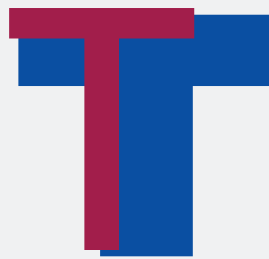


AES 113th Convention

2002 October 5–8

Los Angeles Convention Center
Los Angeles, California, USA





o no one's surprise, the sun was shining brightly throughout the days of the AES 113th Convention held October 5–8 in Los Angeles, illuminating the positive outlook of the audio industry after a difficult year. The combination of a large number of exhibitors and delegates together with a wide range of new products and excellent technical events indicates an industry in good shape growing stronger.

OPENING CEREMONIES

The opening of the convention commenced with a welcome from Roger Furness, executive director of the AES, who was glad to see that so many people had come to attend the convention in spite of the sunny weather outside. He introduced AES President Garry Margolis, who said that it was an honor and a pleasure to be the president of the Society during a challenging and rewarding year. He proclaimed the AES to be a forward-looking society and hinted that exciting new developments are in the pipeline.

Floyd Toole, 113th Convention chair, discussed the convention theme: "Science in the Service of Art." He praised the audio industry as a marvelous enterprise and explained that this was shown perfectly by the diversity of activities within the convention: from the events hosted by the Historical Committee to the innovative products and software in the exhibition. But he warned that without art the business would die, and he saluted the artists who would be performing in the Songwriters Showcase throughout the convention.

Next the presentation of awards was overseen by David Robinson, the Awards Committee chair. Citations were awarded to Elmar Leal for many years of outstanding work in South America, culminating in the formation of the Latin America Region, and Roland Tan for his work in Southeast Asia and the formation of the Singapore Section. Board of Governors Awards were presented to Roy Pritts and Ron Streicher for cochairing the 109th Convention in Los Angeles in September 2000. AES Fellowships were awarded to Durand Begault for his contributions to our understanding of spatial hearing and its applications, Gilbert Soulodre for his significant contributions to procedures for subjective testing of audio systems, and Carson Taylor in recognition of lifelong contributions to the art and science of music recording techniques.

The keynote speech was given by Leonardo Chiariglione of the Telecom Italia Lab. He offered further examination of the convention theme by discussing the effect of new distribution technology on the industry and the art. He compared the repercussions of sharing MP3 files on the Internet with the changes brought about by the advent of radio and recording technologies. He outlined the tension currently created by the differing opinions of the consumers, who usually want free access to any content in a form that can be manipulated and transferred to any device, and the distributors, who want to retain control of the publishing mechanism and need a financial return on content. Encouraging both sides in the dispute to take a step back from confrontation, he proposed a solution based on open access to protected content. This solution is ➤

OPENING CEREMONIES AND AWARDS



Leonardo Chiariglione, 113th keynote speaker



Roger Furness, AES executive director



Garry Margolis, AES president



Floyd Toole, 113th Convention chair



David Robinson, Awards Committee chair, announces award recipients.



Garry Margolis presents Citation Awards to Elmar Leal, left photo, and Roland Tan.

based on interoperable technology making readily accessible content easy to distribute and requiring that the consumer obtain the right to play the content. He expanded on this by telling of his dream that any person has the opportunity to create art, distribute it, and gain just reward for it. He believes that the technology to achieve this is available and it is time to make technology and content friends of mankind. He concluded by saying that “unless people get value from their art, they can’t make it. All artists should have means to produce their art and receive remuneration.”

Toole concluded the opening ceremony by thanking his

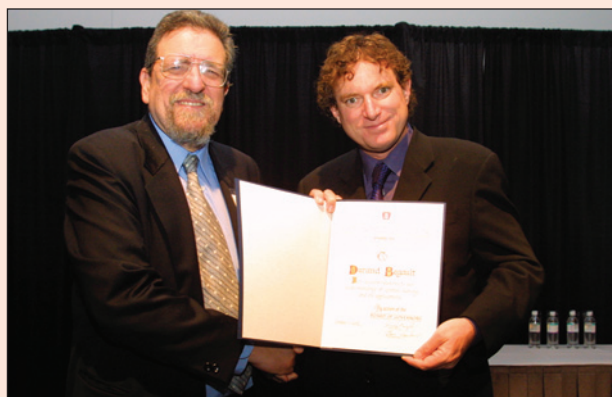
convention committee for their dedicated efforts that made the convention possible, and asked the audience to go out and enjoy the results of that hard work.

