

EXHIBITS

145TH

AES CONVENTION

Javits Convention Center
New York, USA
October 17–20, 2018

CONVENTION REPORT

Meeting once again at the Javits Center in New York for the audio engineering event of the year, professionals gathered for the 145th AES Convention between October 17th and 20th. For a second time co-located with the NAB New York Show, this more than doubled the number of visitors attending both events' exhibitions. The 145th Convention was led by chairs Paul Gallo, Valerie Tyler, and Jonathan Wyner, with the Society also celebrating 70 years of its contributions to the art and science of audio engineering. The growth of the Society through some of the most innovative

years in audio technology development has included the burgeoning fields of audio for gaming, audio for virtual and augmented reality, and spatial audio. Committee members from a variety of backgrounds and expertise had been selected to put together a compelling technical program and special events.

Alongside the exhibition, four days of in-depth presentations and insights from the most influential names in professional audio offered an array of ways to listen, learn, and connect with the heart of the professional audio industry, from hundreds of scientific research presen-

Convention chairs
Agneszka Roginska
and Paul Gallo

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COME

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Convention chairs Paul Gallo, Valerie Tyler, and Jonathan Wyner welcome attendees to the convention.

tations to technology demonstrations, onstage panels, and interviews offering exclusive behind-the-scenes details covering the complete spectrum of audio production. "The excitement of the attendees of AES New York 2018 was evident at every turn across the four days of the convention," noted Jonathan Wyner. "Time and again we heard how attendees were moved, motivated and educated by the unparalleled Technical Program content. Exhibitors were enthusiastic about the opportunities the exhi-

bition offered to connect with their customers."

Convention cochair Valerie Tyler noted, "We are extremely grateful to our track chairs and committee members who put together the program and events this year, dedicating their expertise and an enormous amount of time and effort to give life to the convention. In addition, we'd like to thank the amazing and dedicated AES HQ staff, as well as the outstanding presenters and attendees who make the convention possible every year."

OPENING CEREMONY AND AWARDS

Opening the convention to a packed hall, AES President David Scheirman welcomed visitors to New York, thanking everyone who had shed “blood, sweat, and tears” to put this event together. “Here we are after 70 years,” he said “bringing leading ideas and people together,” introducing the convention chairs.

Paul Gallo offered special thanks to the headquarters staff and large number of volunteers who had brought the whole thing to fruition. His particular thanks were offered to Valerie Tyler and Jonathan Wyner, and he welcomed feedback from those present as to the rightness of the current policy of bringing the convention to New York each year. Paul also offered a special remembrance of Geoff Emerick who died recently, asking for a moment of silence. Jonathan Wyner praised the willingness of the committee volunteers to bring their professional experience and time to bear on the organization of the convention. He pointed out that the AES had tried to provide a forum at the convention for “what comes next” as well as what had come before.

Introducing the awards at the 145th Convention, Awards Committee chair John Krivit first introduced AES Journal editor Bozena Kostek to oversee the publications awards. Rob Maher was asked to announce the best student paper award, which went to Emre Çaki and Tuomas Virtanen for “Musical Instrument Synthesis and Morphing in Multidimensional Latent Space Using Variational, Convolutional Recurrent Autoencoders.” Papers chairs Braxton Boren and Areti Andreopoulou announced the best peer-reviewed paper, which went to Wesley Bulla and Paul Mayo for “The Effect of Pinnae Cues on Lead-Signal Localization in Elevated, Lowered, and Diagonal Loudspeaker Configurations.” Krivit then proceeded to offer warm congratulations to numerous deserving AES awardees in reception of Board of Governors, Fellowship, and Distinguished Service Awards. You can find a full list of awards presented at the convention in the panel on this page.



David Scheirman, AES president, opens the convention.



Convention chairs: from left, Jonathan Wyner, Paul Gallo, and Valerie Tyler

AES AWARDS AT THE 145TH

FELLOWSHIP AWARD

GUSTAVO BORNER for outstanding achievements in the field of audio production and for your work in the worldwide dissemination of audio knowledge

CHRISTOPHER FREITAG for 22 consecutive years of honorable and dedicated service to the Society overseeing and insuring the integrity of AES Elections

LESLIE ANN JONES for recognition of decades of exemplifying the highest standards of audio production, for selflessly sharing your knowledge and experience, and for championing the role of women in the audio industry

HYUNKOOK LEE for achievements in research, the advancement of audio science and technology, and contributions in the Society's Technical Committees

