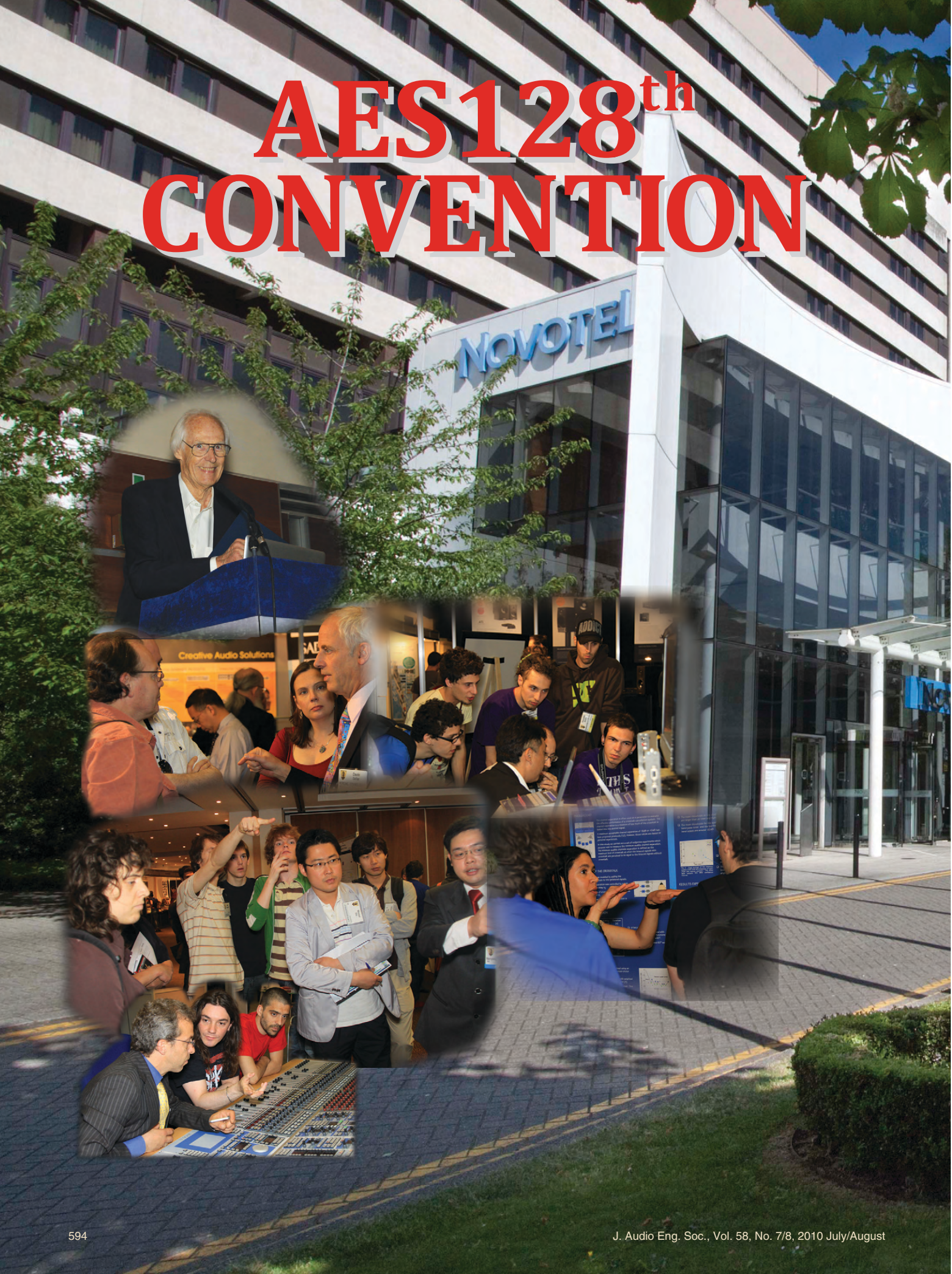
AES128th CONVENTION



MAKE THE RIGHT CONNECTIONS

London, UK
2010 May 22–25

Thousands of visitors arrived in London in May during the hottest weekend of the year so far and made their way to the Novotel in Hammersmith for the 128th AES Convention *Make the Right Connections*. "The last AES Convention in London was 23 years ago, in 1987," explained Josh Reiss, convention chair, during his welcome statement to the large crowd at the opening ceremonies. "A young audio engineer named Roger Furness was the chair of that convention," he went on, "and it featured 65 technical papers, a record number… For the first time companies released software that allowed users to edit audio on a personal computer… Well, we're back in London and the world, as well as this city, has moved on a bit. Many of the concepts discussed then are now established and commonplace in audio software."

