WELCOME 129

AES CO

Your Bridge to the Future

4–7 November 2010

**Moscone Convention Center,
San Francisco California**

Converging once again on San Francisco, the audio engineering community presented itself in fine form at the Moscone Center for the AES 129th Convention, November 4–7. The technical program offered one of the largest ever line-ups of educational, practical, and research events, and tracks aimed specifically at product design, live sound, game audio, and broadcast and media streaming. Thanks to hard-working convention cochairs Jim McTigue and Valerie Tyler and their stellar convention committee, over 14,000 delegates who made their way to sunny northern California enjoyed a superb educational and technological feast. The exhibition segment of the convention showcased the products and services of over 300 exhibitors who were keen to demonstrate the latest in audio technology to eager visitors.

OPENING CEREMONIES AND AWARDS

Roger Furness
AES executive director

Diemer de Vries
AES president

Jim McTigue
convention cochair

Bob Moses
Awards Committee chair

Bob Margouleff delivered the keynote address to a large, enthusiastic audience at the opening ceremonies.

Ron Streicher, right, received the Distinguished Service Medal from Diemer de Vries.

Francisco Miranda Kirchner received the Fellowship Award.

OPENING CEREMONIES

Opening the 129th Convention to a capacity hall, executive director Roger Furness thanked convention cochairs McTigue and Tyler and their committee for their many months of preparation, culminating in an outstanding event. AES president Diemer de Vries was pleased to note that the "champions of audio engineering" came to San Francisco hot on the heels of the "champions of baseball," as the previous day the city had hosted a victory parade and celebration for the San Francisco Giants, winners of the 2010 World Series of baseball. He reminded visitors that this convention would indeed fulfill the promise of its theme, *Your Bridge to the Future*. Jim McTigue rose to thank his all-volunteer committee for the sterling work they had put in to deliver the 129th Convention, which was now officially open.

The Society regularly rewards those who have done exceptional work in the field of audio engineering, or for the Society itself, in the form of its awards. John Vanderkooy, editor of the *AES Journal*, opened the awards proceedings by presenting the AES Publications Award to Stefan Feistel, Ambrose Thompson, and Wolfgang Ahnert for their paper "Methods and Limitations of Line Source Simu-

lation," published in the June 2009 issue. The 129th Convention Student Technical Papers Award went to cowinners Tobias Ritter for "Modeling Viscoelasticity of Loudspeaker Suspensions Using Retardation Spectra" (paper 8217, coauthor is Finn Agerkvist), and Tejaswi Nanjundaswamy for "Perceptual Distortion-Rate Optimization in MPEG AAC" (paper 8288, coauthors are Vinay Melkote, Emmanuel Ravelli, and Kenneth Rose).

The Board of Governors Award, given for outstanding contributions to the Audio Engineering Society, was presented to Eddy Brixen for chairing the 39th International Conference, *Audio Forensics: Practices and Challenges*, in 2010; to Joel Viera de Brito for chairing the 3rd AES Latin American Conference, *Audio for HDTV and Beyond*, in 2009; to Josh Reiss for chairing the 128th Convention in

Board of Governors Award recipients: from left, top row, Eddy Bøgh Brixen, Joel Vieira De Brito, and Josh Reiss; 2nd row, Agnieszka Roginska, John Strawn, and Alan Trevena; right, Valerie Tyler

Below left, Tobias Ritter (2nd from left) and Tejaswi Nanjundaswamy (3rd from left) were cowinners of the AES 129 Student Technical Paper Award. They are flanked by Veronique Larcher and Rob Maher, 129th papers cochairs.

Stefan Feistel, left, received the AES Publications Award for his paper "Methods and Limitations of Line Source Simulation" (JAES Volume 57 Issue 6 pp. 379–402) from Diemer de Vries and editor John Vanderkooy. The paper's coauthors are Ambrose Thompson and Wolfgang Ahnert.