ANDRES MAYO for dedicated service to the Society in various leadership positions and outstanding achievement in the audio recording industry

BRUCE OLSON for outstanding contributions to AES Standards and to sound reinforcement system design and practices

XIAOJUN QIU for outstanding contributions to the advancement of active noise control technology and in the development of audio-acoustical products

RAFA SARDINA for outstanding achievements in the field of audio production

FRANK WELLS for advancing the audio industry through decades of broad contributions to the Society as a technologist and as a professional audio journalist

DISTINGUISHED SERVICE MEDAL AWARD

DAVID BIALIK for over three decades of service to AES convention committees and the creation and development of the conventions' broadcast track

BOARD OF GOVERNORS AWARD

EDDIE BØGH BRIXEN for cochairing the 2017 International AES Conference on Sound Reinforcement

EDGAR CHOUERI for cochairing the 2018 International AES Conference on Audio for Augmented and Virtual Reality (not present)

LINDA GEDEMER for cochairing the 2018 International AES Conference on Audio for Augmented and Virtual Reality

MATT KLASSEN for chairing the 2018 International AES Conference on Audio for Augmented and Virtual Reality

ANDRES MAYO for cochairing the 2017 AES Latin America Conference in Havana, Cuba

VALERIA PALOMINO for cochairing the 2017 AES Latin America Conference in Havana, Cuba

ALBERTO PINTO for cochairing the 144th AES Convention in Milan

DANIEL RAPPAPORT for cochairing the 2017 International AES Conference on Forensics [Jeff Smith accepted Daniel's award for him]

AGNIESZKA ROGINSKA for cochairing the 143rd AES Convention in New York

LAWRENCE SCHWEDLER for cochairing the 2018 International AES Conference on Audio for Augmented and Virtual Reality

JEFF SMITH for cochairing the 2017 International AES Conference on Forensics

NADJA WALLASZKOVITS for cochairing the 144th AES Convention in Milan



Fellowship Awards are presented to, from left, Gustavo Borner, Christopher Freitag, Leslie Ann Jones, and Hyunkook Lee



Fellowship Awards are presented to, from left, Andres Mayo, Bruce Olson, Xiajun Qiu, and Rafa Sardina



Fellowship Award is presented to Frank Wells.

Distinguished Service Medal is presented to David Bialik.

Board of Governors Awards are presented to Eddy Bøgh Brixen and Linda Gedemer.



Board of Governors Awards are presented to, from left, Matt Klassen, Andres Mayo, Valeria Palomino, and Alberto Pinto.



Board of Governors Awards are presented to Daniel Rappaport (accepted by Jeff Smith), Agnieszka Roginska, Lawrence Schwedler, and Jeff Smith.



Board of Governors Award is presented to Nadja Wallaszkovits.

Presentation for Best Student Paper .

Presentation for Best Peer-Reviewed Paper.

**145TH
CONVENTION
AWARDS
PRESENTATION**

KEYNOTE

Jonathan Wyner was pleased to introduce keynote speaker Thomas Dolby. Since 2014 Dolby has been Homewood Professor of the Arts at the Peabody Institute of Johns Hopkins University. Reading through his bio, we are presented with a dizzying list of accomplishments, said Wyner. In his talk “The Conscious Sound Byte”



Thomas Dolby explains “The Conscious Sound Byte.”

Dolby pointed out that we can perform music in, say, an orchestra because we are humans, using the senses to provide feedback from fingers, ears and so forth, enabling us to work together as one. Audio files, plugins and the like, on the other hand, are dumb elements, not behaving in a mutually aware fashion. In video games, for example, you get AI elements that enable autonomous groups to work together to achieve something. Where would movies like *Lord of the Rings* be without artificial intelligence, he asked? In many of these other areas ideas like nesting, flocking, swarming are being used to enhance creative systems, but in audio we still seem to be rather stuck with linear file formats, linear processing tools, and a concept of linear entertainment. As an industry we are a bit behind perhaps, but this presents us with an opportunity. As a community we could, for example, sit down and work out a more useful file format that would enable a greater degree of musical interactivity, based on some of the ideas inherent in existing proprietary formats.