EXHIBITION

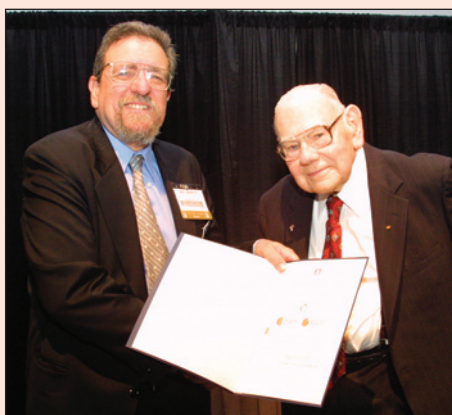
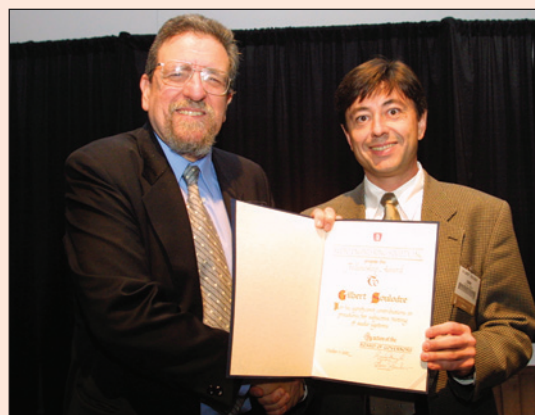
There was a very positive atmosphere on the exhibition floor throughout the convention, with the quality and quantity of the attendees beating the expectations of exhibitors. Of prime importance was the fact that the audience included a large number of the industry’s key decisionmakers. The format of the exhibition also allowed for the attendees to talk at length



Roy Pritts, left photo, and Ron Streicher receiving Board of Governors Awards.



Fellowship Awards recipients: counterclockwise from left, Durand Begault, Gilbert Souldre, and Carson Taylor.



with the product manufacturers and give valuable feedback.

Numerous exciting new products were displayed at the convention. A small number of these are summarized here, and a full list of exhibitors begins on page 950 of this issue.

One focus of the convention was on live sound, with two workshops on line arrays, a roundtable of live sound engineers discussing the latest trends, techniques, and tools in modern sound reinforcement, and a large number of new products from the major manufacturers. In addition to the workshops on line array loudspeakers, Meyer Sound, JBL, SLS, McCauley Sound, and Electro-Voice all showed their

line array products. JBL introduced three new VerTec models aimed at medium and small sound reinforcement applications, designed to give high output power and quality within a lightweight package. Meyer Sound also exhibited compact line array units, with their M1D and M2D products. Electro-Voice used the convention to launch its XLC range of compact line-array loudspeakers designed to meet the challenges of difficult acoustical environments. SLS Loudspeakers also introduced its new compact line array product, the RLA/2 that includes dual 8-inch woofers and a high-frequency ribbon driver.

Renkus-Heinz demonstrated an interesting combination of technologies for the live-sound market with the incorporation of the Ethernet-based CobraNet audio distribution system into their ST-STX loudspeaker range. They claim that this allows improved signal quality, minimal data loss, and precision remote control over long distances, together with networking and interoperability with a range of other products incorporating CobraNet. Continuing this theme, Neutrik showed a range of professional EtherCon Ethernet RJ45 connectors built within a standard XLR casing in order to better cope with the stresses of the professional audio environment.

At the other end of the live sound signal chain, Audix demonstrated its new D6 kick drum microphone that was developed from detailed analysis of the sound of a large number of drums. Audio-Technica launched a range of live-sound instrument microphones, including the

AE5100 and the AE3000, which are large diaphragm condensers, and the AE2500, which combines condenser and dynamic elements within one microphone.

A large number of significant new software releases were announced at the convention. Steinberg launched version 2.0 of Nuendo, featuring a reengineered 32-bit floating-point mixer, enhanced routing options (including surround sound up to 10.2 channels) and new networking capabilities over TCP/IP. Digidesign announced version 6.0 of ProTools for Mac OS X, including a cleaner user interface, improved MIDI facilities with support for the OS X CoreMIDI en- ➔

gine, and the ability to take advantage of dual-processor Macintosh G4 computers. SADiE unveiled its Series 5 products, based on a newly designed hardware platform. This includes four new products that encompass authoring and editing for either PCM or DSD technologies, with the option of up to 8 channels.