London; to Agnieszka Roginska for chairing the 127th Convention in New York; to John Strawn and Valerie Tyler for cochairing the 125th Convention in San Francisco; and to Alan Trevena for chairing the AES 36th International Conference, *Automotive Audio—Sound in Motion*, in 2009. The prestigious Fellowship Award was presented to Francisco Miranda Kirchner, for many years chair of the Mexico Section, in recognition of his significant contributions to AES activities and professional audio education in Latin America. The Distinguished Service Medal was presented to Ron Streicher in recognition of more than three decades of dedication, leadership, and service to the AES. Among his many roles over the years, Ron has served as both president and secretary of the society, as well as having been active in numerous roles for the Los Angeles Section committee.

The AES was delighted to welcome Bob Margouleff as keynote speaker for the 129th opening ceremonies. Margouleff, who began his career working as a synthesist, went from working on jobs such as the "Crazy Daisy Toilet Paper" advertising campain to working with Stevie Wonder among other well-known artists. Expanding on his theme, "What the Hell Happened?" he suggested "MP3 was the beginning of the end of the record business," but despite this "what the hell is happening is mostly good." We have moved from a push market to a pull market and from broadcasting to narrowcasting, so the business has completely changed. "It sure is democratic, but it sure is noisy out there," he said, referring to the ease with which almost anyone can bring their music to an interested market using the Internet. Sounding a warning, however, Margouleff pointed out that a whole generation of

Three of the 129th Broadcast panels were, top row, Broadcast Facility Design (B-1) with, from left, Jim Servies, Bill Jarett, Bob Skye, John Storyk, and Keith Hanadel; middle row, Lip Sync Issue (B-3), from left, Paul Briscoe, Pat Waddell, Dave Wilson, Jonathan Abrams, and Dan Desmet; bottom row, Audio Performance in Streaming (B-16), from left, Jan Nordmann, J. Todd Baker, Alex Kosiaorek, David Prentice, and David Bialik, 129th broadcast sessions chair

The game audio session Audio Cage Match, was one of the more rough-and-tumble 129th events with, clockwise from left, Larry the O, Steve Horowitz, and Peter Drescher.

David Griesinger, left, and Keith Johnson were among those giving master classes at the 129th.

A standing-room-only crowd enjoyed Alex Case's tutorial (T-2) *Equalization—Are You Getting the Most Out of this Humble Effect?*

Soren Bech, left, chaired the papers session on room acoustics (P27); to his right are authors Tom Holman, James Johnston, Matthew Wankling, Adam Hill, and Bruno Fazenda.

young people is in danger of being deafened by listening through ear-buds with the volume turned up too loud. In relation to sound quality, he proposed that to this generation "good enough is acceptable because they've never heard what great sounds like."

THEMED TRACKS MAKE FOR CLEAR AGENDAS

Four themed tracks of events acted as pathways through the technical program for delegates in selected target groups.

Chaired by Bob Moses, the product design track included tutorials and workshops on vital topics for those working with audio electronics. Well-known for his thorough coverage of the topic at previous events, Bill Whitlock provided two excellent tutorials on audio system grounding, including the interestingly titled "Is Your Equipment Design a Noise Problem Waiting to Happen?" Ralph Morrison went further into the nitty-gritty of these subjects, while Alex Westner chaired a session on the important business topic of licensing third-party technology. A series of twelve live sound seminars, chaired by Michael Knowles and Jonathan Novick, worked in support of a vibrant business, offering technical, historical, and business education to an enthusiastic audi-

Among the authors who presented papers in poster sessions and were able to play laptop demos and discuss their work with numerous visitors were Colby Leider (top) and Yuichi Ueda.

How Does It Sound Now? (W-5) was one of 20 129th workshops: participants were, clockwise from top left, Elliot Scheiner, Al Schmitt, Ed Churney, Gary Gottlieb (chair), and Mark Rubel.

ence. In these days of environmental concern, it was interesting to notice a workshop on "The Greening of Live Audio for Medium and Small Operators," which looked at how smaller providers can lessen their environmental impact by using less power, transportation, and labor. Sixteen broadcast and media streaming events, coordinated by David Bialik, considered subjects ranging from broadcast facility design to a tutorial on audio over IP. The game audio fraternity enjoyed four days of interesting sessions, courtesy of coordinator Steve Martz, including three "Code Monkey" tutorials on different aspects of programming, including XML, scripting, and C++.