Reiss had worked closely with a dedicated committee of volunteers, assembling a program with nearly 200 papers in 16 lecture sessions and ten poster sessions. The numbers involved bear witness to the dramatic growth in the scale of the technical program at conventions since the previous London event. This time visitors could also choose from over 35 tutorials, workshops, and special events. Exhibitors from around the globe showed their latest products on an exhibition floor close to the technical sessions, and a sold-out line-up of technical tours visited some of London's ➥

Opening Ceremonies and Awards

Roger Furness,
AES executive director

Diemer de Vries
AES president

Josh Reiss
convention chair

Jim Anderson
awards

"The First Beatle," George Martin,
received Honorary Membership

Masataka Goto delivered the Keynote Address
to a large, attentive crowd at the opening ceremonies.

top audio and music venues. A hard-working cohort of student volunteers, led by Matt Speed, as well as excellent facilities, coordinated by Martin Wöhr, helped to ensure that everything ran smoothly from morning until night during this action-packed four-day event.

OPENING CEREMONY AND AWARDS PRESENTATION

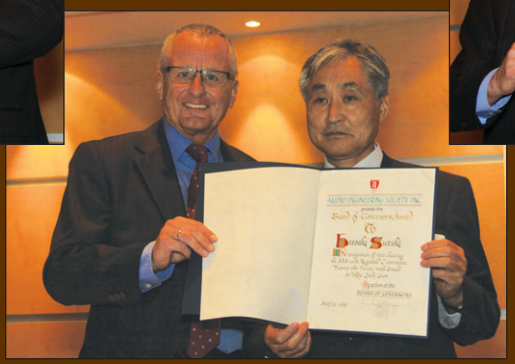
Opening to a packed hall with standing room only, Roger Furness, AES executive director, welcomed delegates to London, remembering his own tenure as chair of the 1987 London convention. "The world of audio has changed immeasurably since then," he said, "and here we can reflect on how it might change in the future." Diemer de Vries, AES president, offered a warm greeting to those present, and he recalled a nightmare of his in which the recent Icelandic volcanic ash cloud had so completely disrupted the air travel of AES delegates flying to London that he was alone on the podium, speaking to an empty hall. However, he was pleased to have woken up and found the opposite to be true. He praised the choice of the ➥

Ronald Aarts received the Silver Medal Award.

Salvador Castaneda Valdes received the Citation Award.

Fellowship Award recipients: clockwise, from top left, John Grant, Ville Pulkki, Mark Yonge, and Bozena Kostek.

Board of Governors Award recipients: clockwise, from right, Martin Wöhr, Hiroaki Suzuki, and Jan Abildgaard Pedersen.



Authors

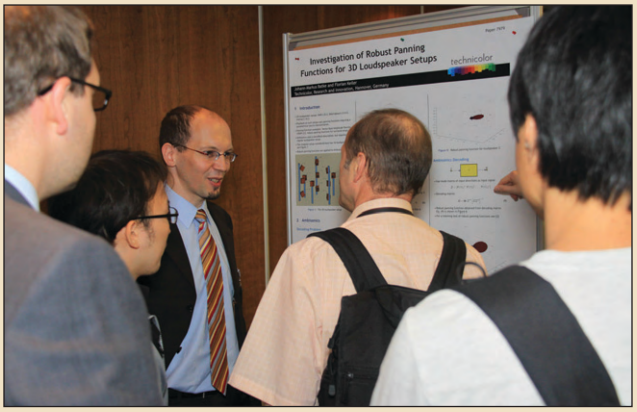
Among the authors presenting papers in lecture sessions were, top row from left, Wolfgang Klippel, Ian Dash, Sorrel Hoare, David Malham, and Cornelia Falch; 2nd row, Peter Craven and Brian Katz.