Plugzilla is a unique product that combines the traditionally separate realms of computer-based and outboard processing. This is a stand-alone 2U unit which runs VST software plug-ins. It contains two independent machines that will run up to eight plug-ins simultaneously and has enough processing power for up to 16 channels of reverberation. The parameters of the plug-ins are accessed via the front-panel rotary controllers, MIDI, USB, and assignable foot switches.

The Virtual Mixer from the Virtual Mixing Company was another unique product. Acting as a front end to a MIDI-controlled system, it allows tracks or MIDI instruments to be mixed in a visual environment where the instruments are positioned in space according to their pitch, level, and panned position. The mix can then be manipulated visually using a mouse or a touch screen.

Continuing the popular trend for multichannel surround sound production, a number of innovative new products were released at the convention. Fostex showed a 6-channel location recorder that records directly onto DVD-RAM disks and includes microphone preamplifiers and time-code features. Lexicon demonstrated updates to the 960L processor, including an automation option and LOGIC7 up-mixing algorithms to create 5-channel surround sound from 2-channel stereo. TASCAM exhibited a surround sound monitor controller, the DS-M7.1, which is designed to add multiloudspeaker monitoring control to consoles with limited output busses.

The exhibition floor also contained a large number of small



Speaking at AES annual business meeting: clockwise from above left, Ron Streicher, secretary; Garry Margolis, president; Marshall Buck, treasurer; and Chris Freitag, Board of Tellers chair.



stands exhibiting specialist products. These included manufacturers of outboard recording equipment, such as compressors and microphone preamplifiers. Anthony De-Maria Labs showed a number of tube compressors that are

based on classic designs. Universal Audio unveiled a new channel strip, the 6176, which combines a microphone preamplifier with a

compressor in a single unit, providing vintage character with modern specifications.

Finally, a number of microphone products were shown at the convention, though not all were new designs. Most notable among these was the Telefunken Ela-M 251, a reissue of the classic tube microphone that is hand built to original specifications using the same methods used to make the original version 40 years ago. With the mixture of cutting-edge and classic, the exhibition contained something for every audio professional.

PAPERS SESSIONS

Papers cochairs Eric Benjamin and John Strawn organized sessions at the 113th Convention that covered the advanced audio research being performed across a wide range of topics. Based on the number of papers presented in each area, it appears that the themes of psychoacoustics, low bit-rate coding, signal processing, and the design and measurement of transducers are those currently of greatest research interest.

A number of papers were related to the measurement of loudspeaker drivers. One such paper by Siegfried Linkwitz investigated the loudspeaker parameters that are of greatest importance. He argued that volume displacement, intermodulation distortion, stored energy, and off-axis frequency response all need to be tightly controlled, and that the importance of phase linearity and cabinet diffraction are



Author Siegfried Linkwitz presenting paper.



Multichannel demo room at 113th allowed presenters to demonstrate new theories with 5.1-channel samples.



Van Webster (left), facilities chair, and Floyd Toole, convention chair



Marshall Buck (center), workshops chair, flanked by workshops assistants David Sheirman (left) and Bejan Amini



Papers cochairs John Strawn (left) and Eric Benjamin



Ron Streicher (right), special events cochair



From left, Theresa Leonard, education events chair, Elliot Scheiner, renowned producer, and Scott Cannon, education events assistant



From left, historical events cochairs Dale Manquen and Wes Dooley, and Eric Gaskell who assisted with *When Vinyl Ruled* exhibit.



From left, Mel Lambert, special event cochair and technical tours cochair, Lisa Roy, Platinum Series chair, and Roger Furness, AES executive director

sometimes exaggerated. Other papers in this field were on topics such as techniques for measuring the amplitude response of loudspeaker systems in domestic environments by Allan Devantier and methods for interpreting nonlinearity measurements of transducers by Alexander Voishvillo, Alex Terekhov, Gene Czerwinski, and Sergei Alexandrov.