EXHIBITION HIGHLIGHTS NEW DIRECTIONS FOR GEAR

Among the many highlights to be found on the exhibition floor was Avid's announcement of a new direction for its widely used ProTools audio workstation system. Formerly tied to a limited range of specific hardware, ProTools 9 replaces the mid-range ProTools LE in the product line-up and can function with a wide range of hardware I/O devices or with the native audio hardware of the host computer. The HD version of ProTools 9 will be available in either native or DSP hardware-based manifestations. Continuing the workstation-related story, in a radical update to its popular AWS 900 mixing console, which combines analog design with audio workstation control, Solid State Logic introduced the option for 48 inputs, as opposed to the existing 24. This is in addition to the new A-FADA moving fader module that is capable of following the automation data from the associated workstation. SSL's Nucleus further enhanced the line-up, offering DAW control and SuperAnalogue design to the project studio. Console technology was also highlighted in the form of Soundcraft's Si Compact Series, which combines motorized

faders, powerful digital mixing, and Lexicon effects in a compact chassis.

On the transducer front, beyerdynamic staged something of a surprise with its first-ever ribbon microphone capsule for an on-stage wireless microphone system. The RM 510 is an interchangeable capsule for the Opus 600 and 900 wireless systems, based on a three-micron aluminum ribbon and a sound labyrinth behind the capsule that gives it a cardioid pattern. ADAM Audio, on the other hand, was showing the use of ribbon transducer technology in its loudspeakers, in the form of the X-ART tweeter. Known as eXtended Accelerating Ribbon Technology, it uses a novel way of exciting the air in which folds in a pleated ribbon diaphragm are compressed and expanded according to the audio signal, thereby pumping air a little like the bellows of an accordion. Ribbon technology features again in Cloud's new hand-made JRS-34 ribbon microphones, designed in collaboration with Stephen Sank, and once more in the form of the R-101 from Royer Labs that uses multilayered wind-screening to reduce the problematic blasting from plosives that are often a feature of such designs. Yet another new ribbon design could be found in the shape of AEA's hypercardioid KU4, which is said to be a modern interpretation of RCA's original and renowned KU3A. This was truly the year of the ribbon.

Extending its range of professional loudspeakers, JBL introduced five new units to its AE Series, including a 15-inch low-frequency system designed to integrate with the other modules in the series. Community Audio, serving the market for ceiling loudspeakers on the other hand, launched its Distributed Design Series with unique features that simplify installation known as Drop-Stop and Twist-Assist.

Wireless technology continues to develop apace, and there was a new body-pack transmitter from Audio-Technica at the

Jim McTigue and Valerie Tyler,
convention cochairs

Rob Maher and Veronique Larcher,
papers cochairs

Workshops: from left,
Jennifer Solis,
Mike Wells, and
David Bowles

Conrad Cooke, left, and Jose Garcia,
tutorials and master classes cochairs

Bob Megantz,
facilities chair

Bill Wray,
historic
events chair

Michael Knowles and Jonathan Novick,
live sound events cochairs

Jessica Livingston and Jeffrey McKnight,
technical tours cochairs

Steve Martz, game audio chair

129th Convention. A-T has adopted a digital microphone transmission technology that it calls SpectraPulse, which uses an RF band above 6 GHz along with Ultra Wide Band (UWB) modulation in an attempt to avoid the spectrum congestion and "white space" problems increasingly encountered with wireless microphones. The secure encryption features of this system prevent digital wireless signals from being intercepted by unauthorized parties. The company's new mtu301 transmitter can be used with its headworn or lavalier microphones. Zaxcom, meanwhile, announced that it is now shipping its broadcast ENG receiver, QRX100, which allows four received digital audio channels to be easily connected to a broadcast camcorder.

TECHNICAL TOURS HIT THE ROAD

There was a nonstop program of technical tours in San Francisco, ably coordinated by Jessica Livingston and Jeffrey McKnight. No audio convention in San Francisco would be complete without a trip to Dolby Laboratories, and for the first time in over a decade the tour included both the world headquarters in San Francisco and the Brisbane manufacturing facility. State-of-the-art gear on view in-cluded selective solder robots and flying probe test equipment. Delegates were able to view 2-D and 3-D picture content together with 7.1 audio in the company's world-class screening room.

