesign gave a series of seminars devoted to the details of its mixing technology, an introduction to version ➡

AES MEETINGS

1 Historical Committee: Irv Joel, vice chair, and Jay McKnight, chair

2 Regions and Sections: Subir Pramanik (top) and Roy Pritts, cochairs

3 Education Committee: from left, Felice Santos-Martin, Dottie Krepps, and Jason Corey, chair

4 Strategic Advisory Group: Nick Zacharov, chair, Søren Bech, Wieslaw Woszczyk, Peter Swarte, John Vanderkooy, and Marshall Buck

5 Publications Policy Committee: from left, Roger Furness, Jay McKnight, Louis Fielder, and Dick Small, chair

6 Technical Council: Wieslaw Woszczyk (center), chair, and vice chairs Jürgen Herre (left) and Bob Schulein

7 Conference Policy Committee: Søren Bech, chair, and Mercedes Onorato

8 Standards (SC-02-02): Mark Yonge (far right), standards manager, and Richard Chalmers (far left), Standards Committee chair

7 of Pro Tools, and a tutorial on the basics of using Pro Tools for new users. Yamaha held a number of seminars on the mLAN FireWire-based transmission protocol, the DM2000 mixing desk, and the Active Field Control system, an artificial reverberation system for enhancing room acoustics. Other seminars were given by Zenph on its system for recreating piano recordings, Renkus-Heinz on the new EASE acoustic prediction software version, Wavefront Semiconductor and BridgeCo on their individual FireWire interface products, Cakewalk on the benefits of modern CPU architectures, RPG on its new acoustic treatment products, M-Audio on software-based synthesizers, and Lectrosonics on wireless microphone technology.

The training sessions featured Dolby-sponsored discussions of the next-generation consumer disk formats, HD DVD and Blu-Ray. These discussed the capabilities of each format, together with the structure, authoring, and replication issues that the creation of each will entail. The Guitar Center ran a series of clinics that featured a range of equipment, such as the Mackie DXB, the Digidesign MBox 2, and the Presonus ADL 600. The Manhattan Producers Alliance hosted sessions on audio for games and music production for film and TV. Sound & Communication Magazine gave presentations on installation best practices.

SPECIAL EVENTS AND MEETINGS

The convention hosted the annual GRAMMY Soundtable, at which a number of industry luminaries discussed how to counter the marked downturn of CD sales over the last five years. Based on experience with large and small companies, as well as the business and creative sides of the industry, the panelists shared their methods for staying in business during these changing times, agreeing to some extent that flexibility was the key to success, as the conventional business channels have

EDUCATION EVENTS

1. Audience at student recording competition
2. Education Forum panelists, from left, Stephen Ward, John Krivit, Jason Corey, Richard McIlvery, Elliot Schiener, and Ed Cherney.
3. Eric Rudnicki (left), one of many students receiving awards and prizes in the recording completion, accepts loudspeaker from Will Eggleston of Genelec and certificate from Jason Corey, AES Education Committee chair.
4. From left, Jon La Grou, George Massenburg, and David Josephson, design competition judges, listen to the presentation of Philip Lipscomb, who received 1st Prize.
5. Career Fair

digital radio systems were discussed. This included a range of techniques, some of which aimed for backwards compatibility with existing standards, and others of which required large-scale upgrading of the broadcast and receiver components. The challenges of broadcasting surround sound were also the topics of two other broadcasting sessions. One considered how to design facilities for the recording, mixing, and transmission of 5.1 surround sound, while the second gave suggestions on how to cope with live surround sound mixing for broadcast.

There was an active program of events specifically for students (see photos on this page), which included mentoring sessions, recording competitions for stereo and surround for all styles of music, career and education fairs, and a design competition for audio projects. (For more information on student events see Education News starting on page 1251.)

The Historical Committee again put on a fascinating array of events under the leadership of Harry Hirsch, historical events chair. The historical program included a live audio drama, a discussion of the grand recording studios of New York, a commemoration of the 70th anniversary of Major Armstrong's first public demonstration of FM broadcasting, and films about Tom Dowd and George Antheil.

Lou Manno, technical tours chair, organized a program of 11 visits to NY recording and performance venues. The Technical Council and Standards Committee both had extensive schedules of meetings throught the convention. The AES Board of Governors met (see next page) the day after the convention.

The AES 119th Convention garnered superlative kudos from attendees and exhibitors. The lively and enthusiastic mood on display at the 119th showed beyond a doubt that the industry is healthy and vibrant, and there is much to look forward to at the AES 2006 conventions in Paris (May 20-23) and San Francisco (October 6-9).
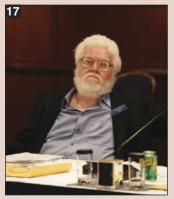
almost completely disappeared.

The Platinum Engineers session involved a discussion of mixing techniques, drawing on the vast experience of the assembled panel. The topics ranged from equipment preferences to capturing a specific sound. One member of the panel mentioned that he was regularly asked by young engineers why they couldn't get their mixes to sound like his; he commented that if they could achieve his sound without his many years of experience then he might as well retire.

One of the special sessions was an *Afternoon with Ray Dolby*. Dolby was interviewed about his life in the audio industry, covering his many ground-breaking contributions to technology in noise reduction, surround sound reproduction, and even x-ray analysis.

A range of sessions specifically discussing broadcast sound were arranged by David Bialik. During one of these, a number of competing methods for broadcasting surround sound over

Board of Governors Meets

The AES Board of Governors met on October 11 to hear reports from AES officials and standing committees:

1 Han Tendeloo, secretary; Theresa Leonard, president and Future Directions Committee chair; Jim Anderson, USA/Canada Eastern Region vice president and 119th Convention chair

2 Søren Bech, Europe Northern Region vice president and Conference Committee chair; Wieslaw Woszczyk, Technical Council chair and incoming president-elect

3 Richard Chalmers, Standards Committee chair; David Murphy, incoming International Region vice president

4 Bozena Kostek, Europe Central Region vice president; John Vanderkooy, editor and governor; Ronald Aarts, governor

5 Ron Streicher, past president and Nominations Committee chair

6 Roger Furness, executive director; Bob Moses, USA/Canada Western Region vice president; John Strawn, incoming governor

7 Mercedes Onorato, Latin American Region vice president; Garry Margolis, governor

8 Marshall Buck, treasurer, Convention Policy Committee chair, and Finance Committee chair

9 Peter Swarte, governor

10 Student representatives: Felice Santos-Martin, Daniel Orejuela, and Daniel Hojka

11 Ivan Stamac, Europe Southern Region vice president; Jason Corey, Education Committee chair; Andres Mayo, incoming Latin American Region vice president

12 Subir Pramanik, Regions and Sections Committee cochair

13 Neville Thiele, International Region vice president

14 Jay McKnight, Historical Committee chair; Roy Pritts, Regions and Sections Committee cochair; Steven Harris, incoming governor

15 Neil Gilchrist, president-elect

16 Nick Zacharov, Strategic Advisory Group chair

17 Jerry Bruck, governor

18 Kees Immink, governor and Awards Committee chair

19 Richard Small, governor and Publications Policy Committee chair; Jay Fouts, legal counsel

20 Louis Fielder, treasurer-elect

21 Chris Freitag, Tellers chair

22 Jim Kaiser, incoming USA/Canada Central Region vice president; Ulrike Schwarz, governor; Frank Wells, USA/Canada Central Region vice president