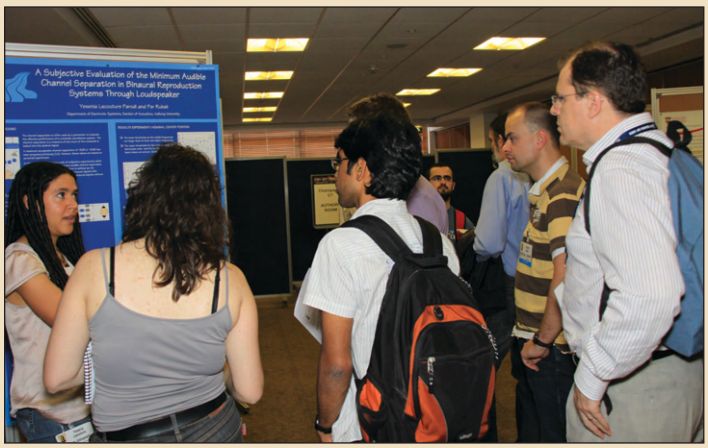
intimate venue, which enabled a close integration between the exhibition and technical sessions, providing ample opportunity for the all-important social interaction that brings people to conventions. He then ceded the podium to Josh Reiss, who thanked his outstanding convention committee and student volunteers for working long and hard to ensure an excellent convention.

Jim Anderson, past president, announced the AES awards being given to an impressive line-up of deserving recipients. One of the highest honors the Society can bestow is the Silver Medal, established in 1971 and given in honor of audio pioneers Bell, Berliner, and Edison. For his outstanding contributions to research and applications of signal processing in acoustics and sound reproduction, this prestigious award was presented to Ronald Aarts. Salvador Castaneda Valdes received a Citation Award for outstanding contributions to training and to disseminating the understanding of applied audio technologies in Latin America. Board of Governors Awards were presented to Jan Abildgaard Pedersen, Hiroaki Suzuki, and Martin Wöhr for their work as chairs of recent AES conferences and conventions.

The Fellowship Award (for outstanding contributions) was given to John Grant for work on audio networking and standards; Bozena Kostek for work in the field of audio; Ville Pulkki for work on the reproduction, perception, and modeling of spatial sound; and Mark Yonge for his work on AES standards.

This year's keynote speaker was Masataka Goto, leader of the Media Interaction Group at the National Institute of Advanced Industrial Science and Technology (AIST), Japan. Goto was one of the first to start work on automatic music understanding, and he has been at the forefront of research in music technologies and music interfaces. His presentation, "Music Listening in the Future," offered a fascinating insight into possible new ways of interacting with reproduced music. Music-understanding technologies, (often termed semantic audio) he explained, will be a key element of interactive music listening in the future. Calling





The central location of the posters area ensured a steady stream of visitors with questions and comments for the large number of authors presenting papers in poster sessions. Three of those authors were, counterclockwise from top, Jan-Mark Batke, Daniele Ponteggia, and Yesenia Lacouture Parodi.

this "active listening," Goto proposed that users will be able to do things like skipping sections of no interest in a song, using something like a chorus-search function. He also showed examples of virtual dancers that automatically synchronized their gyrations with the music and a lyrics synchronizer that can automatically line up displayed lyrics with a song. "Music touch-up" he suggested could be used for casual customization of a song by the user, such as modifying the sound of a drum kit, putting a dagger in the heart to the traditional notion of reproduction as sacrosanct to the producer's original intention. He concluded by saying that augmented, music-understanding interfaces will make music listening a more active, immersive, richer, and deeper experience.

Among those giving presentations in workshops were, top, from left, Philip Nye, Richard Foss, and Robby Gurdan; bottom, Sean Davies, Nadia Walaskowitz, and Andrew Mason.

In a special ceremony on the last day of the convention, an Honorary Membership was conferred on world-famous Beatles producer Sir George Martin. Sir George's services to the music and recording industry had been sustained over a period of more than fifty years, said the citation; his production, composition, and arranging activities have continued over nearly six decades. Jim Anderson, who read the citation, proposed that Sir George had "taken the recording studio of the day and turned it into a musical instrument." The great man accepted the award with his customary humility and suggested that the certificate's beautiful calligraphy looked like "something Henry the Eighth wrote when ordering the execution of Ann Boleyn." A lengthy standing ovation followed from an admiring audience.

EXHIBITION

Coordinated ably by Thierry Bergmans, the exhibition in the Novotel London West was filled with manufacturers and service providers, ranging from large to boutique firms. Prominent among them was Steinberg, showing an implementation of the Iosono spatial audio workstation software that is closely integrated with the Cubase and Nuendo DAW packages. Starting out as a means of graphical spatial mixing for wavefield synthesis applications, Iosono was presented here in a version that can be used for more conventional spatial mixing formats such as 5.1 or 7.1. The novel concept, though, is that spatialization parameters are attached to sound objects themselves, and the resulting soundfield can be rendered on the fly for any chosen loudspeaker format. This means that an optimal spatial mix can be generated for multiple formats without the need for upmixing or downmixing or some form of transcoding.