It took the industry a long time, he said, to realize that music wasn’t so much about adherence to certain big company logos and marketing, but more similar to the idea of gathering around a player in a market square who collected contributions from the audience so that he could go shopping at the end of the day. Using examples from his career to illustrate his talk, Dolby went on to discuss how students could be encouraged to be creative with limited resources. For under \$1000 it’s possible to use an iPad to access a lot of useful tools, say, which can reduce the pressure on “bricks and mortar” facilities. Once you get into a field like virtual reality, he said, it’s the player that decides what happens, so students have to find a way of navigating the complexities of how to author audio and music for that environment. To demonstrate a useful interactive game audio environment, Dolby introduced Ryan Dunn from Audiokinetic. After a fascinating set of insights into various aspects of how things could proceed, Thomas concluded with the seminal song he’d produced with the help of celebrity scientist Magnus Pike in the UK, called “She Blinded Me with Science.” He got the assembled audience on its feet, concluding by saying “enjoy the rest of AES, you’ve been a really nice audience.”



Crowds listen attentively at Thomas Dolby’s keynote lecture.

EXHIBITION

Over 300 brands were represented on the exhibition floor, including over 35 new exhibitors. As noted in a recent AES press release, notable exhibitors were thrilled with the event. “SSL is one of the only console manufacturers in the world that is active in the Studio, Live, and Broadcast industries. We always look forward to AES in NY, as it is guaranteed to deliver a great turnout across all segments of our business,” said Piers Plaskitt, CEO of Solid State Logic, Inc. “2018 was no exception, and we were busy right through the last hour on day three.” Universal Audio’s Erica McDaniel stated, “AES is a great way to connect with the core of professional audio recording and a great platform to launch new products that serve this community best.” John Monitto of Meyer Sound said “This past AES convention at Javits Center in New York drew some of the top audio professionals who we value as a manufacturer. The convention was well attended by those professionals who visited the exhibit booths, demo rooms, and the workshop sessions.” Producer/engineer (and regular attendee of AES Conventions) Russ Long summed it up, saying, “Once again the AES New York convention was an outstanding event. The mood was positive across the board, and it was reflected when I spoke to fellow attendees, visited exhibitor’s booths and demo rooms, and attended seminars. Highlights of the many impressive products I saw include Audio-Technica’s new wireless system, the SSL Fusion analog stereo bus processor, Yamaha’s Rivage software update (that adds Theater Mode), Triad-Orbit’s Starbird mic stand (and their growing list of stand accessories), the Zylia ZM-1 spatial sound microphone, and Rupert Neve Design’s 5211 dual mic preamp—and that’s just the beginning.”

During the convention Wolfgang Fraissinet, President of Neumann, was presented with a “Service to Industry” award by AES international sales director Graham Kirk and multi-GRAMMY Award-winning engineer/mixer Al Schmitt, to mark the company’s 90th anniversary; its long, standard-setting legacy of



An interested visitor to the show floor studies one of the many pieces of gear.



Crowds throng the exhibition floor at the Javits Center.

engineering prowess in the development of microphones for studio and live performance; and its advancement of microphone technology.

A number of companies had demo rooms at the convention where visitors could experience their latest technology. Dolby Laboratories and JBL Professional presented “Immersive Audio for the Modern Control Room” where listeners could experience the latest music, film, and broadcast content created in Dolby Atmos and played back via the new JBL 7 Series studio monitor system. Sennheiser and Neumann discussed “The Future of Audio” in their room, allowing visitors to learn about and listen to Sennheiser’s AMBEO 3D audio technology played through a 9.1 Neumann speaker system. Yamaha Commercial Audio demonstrated the new Yamaha DZR line of powered loudspeakers and DXS-XLF powered subwoofers in addition to the new CZR Series of passive speakers. In Augspurger’s room, owner Dave Malekpour provided scheduled clinics, also showing systems from their SOLO, DUO, and TREO series, including a Duo 15-Sub 18 system. Warwick Acoustics demonstrated headphone systems using patented electrostatic audio transducers and a unique system approach, including the Sonoma Headphone System, and a new product designed for the demanding professional audio market. In the Meyer room one could experience the company’s new Bluehorn system throughout the convention, as discussed in John Meyer’s Heyser lecture (see below).

SHOW FLOOR EDUCATIONAL OPPORTUNITIES

For those registered with Exhibits Plus badges, there were a large number of free educational opportunities presented on stages in the exhibition area. The AES Project Studio Expo Recording Stage offered three full days of rapid-fire presentations designed to educate, entertain, and answer questions. Three full days of the best speakers in the business were

delivered in association with *Sound On Sound* magazine, presented by Grammy-nominated engineer/producer Glenn Lorbecki. These included a session on “Hi-Resolution Audio: It’s Not Rocket Science” with Leslie Ann Jones,

and “Bluetooth Recording: Now Professional Grade” with Glenn Lorbecki and Anthony Mattana. New sessions for this year included a specialized set of tutorials covering vocal recording, from choosing the right vocal mic, to laying vocals within the track, to making your vocals stand out properly in the mix. Sponsors for the PSE Recording Stage include Antelope Audio, Eventide, Focusrite, Genelec, Meyer Sound, Neumann, Universal Audio, and Waves.