The sessions on signal processing included papers on filter morphing by Rob Clark, Emmanuel Ifeakor, and Glenn Rogers, sound synthesis by genetic programming by Ricardo Garcia, and noise shaping in test-signal generation by Stanley Lipshitz, John Vanderkooy, and Edward Semyonov. There was also a paper by Frank Siebenhaar, Christian Neubauer, Robert Bäuml, and Jürgen Herre on audio watermarking based on a Scalar Costa Scheme, which allows the inclusion of higher data rates within the watermark for em-



Floyd Toole (left) and Bob Lee, signs chair



Shelley Herman (left), chair of *The Jazz Singer*, and Ken Lopez, volunteers coordinator



Han Tendeloo, program coordinator



Peter Chaikin (right) technical tours cochair with Rich Tozzoli



Claudia Koal, music chair, with Gordon van Ekstrom



Ken Lopez (center), volunteers coordinator, with 113th volunteers

We Thank...

Floyd Toole
chair

Eric Benjamin John Strawn
papers cochair

Marshall Buck
workshops chair

Bejan Amini David Scheirman
workshops assistants

Mel Lambert Ron Streicher
special events cochair

Lisa Roy
Platinum Series chair

Theresa Leonard
education events chair

Scott Cannon
education events assistant

Wes Dooley Dale Manquen
historical events cochair

Van Webster
facilities chair

Peter Chaikin Mel Lambert
technical tours cochair

Claudia Koal
music chair

Shelley Herman
chair, *The Jazz Singer*

Bob Lee
signs chair

Han Tendeloo
program coordinator

Ken Lopez
volunteers coordinator



Marla Egan (right), producer for Platinum Series, with Lisa Roy

bedding such things as song lyrics or pictures.

Multichannel sound and spatial audio appeared frequently within the sessions mentioned above, as well as in a separate session on multichannel sound. Listener envelopment in surround sound was investigated in a paper by Gilbert Soulo-dre, Michel Lavoie, and Scott Norcross, based on applying measurements developed for concert hall acoustics. Other papers in the session on multichannel sound included an investigation of the interchannel interference from multiple loudspeakers at the listening position and its relationship to microphone technique by Geoff Martin, the effect of early reflections on localization by Jason Corey and Wieslaw Woszczyk, an approach for synthesizing surround sound from mono and two-channel stereo by Ching-Shun Lin and Chris Kyriakakis, and an investigation of loudspeaker ar-

rangements for creating a diffuse sound field by Koichiro Hiyama, Setsu Komiyama, and Kimio Hamasaki.

Further papers sessions included *Room Acoustics and Sound Reinforcement*, *High Resolution Audio*, *Recording and Reproduction of Audio*, and *Audio Networking and Automotive Audio*. Individual papers presented at the convention can be purchased at www.aes.org/publications/preprints, and a CD-ROM with all the 113th Convention papers is also available. A full list of paper titles and abstracts begins on page 954 of this issue.

WORKSHOPS

The workshops, organized by Marshall Buck with the assistance of Bejan Amini and David Scheirman, provided an interesting mix of the current issues facing the industry. ➡



Jim West (second from left), who gave Richard C. Heyser Memorial Lecture at 113th, receives citation from Wieslaw Woszczyk (left), Technical Council chair, and vice chairs, Robert Schulein and Jürgen Herre (right).



Quantity and quality of attendees exceeded exhibitors' expectations.



Vintage equipment displayed at *When Vinyl Ruled* exhibit.



Stereo and Surround Microphone Techniques was one of 15 well-attended workshops.

In addition to the usual lively discussion sessions, this convention continued the recent trend of an increasing number of tutorial workshops featuring recognized experts in their respective fields.

Surround sound and multichannel audio continued to be a popular topic at this convention. The first workshop was *Stereo and Surround Microphone Techniques*, chaired by Geoff Martin. Despite the early start of this workshop, a large crowd attended to hear the panel discuss microphone techniques that are applicable to a wide range of genres. The session opened with an informative presentation by Martin on the basic theories behind simple microphone arrays, with

the summary that it is most important for engineers to trust their ears and adapt the available techniques to the particular situation. John Eargle then gave a historical view of stereo and surround microphone techniques, before Doug Botnick, Michael Bishop, Richard King, and Mick Sawaguchi discussed how they apply the available techniques to their own productions.

There was a standing-room-only crowd for *Mixing and Mastering in Multichannel Surround*, chaired by Michael Bishop. The first presentation was by Bob Ludwig, who explained the challenges of mastering in surround sound, including advice on the use of the LFE channel. John Eargle described the way in which he simultaneously mixes for surround and stereo, referring to the problems of producing stereo from the surround mix by downmixing. Frank Filipetti discussed the problems of creating a multichannel product from a stereo mix, and encouraged record companies to specify how multichannel mixes were created. Finally, the opportunities provided by multichannel surround sound were explained by George Massenburg and Elliot Scheiner. Massenburg described it as a "sandbox" as he talked about why he enjoyed surround mixing, and Scheiner explained that, "there are no rules, but you have to maintain the integrity of the music when you redo it in surround."