With one of the most active stands on the show floor, the Centre for Digital Music (C4DM) at Queen Mary, University of London, impressed delegates with its research applications. Of particular interest was an automated mixing tool described by Enrique Perez Gonzalez, capable of adjusting the levels of signals according to a number of rules, such as to avoid clipping or adjust the balance between channels. Automated panning can also be applied so as to place signals in a stereo image according to their importance. Although this was initially designed with live sound in mind, as a way of doing basic level setting, there are many other applications. And the system can perform other operations such as automatic EQ and phase correction. The team wants to work with mixing engineers to find out more about their processes so that expert rules can be employed in future.

Among the loudspeaker exhibitors, PMC's new active monitor, the IB2S XBD-A, made its debut at the conven- ➥

Among the audio pros giving tutorials were, clockwise from top left, Darcy Proper, Sabine Maier, Alex Case, Barry Marshall, and Bruce Olson and John Woodgate.

From left, Peter Mapp, papers chair, Josh Reiss, convention chair, and Roger Furness, AES executive director

Martin Wöhr (left), facilities chair, with Jan Romijn

Matt Speed (center), student volunteers coordinator, with a group of volunteers

Richard Ranft, technical tours chair, and Heather Lane, special events chair

Matt Bell and Nick Dimes handled press relations.

tion in the company's surround equipped demo room. Fitted with two ten-inch piston bass drivers, two DSP-controlled Class D amplifier sections, and the company's Advanced Transmission Line technology, the new speaker is aimed at high-end reference monitoring and mastering applications. Together with Prism Sound, PMC staged a number of presentations from the industry's finest engineers and producers under the Masters of Audio banner. These included Ronald Prent on surround mixing and Stefan Bock on Pure Audio Blu-ray. Prism Sound was present in force with its latest versions of the SADiE editing system, now available in software-only format and in a LiVE range of hardware and software that can be used for location recording of multichannel sound.

Leading microphone manufacturer Schoeps has taken its competitors by surprise with the introduction of a new type of shotgun microphone, the SuperCMIT. Using digital processing patented by Illusonic, a company set up by Swiss engineer Christof Faller, the new microphone offers increased directionality and noise and reverberation rejection using a novel two-capsule design. Having a striking blue finish option and digital outputs, this microphone offers two output channels, one carrying the new processed signal and the other carrying the conventional forward-facing capsule output. Two

Damian Murphy (left) and Michael Kelly, tutorials and workshops cochairs

Thierry Bergmans (right), exhibit organization, with Claude Cellier

Sue Williams, membership Europe, and Mike Williams, publication sales

Miroslav Jakovijevic, student events chair

We Thank...

128th Convention Committee

Josh Reiss
chair

Peter Mapp
papers chair

Michael Kelly and **Damian Murphy**
tutorials and workshops cochairs

Florian Camerer
broadcast events chair

Heather Lane
special events chair

Miroslav Jakovijevic
student events chair

Martin Wöhr
facilities chair

Richard Ranft
technical tours chair

Matt Speed
student volunteers coordinator

Thierry Bergmans
exhibit organization

Gisèle Clark
promotion

Matt Bell and **Nick Dimes**
press relations

Michael Williams
publication sales

Sue Williams
membership Europe

Gisèle Clark, promotion

modes can be selected, one of which offers considerably greater processing for high rejection of diffuse sound.

Sonic Studio launched new AU (Apple Audio Unit) and RTAS versions of its Broadband Denoise package, alongside Amarra 2.0, the company's audiophile-quality music player for Mac computers, which connects to Core Audio interfaces and replays Apple Lossless as well as various PCM files. The new version of Amarra also plays formats such as FLAC, MP3, and AAC as well as high-resolution DSD files. Allen & Heath was displaying its iLive series of digital mixing consoles, while Trinnov added loudness metering to its Smart-Meter product, designed to conform with the forthcoming EBU standard R-128. Jutel's HIP-man IP audio-management solution was promoted as a tool to facilitate high-level control and management of IP audio network devices, while Audio Precision chose AES London as the place to make the European debut of a new wide-bandwidth audio analyzer, the APx525. With an analysis bandwidth up to 1 MHz, this new analyzer can deal with the noise products resulting from devices such as Class D amplifiers and sigma–delta convertors.