On the Live Production Stage, the 145th Convention offered expert advice for the broad spectrum of live sound engineers with an emphasis on the practical, bringing professionals with decades of experience to the stage to inspire and educate attendees. Three days of presentations covered distinct applications of live production in broadcast, theater, and event sound including “Miking the Sports Broadcast” with Ben Escobedo, “Mixing a Musical” with Matt Larson and Scott Sanders, and “The 7 Most Common Wireless Mic Mistakes (and What You Can Do about Them)” with Karl Winkler.

Introduced by Terry Holton of Yamaha, the Audio-over-IP Technology Pavilion was a significant new initiative created by the AES in partnership with the Alliance for IP Media Solutions (AIMS). The pavilion promoted professional IP media networking as well as providing the latest information about this rapidly developing field through practical demonstrations and an extensive presentation program. Booth 458 on the show floor housed “AES Mix with the Masters” during which industry masters, including Peter Katis,

Al Schmitt, and Chris Lord-Alge, took visitors through their special tracks and how they perform their magic. AES and the International Music Software Trade Association (IMSTA) invited visitors to



Visitors in the Yamaha/Nexo demo room.



Learning to Mix with the Masters with Peter Katis.



Leslie Ann Jones and Chuck Ainlay on PSE stage.



Live Production panel, “Mixing a Musical.”

experience the latest in virtual tools and techniques at this year's "Software@AES" Pavilion area. Activities included three days of music software demonstrations, together with DAW and plug-in clinics. PMC's "Masters of Audio" sessions in the combined PMC and Immersive Audio demo room included "Making of *The Greatest Showman* in Dolby Atmos 7.1.4" presented by Greg Wells.

MAKING TRACKS

The 145th committee included chairs for each of a number of specialized tracks, providing a program of events for professionals working in different areas of audio engineering.

Among the many tracks offered at the convention was a compelling one on Game Audio and XR (XR standing for extended reality). XR is meant to encompass various aspects of audio for augmented and virtual reality, immersive audio, and games. The track was chaired by Steve Martz, Michael Kelly, Gavin Kearney, and Agnieszka Roginska. Among the highlights were case studies of audio production for top games and sessions explaining new audio engines and tools for use in systems such as UE4 and Wwise.

Sound reinforcement was supported by sessions such as Bob McCarthy's "Cookbook Approach to Sound System Optimization" and "Designing for Broadway" with Kai Harada. The Audio Builders Workshop, chaired by Owen Curtin, was inspired by the Boston AES Section, hosting seven events at the convention including: a Custom Gear Show, during which popular projects and modifications were reviewed; a Builders Workshop, during which attendees could step through the entire process of designing and testing a circuit; and DIY Design, Code and Build Workshops on the Saturday including "Build Your Own Recording Equipment."

The ever-popular Broadcast and Online Delivery track, coordinated by David Bialik and assistant chair Fred Willard, included a presentation entitled the 80th Anniversary of The Mercury Theater's "The War of the Worlds," hosted by New York Public

Radio on October 19 at NYC broadcast venue, The Green Space. Video of the event is now available online on the AES YouTube channel at <https://youtu.be/76ZjJnf8nWw>. The event featured Frank Beacham, who worked with "War of the Worlds" director and narrator Orson Welles, discussing the dramatic tricks he used to turn the broadcast into a compelling and believable drama.

The event included recordings of the behind-the-scenes story in the CBS Studio that frantic night. Further, SueMedia's Sue Zizza and David Shinn along with the HEAR Now Festival and Voicescapes Audio Theater produced and performed live recreations and interpretations from "The War of the Worlds" alongside playback of the newly remastered recording of the original broadcast, and discussion of the initial reactions to the 1938 broadcast by audience members and the public.