Further tours included Louise M. Davies Symphony Hall, the Berkeley Repertory Theatre, and Grace Cathedral; par-

From left, David Bialik, broadcast sessions chair,
Howard Sherman, press/publicity, keynote speaker
Bob Margouleff, Valerie Tyler, and Chris Smith, special event chair

We Thank...
129th Convention Committee

Jim McTigue and **Valerie Tyler**
cochairs

Veronique Larcher and
Rob Maher
papers cochairs

David Bowles, **Mike
Wells** and
Jennifer Solis
workshops

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Steve Martz
game audio chair

Bob Moses
audio product design chair

Paul Verna
platinum events chair

Bob Megantz
facilities chair

Jessica Livingston and
Jeffrey McKnight
technical tours co-chairs

Bill Wray
historical events chair

Chris Smith
special events chair

Alex Case and
Mei Ling Loo
student/career events
cochairs

Michael McConnell and
Evan Peebles
volunteers cochairs

Bob Schulein
Technical Council liaison

Alex Case, and MeiLing Loo, student/career events
cochairs

Paul Verna,
platinum events
chair

Bob Moses,
audio product
design chair

Numerous 129th volunteers were guided by Michael McConnell (kneeling,
center) and, standing behind him, Evan Peebles (wearing hat).

ticular attention was given to the uniquely challenging acoustics of these environments and their installed sound systems. CBS Interactive and a number of local studios provided a chance to see the most up-to-date operational facilities in the Bay Area, while the Center for Computer Research in Music and Acoustics at Stanford University showed its impressive collaborative work between composers and researchers. Tiny Telephone and Women's Audio Mission studio showed the community at work in audio outreach to under-represented parties and the independent music movement.

HISTORICAL PROGRAM CELEBRATES THE PAST
Dolby featured once more in the historical program's line-up, organized by Bill Wray, with a two-hour presentation by Ioan Allen in Dolby's presentation studio. Attendees could experience historical film footage demonstrating the evolution of 35-mm stereo optical film soundtracks, from the first experimental recordings made by Alan Blumlein through to today's digital soundtracks. On Saturday, Brad McCoy, a senior studio engineer for the Library of Congress, described the library's new facility in Culpeper, Virginia. Lee Brenkma chaired an interesting retrospective on what it had been like

Lunchtime keynote addresses were presented by, counterclockwise from left, Dave Rat, Adam Levenson, and Ian Moore.
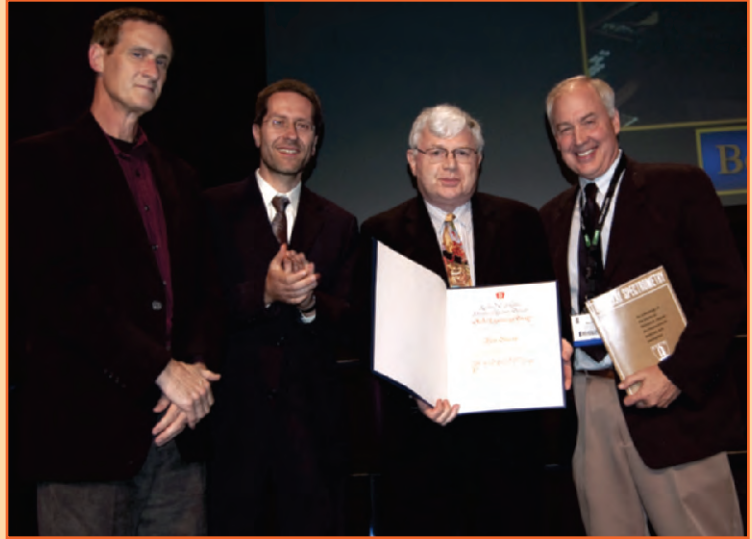
Ben Burtt (right), 129th Heyser Memorial Lecturer, is joined by, from left, Jim Kaiser and Juergen Herre, Technical Council vice chairs, and Bob Schulein, Technical Council chair.

to run live sound gigs in the 1970s, with Radley Hirsch and John Meyer discussing the delights of home-grown loud-speakers, amplifiers pushed to breaking point, and escalating SPL expectations.