These were just a few of the many offerings on display in the exhibition hall. It is difficult to do justice to them all here.

TECHNICAL PROGRAM

A packed technical program including nearly 200 papers resulted in a busy upper floor of the convention center, where scientists and engineers from all walks of audio life were able to meet and exchange their latest ideas. Peter Mapp, papers chair, coordinated the 16 lecture sessions and 10 poster sessions. Authors in the lecture sessions spoke on subjects ranging from spatial audio through transducers to signal processing and psychoacoustics. Poster sessions in the main foyer drew interested crowds on a daily basis to discuss research results with audio researchers from around the globe.

Brian C. J. Moore (center), the 128th Heyser Lecturer, is flanked by Bob Schulein (left), Technical Council chair, and Jim Kaiser, vice chair.

Exhibitors discuss new products and services with 128th visitors.

Workshops and tutorials, expertly organized by Michael Kelly and Damian Murphy, enabled visitors to the 128th Convention to update their knowledge on a wide range of contemporary audio topics. Key themes at the convention, each with a defined "track" of papers and educational events throughout the four days, included semantic audio, broadcast audio planned by Florian Camerer (who was unable to attend due to family obligations), game audio, and the recording industry. Of particular interest in the semantic track was a tutorial by Jörn Loviscach entitled "Do-It-Yourself Semantic Audio," during which the presenter explained the various toolkits, web-based services, and stand-alone software that users can access to help them extract the audio/music parameters they need and apply them in basic machine-learning algorithms. "Interacting with Semantic Audio—Bridging the Gap Between Humans and Algorithms," chaired by Michael Hlatky, examined the suggestion that although some semantic audio applications have now found their way out of the research world, there is relatively little awareness of them among prospective users. In another important workshop, the new EBU recommendation R128 on loudness was presented in detail for the first time.

Among other popular workshops and tutorials was a session chaired by Ville Pulkki on applications of time–frequency processing in spatial audio, during which Christof Faller, Jean-Marc Jot, and Christian Uhle discussed the various ways in which directional and diffuse information can be separated into psychoacoustically relevant frequency bands with specified time durations. This enables spatial audio scenes to be represented efficiently and possibly transmitted in a parametric form or rendered in a different way to that used for capturing. (See article on p. 655.)

Flying the flag for studio operations and techniques were tutorials such as the one presented by Barry Marshall from the New England Institute of Art; he looked at the technical innovations of Les Paul. Another by Alex Case tackled the topic of dynamic range compression in pop mixing using numerous practical examples. Dave Humphries of Loopsync took a trip into the world of film sound, leading the audience through the issues associated with dialog replacement to manage problems arising from noisy locations, special effects, and dialog changes.

SPECIAL EVENTS

The 128th special events included three sessions moderated by Peter Filleul based on the generic theme "Life in the Old Dogs Yet," sponsored jointly by AES and ARPS (Association of Professional Recording Services). Aiming to dispel the myth that the recording industry is in a death spiral, panels of respected recording entrepreneurs and stakeholders offered their views on current and future business models for the industry. Session 1, "Keeping Studios Alive" in the changing worldwide recording climate started with a pre- ➥

Two of the 128th special events were *Life in the Old Dogs* Yet (left), with, from left, Mark Anders, Jonathan Smith, Paul Brown, Malcolm Atkin, and Andrew Leyshon, and *Platinum Engineer Behind the Glass* with, from left, Andy Bradfield, Phil Harding, Chuck Ainlay, George Massenburg, and Howard Massey (moderator).

sentation by Andrew Leyshon and was followed by a panel discussion among Mark Anders, Jonathan Smith, Paul Brown, and Malcolm Atkin. Session 2, which considered the costly dilemma that studios face when choosing between quality and quantity, started with a presentation by George Massenburg, followed by a panel discussion among Crispin Murray, Rob Kelly, Simon Drake, and Barry Fox. Session 3, "After the Ball—Protecting the Crown Jewels," took a fascinating peek into the worlds of archiving and asset protection. A presentation by John Spencer preceded the panel discussion among George Massenburg, Tommy D, Chris Clark, Simon Hutchinson, Paul Jessep, and Malcolm Atkin.