In the Audio for Cinema track chaired by John Whynot, legendary film score mixer Alan Meyerson elucidated his approach to mixing multistemmed scores in the box, using AVID Pro Tools, and Robert Marshall kept the audience engaged with his presentation on collaboration at a distance, using real-time remote recording tools for scoring and post audio. That track was complemented by the Immersive and Spatial Audio track, which included a remarkable pair of half-day sessions on Facebook 360 media production. Covering the end-to-end

workflow for spatial audio design and asset preparation of 360 and 180 immersive videos, the nearly sold-out events were led by Product Manager Abesh Thakur and AES past president Andres Mayo. Armed with laptops, headphones, and supplied asset files to provide real-time hands-on immersion, an audience of preregistered attendees eagerly participated in each half-day session. Mayo noted, "The Facebook 360 event was an amazing experience for all of us, presenters and attendees. It was truly the first time that we could have three-hour-long hands-on workshops at an AES Convention. It opens up a new world of possibilities for high-tech companies to



Participants in the Audio Builders Workshop custom gear show.



Broadcast panel: from left, David Bialik, Fred Willard, Skip Pizzi, Jim Starzynski, Tim Carroll, Kazuho Ono, and Robert Bleidt.



Participants in the Facebook 360 workshop.



The 145th convention committee gathers for a group photo.



Julia Caruso



Glenn Lorbecki



Richard Wollrich



Bob Lee



Scott Leslie



Henry Cohen



Game Audio and XR team



Bob Moses and Lisa Roy



Recording and Production team



Owen Curtin



Mitchell Graham, Kyle Snyder



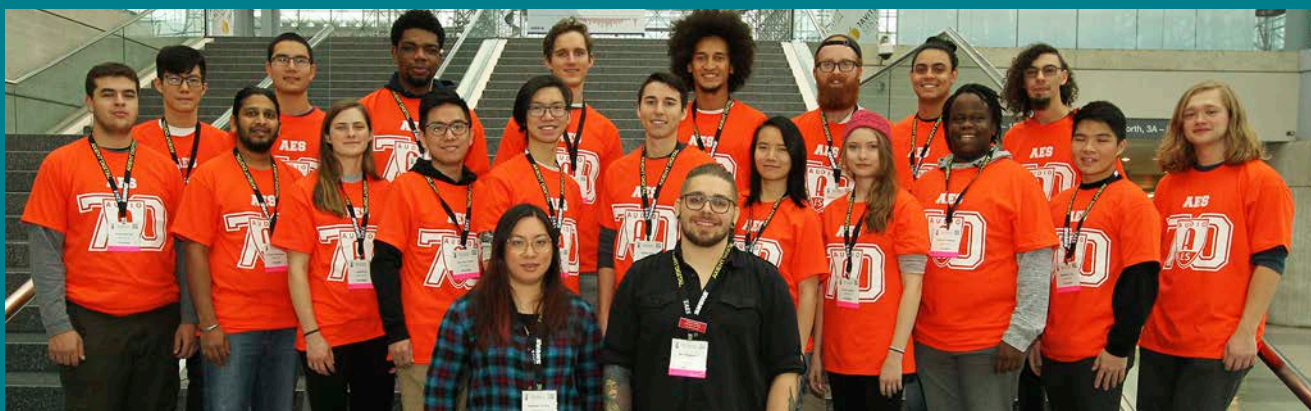
Fred Willard and David Bialik



Papers chairs, Braxton Boren and Areti Andreopoulou



Dan Mortensen



Student volunteers with coordinators Kathleen Zhang and Matt Kulewicz.

AES THANKS THE 145TH CONVENTION COMMITTEE

show their tools and teach how to use them.”

Among additional tracks offered, packed full with exceptional opportunities for delegates, were: Archiving & Restoration chaired by Jessica Thompson; Historical chaired by Dan Mortensen; Networked Audio chaired by Bob Lee; Product Development chaired by Scott Leslie; Recording and Production co-chaired by Jim Kaiser, Michael Romanowski, and Paul “Willie Green” Womack; Sound Reinforcement cochaired by Henry Cohen and Mac Kerr; and Student Events chaired by Mitchell Graham.

HEYSER LECTURE

Introduced by Steve Hutt and Jürgen Herre of the AES Technical Council, the Richard Heyser Memorial Lecturer at the 145th Convention was AES Silver Medal holder, John Meyer. As Herre pointed out, Meyer’s career in live sound began in the 1960s, with over 50 years of research and development achievements to his name. His lecture, “Taking the Room Out of the Loudspeaker: New Tools for Transparent Reproduction,” began with a look back at his early days, including some early stereo broadcasts using dual FM radio transmitters. In those days engineers ran the radio stations and Meyer got his license at a very young age, enabling him to start working in the business. This led to various experiments with designing loudspeakers, which he related in humorous fashion, showing how various early learning experiences shaped his determination to do better. In work with McCune he tried various ideas including using delay lines that could help to steer the sound image from stage loudspeakers, and the early days of hanging loudspeakers at venues.