SPECIAL EVENTS GO LIVE

Now in its eighth incarnation, the Surround Live 8 symposium, chaired by Frederick Ampel, took place on November 3 and was sponsored by DTS Inc. It featured presentations on both the operational and technical aspects of surround. With a keynote from Russ Berger of RBDG in Dallas and sessions on the Winter Olympics and surround for radio, among others, this proved to be a day to remember.

Three lunchtime keynotes provided an interesting interlude in the middle of the day, with presentations from Dave Rat, Adam Levenson, and Ian Moore. Rat drew on his 30 years of experience in the live sound industry to question some of the common industry practices that are encountered every day, while Levenson delved into the relationship between game audio and other forms of mainstream entertainment. Moore's presentation, "I'd Rather Have More dBs than Blue LEDs," sought to remind product designers that what might make sense in the R&D lab may not have the same appeal in the back of an 18-wheeler truck on tour.

The Platinum Series was prominently featured again at the 129th Convention, thanks to Paul Verna, with well-attended discussions on mastering, artists and producers, and producers and engineers. It was possible to learn directly from some of the greatest names in the business, including legendary Doors keyboardist Ray Manzarek, producer and engineer Joe Chiccarelli, and renowned disc-cutting expert Doug Sax about the ins and outs of their techniques, studio relationships, and professional experiences. Bobby Owsinski also took musicians and engineers on a tour of social media tools that can be used to enhance their businesses without absorbing all their time. The Grammy Soundtable, moderated by

Sylvia Massy, attempted to break down the structure of the panelists favorite tracks in a session entitled "Sonic Imprints: Songs That Changed My Life."

On Saturday evening on top of the hill on Gough Street, Graham Blyth performed in grand style on the Ruffatti organ of the Cathedral of St Mary of the Assumption. The exposed pipes and dramatic setting of this organ enabled listeners to hear every detail of the music, exemplifying well a point made earlier by David Griesinger about the importance of direct sound for good localization in concert halls. A first half of Bach with the "Fantasia" and "Fugue on BACH" by Liszt provided an excellent precursor to a French second half, including works by Pierné, Guilmant, and Saint-Saëns, among others. Chris Smith coordinated the special events program at the 129th Convention.

Although J. S. Bach's musical output was legendary for its quality and quantity, one hopes he might have liked the equally legendary output of this year's Heyser Memorial Lecturer, Ben Burtt. His contributions have been integrally woven into a number of Oscar-winning films, including *Star Wars* and the Indiana Jones series. He has been nominated for twelve Academy Awards. Among many fascinating anecdotes in his lecture, "The Sound Behind the Image," was the story of how the iconic light sabre sound for the battles between Luke Skywalker and Darth Vader was created out of a combination of electrical hum and other noises. He encouraged the packed audience to learn the language of sound, developed in the classic era of film, because he believes it to be the basis for all our creative sound work today.

STUDENTS GET BUSY

Student members form a large slice of the international body that is the Audio Engineering Society. The AES is where they come to learn from the pros, get introduced, and put their careers on the rails. Cochairs Alex Case and Mei Ling Loo organized the student/career events. A sterling panel of

GRAMMY SOUNDTABLE and PLATINUM EVENTS

Grammy Soundtable: top left group, moderator Sylia Massy (center) and panelists, clockwise from top left, Jimmy Douglas, Bob Clearmountain, Nathaniel Kunkel, DJ Khalil, and Joe Barresi.
Platinum Mastering: left photo, from left, Paul Verna, moderator Bob Ludwig, Doug Sax, and Michael Fremer.
Platinum Producers and Engineers: top right photo, from left, Paul Verna, Nico Bolas, Ross Hogarth, and John Vanderslice.
Platinum Artists and Producers: above, from left, Ray Manzarek, CJ Vanston, Veronica Romeo, Mr. Bonzai, KamranV, and Corey Cunningham.

experts was on hand in the education forum panel on Thursday afternoon to present their benchmark work in creating a compelling out-of-class experience for audio students. In addition to the recording competitions that have become a standard feature of the convention student events, Ian Corbett and David Greenspan chaired a useful seminar during which students could bring their stereo or surround projects for feedback and comments from a panel and the audience. This session was generously sponsored by PMC. Students were also privileged to benefit in their recording competitions from the advice of world-class panels of judges including Akira Fukada and Ronald Prent.