The Platinum sessions at the 128th were produced jointly by AES, APRS, and the Music Producers Guild. Opening the studio world to a room full of avid listeners, Sunday's Platinum Producer session "Behind the Glass" was moderated by Howard Massey. The panel of legendary producers—John Cohen, Stephen Lipson, Geoff Emerick, and George Massenburg—offered tips about eliciting the best performances from artists and how to realize an artist's vision without busting the budget. The Platinum Engineer session on Tuesday was also moderated by Howard Massey. Panelists Andy Bradfield, Phil Harding, Chuck Ainlay, and George Massenburg offered some of their wisdom in the field of new media and online distribution, as well as the application of legacy technology in an increasingly digital world.

Graham Blyth's customary organ recital, now a longstanding feature of AES conventions around the world, took place at the famous Temple Church, a location featured in Dan Brown's *Da Vinci Code*. The mighty Harrison and Harrison organ there enabled Graham to do justice to English works by composers including Stanford, Parry, and Whitlock, as well as to French delights by Vierne and Boellmann. With the recumbent Knights Templar lying in the tower at the end of the church, this venue provided an atmospheric setting for an excellent concert.

HEYSER MEMORIAL LECTURE

The eminent specialist in human hearing, Brian C. J. Moore of Cambridge University, was the speaker at this convention's Richard C. Heyser Memorial Lecture. To an attentive audience, Moore gave a clear review of the processes involved in hearing loss, a phenomenon that affects more than 10% of the adult population in most countries. He pointed out that there are "quiet" countries where hearing loss is less prevalent, suggesting that it is partly a consequence of our noisy lifestyles that we suffer in this way. Other factors such as certain drugs and genetic disposition can also play a part, although the occasional glass of red wine may apparently be beneficial (as the wine steward of Wolfson College, Cambridge, Brian can also speak with authority on this topic). Modern signal processing is now used widely in hearing aids, which can compensate for certain types of hearing loss by handling audio signals in multiple bands and applying dynamic compression. This greatly helps in cases where the hearing tends to disappear below a certain threshold, a phenomenon known as loudness recruitment.

BANQUET

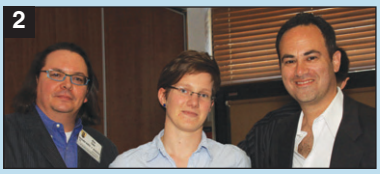
A feast for engineering-minded people, organized by special events chair Heather Lane, was provided in more than one way at the Kew Bridge Steam Museum, venue for the 128th Convention banquet. This museum, set within a magnificent and atmospheric waterworks from the Victorian era, houses two massive steam-powered beam engines used to raise water from underground sources. As a rare treat, one of these was fired up for the event, enabling delegates to experience the raw power and grace of this well designed and beautifully constructed technology before retiring to dinner in the main steam hall. During an excellent dinner, various other of the steam pumping engines were put into action by a volunteer "oiler" wearing white overalls, to the delight of those present.

STUDENT EVENTS AND CAREER DEVELOPMENT

An enthusiastic band of students made the most of the chance to take part in the London convention. An extensive program of education and student events was coordinated by Miroslav Jakovljevic. Starting with a packed meeting of the Student Delegate Assembly (SDA), Jakovljevic announced candidates for the coming year's SDA election as well as the finalists for the student recording competitions in numerous classes such as Jazz/Blues, World/Folk, Pop/Rock, and Classical. Both surround and stereo categories were offered, and students from around the world provided work of excellent quality to be analyzed by the judges.

Accreditation is becoming increasingly sought after by audio courses, and a session on the benefits of this was offered by the organization known as JAMES that is dedicated to making links between education and the media industries. JAMES is the education arm of the APRS, MPG, and UK Screen Association, and some of its representa- ➥

A large group enjoys Sunday night's banquet held at the Kew Bridge Steam Museum, which houses the world's largest collection of steam pumping engines.



EDUCATION EVENTS

1. Audio pros Theresa Leonard (top) and Ulrike Schwarz offer advice to students during mentoring sessions.
2. Magdalena Plewa was elected the new SDA vice chair, Europe and International. She is flanked by Alex Case (left) and John Krivit.
3. Education Fair: Annika Neidhardt of the Technical University of Graz was one of many educators from schools around the world who offered students information on their audio programs.
4. Career Fair: Richard Wear of Interfacio discussing employment opportunities with a student.
5. Education Forum Panel: *How Does It Sound Now? The Evolution of Audio* was the topic discussed by, from left, Akira Fukada, Ulrike Schwarz, Chuck Ainlay, George Massenburg, and Gary Gottlieb (chair).
6. Student Technical Paper Award: the 128th was the first convention with cowinners—Yesenia Lacouture Parodi and Alexander Lindau. They are flanked by Josh Reiss (left) and Peter Mapp.
7. Student Recording Competition: Emma Lain Fernandez (center) was one of many students to be recognized for excellence. She won 1st prize, Classical Stereo. She received a Schoeps microphone from Karin Fléing and a certificate from John Krivit.
8. Huge crowds attended every student event.