In 1973 Meyer used expensive B&K and Hewlett Packard analysis equipment to do experiments similar to those in time delay spectrometry conducted by Dick Heyser. An early PDP 11 computer, difficult to use, enabled doing things like FFT analysis and windowing on measurement data. No one had been designing linear loudspeakers in those days, he explained, so he began work on a studio monitor system that aimed to remedy this. Novel subwoofer designs followed, working with the Grateful Dead. It was a very rich time in the 1970s, he said, when a lot of exciting developments happened in audio engineering. One encountered in Meyer a young engineer with a relentless interest in improving the quality of sound reproduction, and a willingness to employ all the new tools becoming available. Flat frequency and phase response across as much of the

spectrum as possible was the holy grail consistently sought after, and the idea of using music as a test signal emerged (as opposed to using sine sweeps, which took hours).

Later on in his talk Meyer discussed the five-year Bluehorn project, attempting to push all the high-frequency resonances in the loudspeaker out to some 35 kHz. The resulting system has a flat frequency and phase response right up to 22 kHz. For the first time, he said, we could begin to separate the room from the loudspeaker,

one of Richard Heyser’s main goals too. The so-called M-Noise test signal, devised by the company as an alternative to pink noise, has characteristics that are rather more like music than noise, and enables a user to discover the maximum linear output of a loudspeaker when using music as a source signal.

Accepting the Certificate of Recognition as Heyser Memorial Lecturer from the Officers of the Technical Council, John Meyer said that it was truly an honor to have been invited to give this talk, as Richard Heyser had been an inspiration to him.

TUTORIALS FOR ALL

Among useful educational events designed to bring everyone up to speed on important audio topics was a tutorial on “Network Fundamentals for Audio Engineers,” presented by Patrick Killianey. By the end of the session, it was claimed, the people attending would have the concepts necessary to design a medium-sized audio

network, as well as suitable language to interact with an IT department. Patrick based this on a YouTube video series he has presented in the past, and which has become part of some college curricula.

As part of the Product Development track a valuable session from AES Silver Medal holder Wolfgang Klippel dealt with “Designing Hardware and Software Components in Modern Loudspeaker Systems.” Klippel explained how to get more out of transducers using modern signal processing tools, looking at the simulation tools that can be used to exploit these opportunities in optimization of transducer and amplifier design.

Alongside these and other useful tutorials, “Telephonometry: The Practical Acoustics of Handsets, Headsets, and Mobile Devices” from Christopher Struck was presented in association with the Technical Committee on Audio for Telecommunications. Here Christopher introduced the audience to the basics of acoustic measurement for analog and digital telephones, as well as issues arising with extended



Top, the crowd enjoys John Meyer’s Heyser Lecture on “Taking the Room out of the Loudspeaker.”
Bottom, John Meyer (second from left) is presented with a certificate honoring his contribution by officers of the Technical Council.

bandwidth devices. Delegates got to hear about the use of artificial ears and mouths, as well as various international standards in the field.

TECHNICAL PAPERS AND ENGINEERING BRIEFS

Papers chairs Braxton Boren and Areti Andreopoulou had worked hard to bring together a wide selection of papers from authors working in audio research and development around the world. There were also numerous engineering briefs, which are shorter and often more practically focused reports on an aspect of audio engineering that may not warrant a full paper.

Principal among the themes of papers presented at the convention were perception, signal processing, transducers, and spatial audio, with additional topics of education, semantic audio, acoustics, and applications. A popular paper, judging by downloads since the convention has been Sean Olive and colleagues' "Survey and Analysis of Consumer and Professional Headphones Based on Their Objective and Subjective Performances." In this paper a set of metrics based on frequency response developed previously to predict sound quality preferences of headphones were used on 156 consumer and professional headphones, and the preference predictions were compared to ratings given by consumer organizations. The interesting outcome was that headphones made to current IEC/ITU/EBU guidelines have significantly lower quality ratings.

Another popular paper was given by Adrian Celestinos, Pascal Brunet, and Glenn Kubota of Samsung Research on "Non-Linear Optimization of Sound Field Control at Low Frequencies Produced by Loudspeakers in Rooms." Here they concentrated on the question of seat-to-seat variation in response, rather than simply reducing the energy at room resonances or eliminating them with interference. An interesting feature is that the loudspeaker position is not restricted in this approach. And nonlinear optimization was used to improve the time response, resulting in a tight bass response.