TECHNICAL PAPERS PUT RESEARCH ON THE MAP

A remarkable 27 paper and poster sessions spread across four days had been assembled by papers cochairs Veronique Larcher and Rob Maher. It would have been hard to find a corner of the audio research world that had not been explored during the 129th Convention, with sessions ranging from "Transducers and Processing for Live Sound" through "Vir-

tual Rooms" to "Enhancement of Audio Reproduction." Among the more novel areas to be described was a means of synthesizing alien language chat for computer games, given by Nicolas Tsingos and Charles Robinson. They proposed a solution to enable speech-driven alien language synthesis that selectively replaces the user's input speech with a corresponding alien language output, synthesized on the fly. The system even deals with multiple alien languages in a virtual environment, with effective, entertaining results. To find out more, get hold of paper 8161 from the AES E-Library, www.aes.org/e-lib. There were a number of presentations at this convention proposing that ambisonics can work effectively for spatial reproduction, especially when using higher-order systems with appropriate decoding matrices.

A WORKSHOP, TUTORIAL, OR MASTERCLASS FOR EVERYONE

The efforts of a great team helped to ensure that a strong line-up of tutorials and masterclasses offered a rewarding educational experience for the thousands of delegates registered for

AES COMMITTEE MEETINGS

1. Regions and Sections: Francis Rumsey, chair
2. Technical Council: from left, Michael Kelly and Juergen Herre, vice chairs, and Bob Schulein, chair.
3. Publication Policy: from left, John Vanderkooy, editor, Jan Pedersen, and Soren Bech, chair.
4. Historical: Bill Wray, cochair

the technical program. Led by Conrad Cooke and Jose Garcia, four masterclasses and thirteen tutorials filled the program. Ever popular was David Griesinger with his views on sound perception and evaluation in performance acoustics venues, as well as Peter Eastty with his masterclass entitled "DSP—Why So Hard?" during which he attempted to demystify the world of signal processing. Sound processing for the iPhone and iPod also featured large on the agenda, with these devices becoming the dominant platform for the majority of general-purpose music listening today.

David Bowles and Mike Wells with assistance from Jennifer Solis produced an outstanding program of twenty workshops for all to enjoy, culminating in a theme that pervaded the convention: "Return to Quality in Audio Production." Andres Mayo and Ronald Prent chaired the workshop on this topic with panelists Francisco Miranda, Dave Reitzas, and Jeff Wolpert, during which a paradigm shift toward long-lasting recordings with better quality was discussed. One of the media that is facilitating this is the Blu-ray disc, the challenges of which were discussed in another workshop chaired by Stefan Bock. Pure audio Blu-ray is able to deliver super-high-quality, audio-only titles. The panel presented the audience with different authoring concepts found in commercial products.

TECHNICAL COUNCIL AND STANDARDS MEETINGS

At the 129th Convention there was a full program of standards meetings, coordinated by Richard Chalmers, Standards Committee chair, and Mark Yonge, Standards manager. There was also a comprehensive bill of Technical Committee meetings covering the many fields of endeavor that make up audio engineering. The Technical Council, led by Bob Schulein, helps to influence the future initiatives of the Society, particularly in respect of forthcoming topics for convention sessions, conferences, and advisory technical documents. It also organizes the Open House of the Technical Council and the Heyser Memorial Lecture.

AES COMMITTEES

In the background and unseen by the majority of delegates to a convention, much of the business of the Society takes place in committee rooms where future conferences, publications, and the strategy of the organization are planned. The annual business meeting confirmed that AES membership has reached a new record high, numbering over 14,000 individuals. Recent offerings such as online tutorials and the enhanced aes.org website have strengthened the benefits of membership. During the Regions and Sections meeting representatives of AES sections from around the world met with the society's vice presidents to share examples of exciting local events and membership initiatives. The Board of Governors met on the evening of the last day of the convention, during which the society's future policy and direction was debated (see the following pages).