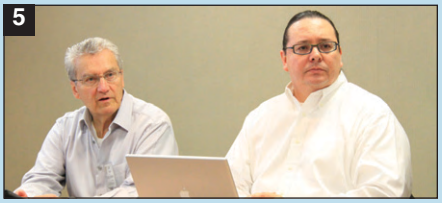
tives talked about getting a job in the industry and whether it is worth the trouble of putting oneself through college. Career and education fairs were held on the same day, giving students ample opportunity to explore the options open to them when considering how to further their professional lives. Mentoring sessions were also offered by a number of professionals who gave their time to help students looking for guidance. Gary Gottlieb chaired the Education Forum on the Monday that considered the evolution of audio and the tools educators need in order to be able to ensure continuity of quality in training. (For more information on student events see Education News on page 661.)

TECHNICAL COUNCIL AND STANDARDS

The Society's Technical Committees (TCs), which are coordinated by the Technical Council, track trends in audio in order to recommend special papers sessions, standards projects, publications, and awards in their fields. Open to all delegates, numerous meetings of these TCs were convened in London over the course of the four days. The diligent efforts of Bob Schulein, Jürgen Herre (who had to miss the convention owing to a new arrival in his family), and Jim Kaiser had ensured an active program in which a TC meeting happened virtually every hour of the first three days. The final Technical Council meeting, at which all the ideas were brought together, took place on the final day.

In the field of standards, the AES currently has over 65 working groups and task groups with international membership, which are engaged in writing standards covering fields including digital audio, preservation and restoration, acoustics, interconnections, networks, and file transfer. Thanks to the sterling efforts of Richard Chalmers, Standards Committee chair, and Mark Yonge, Standards manager, numerous working groups met during the 128th Convention, leading to a final plenary meeting on the last day at which the results of everyone's hard work were summarized.

Other AES committees also met during the convention to discusss plans for future events. An informal Board of Gov-



AES COMMITTEE MEETINGS

1. Awards: from left, Diemer de Vries, Jim Kaiser, Theresa Leonard, and Han Tendeloo.
2. Regions and Sections: Francis Rumsey, chair, led the meeting.
3. Technical Council: Jim Kaiser (left), vice chair, and Bob Schulein, chair
4. Conference Policy: from left, Karlheinz Brandenburg, vice chair, Francis Rumsey, Jan Pedersen, chair, and Thomas Sporer
5. Education: Don Puluse (left) and Alex Case, chair

ernors meeting was held on the last day of the convention (see page 610).

PUBLICATIONS

Working tirelessly from morning to night, Michael Williams, his family team, and assistants supported the convention with a well-stocked publications stand where one could buy AES publications and obtain copies of the convention proceedings. Just about any book in the wide range of media technology titles available today could be perused and purchased here, and the stand provided a focal point for meetings and discussions in the upstairs foyer area.

TECHNICAL TOURS

Exceptionally popular in a city so full of technical, historic, and artistic attractions, the eight technical tours so well organized by Richard Ranft were sold out quickly. Visitors to the convention interested in broadcasting could join tours to the BBC, including Broadcasting House in central London and Maida Vale Studios where many of the corporation's iconic operations have resided, such as the Radiophonic Workshop. Those with a taste for archiving could visit the British Library Sound Archive and also EMI Archives, which is the largest record company audio-visual collection in the UK. EMI's archives maintains a museum store of artifacts, including a range of recording equipment and machines associated with EMI's achievements in TV, radar, and medicine. For those interested in artistic venues there were tours to the National Theatre and the South Bank Centre, where the newly refurbished Royal Festival Hall is located. A visit to British Grove Studios, just a short walk from the convention hotel, and another to the Science Museum reserve collection, completed the line up. Those visiting the Science Museum reserve could see the extensive undisplayed holdings for the sound reproduction, acoustics, and telecommunications collections.