Among some fascinating engineering briefs was one by He Peng and Josh Reiss



Masataka Nakahara explains a point on his ebrief poster.

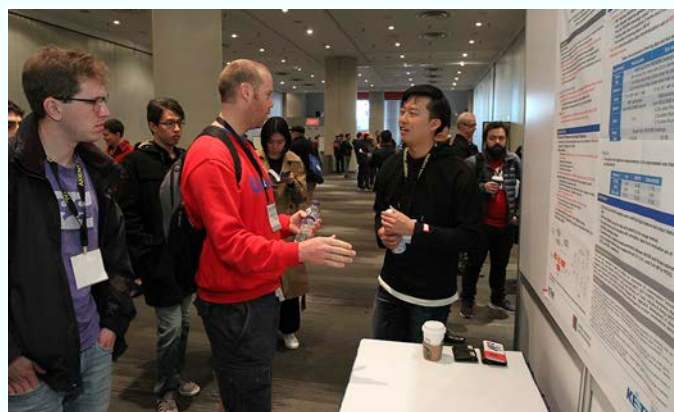
of Queen Mary University of London, which tried to discover whether we can hear differences between pouring hot and cold water. While the results were not totally conclusive, they provide an interesting insight into the different components of sound that are heard with pouring water and how temperature affects them. Craig Ciecura and colleagues from the University of Surrey looked into what media devices people own in "Survey of Media Device Ownership, Media Service Usage, and Group Media Consumption in UK Households." They found that there is already significant usage of wireless and smart loudspeakers and that people spend more time listening to media with others than alone. It suggested a need for systems that can adapt to the needs of more than one person within the same environment.

SPECIAL EVENTS

Included in a set of compelling special events, open to all attendees, was a guest appearance, in character, by Derek Smalls "formerly of the Band formerly known as Spinal Tap." In "Smalls Change—Deconstructing a Record" Smalls deconstructed his record, "Smalls Change (Meditations Upon Ageing)," with producer/mixer CJ Vanston, to the delight of a large audience. Before that, a tribute had been offered to engineer and producer Geoff Emerick who had died recently. He helped to produce the legendary sound of the Beatles,

Three fascinating "Lunchtime Keynotes" included Rich Jensen on opportunities afforded by the new digital technologies such as Blockchain, Smart Contracts, Music Metadata, and the Creative Passport. On Friday Prince Charles Alexander explored Hip-Hop's innovating role in the fast-paced world of music technology, and on the final day multiple GRAMMY-nominated producer, musician, and mixing engineer Greg Wells looked at what makes a tool intuitive and easy to use, in "Please Make My Job Easier."

On the first day of the convention, diversity and inclusion advisor Leslie Gaston-Bird had put together an AES Diversity and Inclusion Committee Town Hall. The committee strives to ensure diversity in the AES worldwide and the audio industry as a whole by improving accessibility, welcoming diverse genres, embracing emergent audio fields and research, and radiating inclusiveness to all gender and gender identities, races, physical abilities, ages, and nationalities. Visitors were given an update on the activities of the committee to date, and questions from audience members were taken.



Top: Evangelos Angelaki explains his research.

Bottom: A lively discussion at one of the many poster presentations.



Leslie Gaston Bird leads the Diversity and Inclusion panel.



CJ Vanston and Harry Shearer (aka, Derek Smalls)



Prince Charles Alexander gave Friday's lunchtime keynote.



From left, Ron McMaster, Bob Ludwig, and Andres Mayo



Maureen Droney and Al Schmitt

SPECIAL EVENTS AT THE 145TH

The second day of the convention began with the AES Platinum Latin Producers and Engineers Panel. After lunch delegates were kept engrossed with presentations such as "Al Schmitt—On the Record," "Mastered by Bob Ludwig: An Exploration of His Career and Techniques," and on the PSE stage "The P&E Wing Presents: Getting Paid and Credited—Lessons in Self Preservation." The day concluded with Capitol Studios' Paula Salvatore and Candace Stewart of EastWest Studios presenting "Music Mavens: Managing Legacy Studios in Challenging Times." The evening offered an organ recital at the Church of the Ascension on West 10th Street, during which Graham Blyth delighted the audience with works on the French-made instrument, including Marchand's Grand Dialogue in C.