In addition to these two workshops on multichannel surround sound, there was also *The Application of Multichannel Sound Formats* ➔



Attendees were able to sample advanced automotive audio systems.

113TH SPECIAL EVENTS

1. Platinum Producers Panel 1: from left, Ben Grosse, Tal Herzberg, Rob Cavallo, moderator Mitch Gallagher, Ron Fair, and Mike Elizondo.

2. Platinum Producers Panel 2: from left, Larry Levine, Michael Bradford, moderator Howard Massey, Phil Ramone, Patrick Leonard, and Bob Ezrin.

3. Road Warriors Panel: from left, Kirk Kelsey, David Morgan, Greg Dean, moderators Steve Harvey and Clive Young, and Paul Gallo.

4. GRAMMY Recording Soundtable: AES President Garry Margolis welcoming audience and panelists, from left, Ken Jordan, George Massenburg, Jack Joseph Puig, moderator Howard Massey, Elliot Scheiner, Brian Garten, and Al Schmitt.

5. An Afternoon with...Tom Holman: Tom Holman (left) and moderator George Petersen.



in *Vehicles*, chaired by Richard Stroud, and *Coding of Spatial Audio*, chaired by Christof Faller. The surround sound workshops were enhanced by the availability of a multi-channel reproduction system in a small room which enabled the presenters to demonstrate their recordings in a more acoustically suitable environment. Other demonstrations relating to the workshops program included some automobiles with multichannel audio systems.

As part of the promotion of new areas of audio technology within the AES, the 113th Convention included the workshop *Game Audio*, with presentations by experts from a range of sections of the computer game industry. Topics covered the use of surround sound in video games, issues in programming audio for games, and the audio capabilities of the Xbox. Also included was a discussion of

how to enter the game audio industry.

Loudspeaker technology received significant attention, with *Large Signal Loudspeaker Parameter Measurement*, chaired by John Stewart, and the two-part *Loudspeaker Line Arrays*, chaired by Jim Brown and John Murray.

The other workshops covered a wide range of topics: *New Media for Music*, chaired by Dave Davis; *What Audio Engineers Should Know About Human Sound Perception*, presented by Durand Begault and William Martens; *AES 42-2001*, chaired by Stephan Peus; *Studio Production and Practices*, chaired by George Massenburg and David Smith; *Perceptual Issues Related to Cascaded Audio Codecs*, chaired by Thomas Sporer; *Protecting Your Hearing Against Loss*, chaired by Dilys Jones and Sigfrid Soli; and *Recent Developments in MPEG-4 Audio*, chaired by Jürgen Herre.

HEYSER LECTURE

The Richard C. Heyser Memorial Lecture was presented at this convention by James E. West, coinventor of the modern electret microphone. His lecture focused on its development and the unique applications of this technology to a wide range of technical areas. He started by reviewing the history of the technology, from the first experiments with electrets in the 15th century to the early electret microphones used by the Japanese in World War II. He went on to explain that the problem with these electrets was that they were wax-based, which caused their characteristics to be dependent on the atmospheric conditions and limited their lifespan to about six months.

The main achievement of West and his colleagues at Bell Labs was the discovery of stable charge storage in thin polymers and using them in microphone technology. West explained that whereas condenser microphones might be the best choice for some applications, electret microphones can be used in a wider range of situations, such as compact arrays.

West demonstrated the use of electret microphones together with signal processing for use in telecommunications. He showed an audio and video clip of the use of four microphones to obtain a second-order directional response to reduce background noise. This was followed by a demonstration of the use of signal processing to adapt for the distance between the mouth of the talker and the microphone array. In this case, the variations in the level and the frequency response caused by varying the talker-microphone distance were compensated based on analysis of the audio signals reaching each of the microphones in the array. West also demonstrated how this technology was adapted for special applications, such as communications in motor racing to overcome the high ambient noise levels in race cars.

In conclusion, West described the use of electret microphones in arrays of up to three dimensions. This enables their use in a wide range of applications, from reducing background noise for speech recognition, through steered directivity for amplifying audience questions, to recording and reproducing 3D sound.