SUMMARY

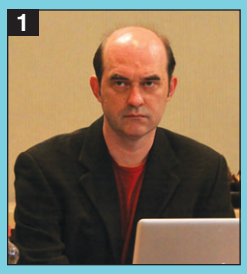
The 128th Convention was a truly stimulating event in a superb location, so well placed to benefit from the presence of an established media industry in the UK capital. The many delegates that took part in the technical program left the convention well fed with the latest research and technical information, as well as having had an opportunity to learn about both old and new audio engineering principles. The Society indeed made the most of the convention's return to the UK and provided a focal point for an industry working hard to adapt to rapidly changing business and technical conditions.

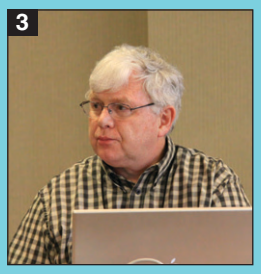
For a complete postconvention listing of events, go to www.aes.org/events/128/128thWrapUp.pdf. A CD-ROM with all the 128th papers can be purchased at www.aes.org/publications/conventions. Individual papers can be purchased from the AES E-Library at www.aes.org/e-lib, and see page 681 for an order form listing all the 128th papers. The list of 128th exhibitors begins on page 611.

BOARD OF GOVERNORS MEETS

An informal meeting of the AES Board of Governors was held on May 25 to hear reports from AES officials and standing committees:

1. Peter Cook, USA/Canada Eastern Region vice president
2. Bob Lee, secretary
3. Bob Schulein, Technical Council chair
4. David Bowles, governor
5. Jim Anderson, past president, Convention Policy Committee chair, and Nominations Committee chair
6. Wieslaw Woszczyk, governor and Laws and Resolutions Committee cochair
7. Joel De Brito, Latin America Region vice president
8. Roger Furness, executive director
9. Sean Olive, USA/Canada Western Region vice president
10. Diemer de Vries, president
11. Francis Rumsey, Regions and Sections Committee chair; Jan Abildgaard Pedersen, Europe Northern Region vice president and Conference Policy Committee chair; Jim Kaiser, president-elect, Laws and Resolutions Committee cochair, Technical Council vice chair
12. Alex Case, Education Committee chair; John Krivit, Education Committee vice chair; Han Tendeloo, Strategic Advisory Group chair
13. Garry Margolis, treasurer and Finance Committee chair; John Vanderkooy, editor; Jay Fouts, legal counsel
14. Richard Chalmers, Standards Committee chair





128th Exhibitors

London • 2010 May 23–25

A.P.R.S.
Totnes, UK
www.aprs.co.uk

AEA
Pasadena, CA, USA
www.ribbonmics.com

Allen & Heath
Penryn, UK
www.allen-heath.com

AMPS
London, UK
www.amps.net

***Audio Media**
Saint Ives, UK
www.audiomedia.com

***Audio Precision**
Beaverton, OR, USA
www.ap.com

Audio Pro
Hertford, UK
www.audioprointernational.com

B & H Photo - Video - Pro Audio
New York, NY, USA
www.bhphotovideo.com

BAE
Van Nuys, CA, USA
www.baeaudio.com

Brüel & Kjær Sound & Vibration
Nærum, Denmark
www.bksv.com

Cartec Audio
London, UK
www.cartecaudio.com

CB Electronics
Charvil, UK
www.colinbroad.com

Centre for Digital Music / Queen Mary University of London
London, UK
www.elec.qmul.ac.uk/digitalmusic

Clear-Com
Alameda, CA, USA
www.clearcom.com

Crane Song
Superior, WI, USA
www.cranesong.com

CSR
Cambridge, UK
www.csr.com

DAD – Digital Audio Denmark
Gentofte, Denmark
www.digitalaudio.dk

DK-Technologies
Clanfield, UK
www.dk-technologies.com

DSPECIALISTS
Berlin, Germany
www.dspecialists.de

***DTS**
Limerick, Ireland
www.dts.com

***Fraunhofer IIS**
Erlangen, Germany
www.iis.fraunhofer.de/amm

G.R.A.S. Sound & Vibration
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www.gras.dk

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www.neumann.com

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Gotham Cables
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www.gotham.ch

Grace Design
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www.gracedesign.com

Hall Stage
Luton, UK
www.hallstage.com

ioCo
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www.ioco.ltd.uk

Iosono
Erfurt, Germany
www.iosono-sound.com

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www.jlfisher.com

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www.mcaudiolab.com

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