Good technical facilities and assistance are crucial to the success of a convention, and the sterling efforts of facilities chair Bob Megantz were appreciated by all those taking part. A team of volunteers organized by Michael McConnell and Evan Peebles was on hand to ensure the smooth running of

EDUCATIONAL EVENTS

1. Student Recording Competition: Jim Kaiser offers comments on a student's recording.
2. Career/Job Fair
3. From left, Malcolm Fife, Leslie Ann Jones, and Vincent Caro were the judges for the Surround for Picture recording competition.
4. Student Recording Competition Awards: Yao Lu won 1st place in the Stereo Classical competition and received a prize from Merging Technologies president Claude Cellier and a certificate from Alex Case.
5. SDA officers: from left, Ezequiel Morfi, Philip Parenteau, MeiLing Loo, Daniel Deboy, and Magdalena Plewa
6. Education Fair: Sala de Audio was one of many schools and universities that provided information to prospective students.

this complex event, and their efforts are to be commended.

Without a doubt the 129th Convention presented an industry working hard and moving forward amidst challenging economic conditions, determined to set itself on a firm course for the rest of the 21st century.

For a complete postconvention listing of events, go to www.aes.org/events/129/129thWrapUp.pdf. A CD-ROM with all the 129th papers can be purchased at www.aes.org/publications/conventions. Individual papers can be purchased from the AES E-Library at www.aes.org/e-lib, and see page 1146 for an order form listing all the 129th papers. The list of 129th exhibitors begins on page 1112. Information for ordering mp3 recordings of 129th sessions is on page 1144.

BOARD OF GOVERNORS MEETS

The AES Board of Governors met on November 7 to hear reports from AES officials and standing committees
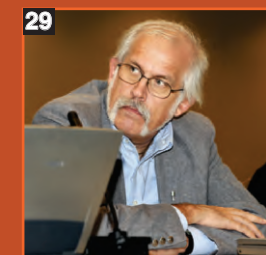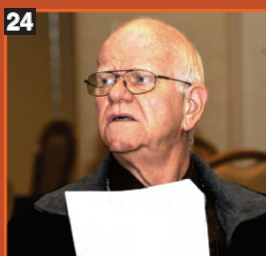
1   Diemer de Vries, president

2   Roger Furness, executive director

3   Garry Margolis, treasurer and Finance Committee chair

4   Jim Kaiser, president-elect and Laws and Resolutions Committee cochair

5   Francis Rumsey, Regions and Sections Committee chair

6   Wieslaw Woszczyk, governor and Laws and Resolutions Committee cochair

7   Agnieszka Roginska, governor and Convention Policy Committee vice chair

8   Durand Begault, governor

9   Veronique Larcher, incoming governor

10   Bob Lee, secretary

11   Jim Anderson, past president, Convention Policy Committee chair, and Nominations Committee chair

12   Antonio de Oliveira, Europe Southern Region vice president; Joel De Brito, Latin America Region vice president; John Vanderkooy, editor

13   David Bowles, governor; Bozena Kostek, Europe Central Region vice president

14   Robert Breen, incoming USA/Canada Eastern Region vice president; Peter Cook, USA/Canada Eastern Region vice president

15   Richard Chalmers, Standards Committee chair; David Murphy, governor; Frank Wells, USA/Canada Central Region vice president

16   Alex Case, Education Committee chair

17   Christopher Freitag, Tellers chair

18   Jan Abildgaard Pedersen, Europe Northern Region vice president and Conference Policy Committee chair

19   Ville Pulkki, incoming Europe Northern Region vice president

20   Theresa Leonard, Membership Committee chair

21   Bob Moses, governor and Awards Committee chair

22   Sean Olive, USA/Canada Western Region vice president

23   John Krivit, Education Committee vice chair

24   Bill Wray, Historical Committee cochair

25   Jay Fouts, legal counsel; Han Tendeloo, Special Advisory Group chair

26   David Josephson, incoming governor

27   Kimio Hamasaki, International Region vice president and Membership Committee vice chair

28   Bob Schulein, Technical Council chair

29   Bruce Olson, incoming governor