In addition to the lecture, the Technical Council was busy throughout the convention with committee meetings that covered a wide range of topics. The AES Technical Committees review trends in audio technology and practice and provide expertise to the Society, such as suggesting topics for workshops and conferences, publishing technical documents, and collating written papers and audio demonstrations on important topics. More information on the Technical Council and the Committees can be found at www.aes.org/technical.



Among many artists who performed at Songwriters Showcase: top to bottom, Severin Browne and James Coberly Smith, Deni Bonet, Vinx, and Tim Janis.



113TH MEETINGS

1. Technical Council: from left, Jürgen Herre, vice chair, Wieslaw Woszczyk, chair, Bob Schulein, vice chair.
2. Publications Policy Committee: from left, Daniel von Recklinghausen, Emil Torick, and Garry Margolis.
3. Standards Committee: Mark Yonge (left) and John Nunn.
4. Historical Committee: Jay McKnight and Dale Manquen.
5. Regions and Sections Committee: Subir Pramanik.



SPECIAL EVENTS

The program of special events at the convention included the 14th annual GRAMMY Recording Soundtable, two Platinum Producers sessions, and a Road Warriors Panel. Those who attended the Recording Soundtable heard Phil Ramone, Ken Jordan, George Massenburg, Jack Joseph Puig, Elliot Scheiner, and Al Schmitt discuss how they cope with the challenges of the recording industry. In the first Platinum Producers session Rob Cavallo, Mike Elizondo, Ron Fair, Ben Grosse, and Tal Herzberg, with moderator Mitch Gallagher, discussed trends in engineering and producing, such as how the traditionally separate roles of producer, engineer, and studio technician are starting to blend into one.

In the second Platinum Producer session Howard Massey moderated a discussion with panelists Michael Bradford, Bob Ezrin, Patrick Leonard, Larry Levine, and Phil Ramone on the past, present, and future of the recording industry. Continuing the theme of the keynote speech at the opening ceremony, they discussed the difficulties of creating and distributing new and possibly commercially risky music. They noted that less risks are being taken with new artists in the current business climate, meaning that the songs produced are becoming more and more similar. They briefly touched on the possibility that new methods of distribution could help this situation, but might also lead to the problem of not getting an adequate financial return.

On Tuesday Paul Gallo introduced the Road Warriors Panel of Kirk Kelsey, David Morgan, Greg Dean, and moderators Steve Harvey and Clive Young, who discussed the latest trends, techniques, and tools in the live-sound industry.

To commemorate the 75th anniversary of the first successful talking picture, on Sunday evening the convention was host to an old-time radio recreation of *The Jazz Singer*. The show featured Richard Halpern in the starring role made famous by Al Jolson, along with a supporting cast that included AES President Garry Margolis. Convention Chair Floyd Toole commented that this event exemplified the convention theme, "Science in the Service of Art," as the production was art at its highest.

Throughout the convention attendees had the opportunity to take advantage of free hearing screening cosponsored by the AES and the House Ear Institute in response to a growing interest in hearing conservation and to heighten awareness of the need for hearing protection and the safe management of sound.

The Historical Committee again put on a number of demonstrations and talks, as well as an exhibition of production technology during the age of vinyl, organized by Wes Dooley and Dale Manquen. The presentations included Carson Taylor discussing location recording from the 1950s to the 1970s and a review of 12 landmark microphones by Jim Webb. Other presentations covered topics such as vinyl disk mastering, record manufacturing, the development of powered monitors, and the development of mixing console technology.

The Art part of the convention theme was on display at the Songwriters Showcase held in the main entrance area of the convention center. Attendees had the chance to listen to a wide range of live music performed throughout the four days of the convention. The music continued each evening at mixer events, which allowed the convention attendees to meet in a relaxed social atmosphere.

Other special events at the convention were: "An Afternoon with...Tom Holman," in which moderator George Petersen interviewed Holman about his career in audio; the SPARS Business Panel; and there were sessions on technical areas that are currently of interest such as Audio Post Production in 24p HDTV and The Virtual Studio: DAW-Based Recording.

EDUCATION EVENTS

Numerous education events also took place, arranged by Theresa Leonard and Don Puluse with the assistance of Scott Cannon and members of the student delegate assembly. The program gave students the opportunity to present their own work, including paper and poster sessions for technical work and a recording competition for practical work. For the first time a number of the educational events were included in the main convention workshop program,



113th Education events: counterclockwise from top right: Education Fair, Mentoring Panel, students anxiously await start of Recording Competition, and Stereo and Surround Microphone Techniques workshop.



dak Theater, the Hollywood Bowl, and Platinum Live. A final event included a tour of the newly completed Cathedral of Our Lady of the Angels. This event was held in combination with the American Institute of Organ Builders, and included lectures on the new 105-rank, 6,019-pipe organ. This visit concluded with a recital by AES organist-in-residence Graham Blyth. He performed works by Soler, Franck, Messiaen, Bach, and Viern on the new organ to an enthusiastic audience.

AES COMMITTEE MEETINGS

The various committee meetings that help to keep the Society running were held in the days before, during, and after the four days of the convention.

The meetings of the Standards Committee commenced under the administration of Standards Manager Mark Yonge and Standards Committee Chair John Nunn two days before the convention began. As part of the mission of the committee to develop standards relating to current practice and technology in professional audio, there were discussions on a wide range of topics, including digital audio, forensics, listening tests, file transfer, and measurement. The convention also saw the launch of the new website and email facilities for the Standards Committee to help develop the electronic communication of the working groups. For more information see www.aes.org/standards.

Other Society meetings were held throughout the convention. Following the convention the AES Board of Governors (see next page) met to discuss the issues facing the Society and to consider aspects of policy and planning.

Attendees left the convention with insights, possibilities, ideas, and inspiration in their chosen field and about the industry in general. Now they can look forward to the next European convention, the AES 114th to be held March 22–25, 2003 in Amsterdam. For more information on this and other Society activities, visit the AES website at www.aes.org.

these being the workshops on multichannel microphone techniques and mixing and mastering in surround sound mentioned above. It turned out that these events were also popular with nonstudents, resulting in some of the most highly attended events of the convention.

There was also a strong focus on mentoring. This enabled students to meet and talk to a number of respected audio engineers from a wide range of backgrounds, both in a group situation and in one-to-one sessions. The Education Forum hosted a discussion about the issues facing education in audio engineering, and enabled those involved in education to meet and share opinions. At the Education Fair attendees were able to learn more about the course offerings in audio at numerous colleges and universities.

TECHNICAL TOURS

Peter Chaikin and Mel Lambert organized a fascinating range of technical tours to complement the other convention activities. There were tours of a number of the leading recording studios in the Los Angeles area, including Sunset Sound Studios, Glenwood Place Studios, Capitol Recording Studios, and Cello Recording Studios. Tours were also organized to a number of performance venues including the Ko-



Board of Governors Meets

Meeting on October 9, members of the AES Board of Governors gather from around the world to hear reports from AES officials and standing committees:

- 1** Kunimara Tanaka, incoming governor
- 2** Daniel von Recklinghausen, editor; Marina Bosi, governor; Roger Furness, executive director
- 3** Theresa Leonard, governor and 24th International Conference chair; John Nunn, Standards Committee chair
- 4** Annemarie Staepelaere, governor; Roland Tan, governor; Markus Erne, Europe Central Region vice president
- 5** Jim Anderson, USA/Canada Eastern Region vice president; Curtis Hoyt, incoming governor
- 6** Marshall Buck, treasurer, Convention Policy Committee chair, and Finance Committee chair; Karl-Otto Bäder, governor
- 7** Mercedes Onorato, Latin American Region vice president; Daniel Zalay, Europe Southern Region vice president
- 8** Juergen Wahl, governor; Neville Thiele, International Region vice president



9 Scott Cannon, student representative, Roy Pritts, past president and Nominations Committee chair



10 Han Tendeloo, incoming secretary; Wieslaw Woszczyk, Technical Council chair



11 Jay Fouts, legal counsel; Richard Small, Publications Policy Committee chair

12 Jay McKnight, Historical Committee chair; Subir Pramanik, Regions and Sections Committee chair

13 Bob Sherwood, financial advisor; Nick Zacharov, governor

14 Bob Moses, USA/Canada Western Region vice president; James Kaiser, USA/Canada Central Region vice president



15 Søren Bech, Europe Northern Region vice president and Conference Policy Committee chair

16 Garry Margolis, president, Future Directions Committee chair, and Women in Audio Committee acting chair; Ron Streicher, secretary and incoming president elect



17 Don Puluse, Education Committee chair and incoming governor; David Robinson, governor and Awards Committee Chair