Included on day three was a Studio Stories event, "Remastering Jackson Browne's Running on Empty" with moderator Ken Reeves of Universal Music Group. It featured mastering engineers Reuben Cohen, Gavin Lurssen, and Ron McMaster, as well as guitarist Danny Kortchmar, who served as lead guitarist on the original album and contributed vocal and songwriting skills. The panel "METAlliance—The Mission" discussed the ongoing efforts of a group of internationally award-winning engineers who aspire to carry forth the craftsmanship music deserves.

On the final day of the 145th convention, first up was a look at "Platinum Mastering—Past, Present, Future: Changes in Audio Mastering Technology/Aesthetics," with mastering engineers Bob Ludwig, Andres Mayo, and Ron McMaster. Michael Beinhorn and Frank Filipetti wound up the show with "Cracking the Creativity Process." "With all this emphasis on technology and so much less on individual expression, we feel that something essential is getting lost in the process," they had said in a written introduction to the session, engaging the audience in a frank discussion about what to do about it.



Top, a group of student prizewinners, with Kyle Snyder.



Bottom, a busy Education and Career Fair engages students.

STUDENT AND CAREER DEVELOPMENT

The Student and Career track, chaired by Mitchell Graham in conjunction with Education Committee chair Kyle Snyder, kicked off with a useful session “If I Can do it, You Can do it: Tony Bongiovi’s Career at Motown, the Power Station, and Beyond.” “What do you do when it seems no studio will hire you?” it was asked in the promotional text for the event. “How do you go straight from high school to Motown? You don’t wait for opportunities to come to you. You don’t hope for good luck. You do the work. You knock on doors. You study. You listen. And you go for it” During the session Tony Bongiovi shared the lessons he had learned during his career and that could be useful to anyone trying to enter the industry today.

Ian Corbett and Nadezhda Rakhmanova looked into techniques for miking jazz and other acoustic music so as to scale it appropriately for different sizes of venue. There were also lots of other opportunities for students to be mentored by well-known professionals in different walks of audio life, including recording, design and more, particularly facilitated by SPARS. Mentoring was partnered by opportunities for students’ work to be critiqued in workshops and judged in competitions, including the “Saul Walker Student Design Competition.” MathWorks supported the first AES MATLAB Plugin Student Competition and Showcase, which invited students to design a new kind of audio production VST plugin using MATLAB Software. The competition provided students with the opportunity to challenge both their signal processing skills and creativity, and to share their results with the audio engineering community. Brecht De Man also brought his “Audio Effects in Sound Design 101” to students, showing how a basic set of processors can be used to achieve creative results.

During the Student Delegate Assembly a new vice chair for

North and Latin American was elected in the person of Alex Dempsey. Judges’ comments and awards were also presented for the Recording Competitions and Design Competitions, and plans for future student activities at local, regional, and international levels were summarized.



AES committee meetings at the convention. From top: Kevin Gross and Rich Cabot in a Standards meeting Jürgen Herre, Steve Hutt and Michael Kelly at the Technical Council Tony Schultz (right) and AES VPs at a Regions and Sections meeting Kyle Snyder (center) chairs the Education Committee

AES MEETINGS DURING THE CONVENTION

During the convention a full program of Technical Committee and Standards Committee meetings was held. The Technical Council and its Technical Committees respond to the interests of the membership by providing technical information at an appropriate level via conferences, conventions, workshops, and publications. They work on developing tutorial information of practical use to the members and concentrate on tracking and reporting the very latest advances in technologies and applications. Whenever possible, they assist papers chairs, and convention and conference chairs in preparing papers sessions, and facilitate meaningful demonstrations of new technologies in order to increase the experiential awareness of our members. The convention was marked by Steve Hutt taking over the leadership of the council from Francis Rumsey on the day immediately following.

The Standards Committee, led by Standards Committee chair Bruce Olson and manager Richard Cabot, is at the forefront of defining and codifying best practices for audio engineering. From its first standard on playback equalization in 1951, through its pioneering work in digital audio interfaces (AES-3) and

measurement (AES-17), up to the recent work in networking digital audio (AES-67), the AES has become the premier organization for developing standards for audio engineering. This work is international in scope, uniting researchers and practitioners from around the world, creating standards with broad and lasting impact.

All of the AES’s standing committees met during the convention

to move forward the Society's policy in a number of critical areas. These included the Education, Publications Policy, Conference and Convention Policy, Awards, Nominations, Historical, and Laws & Resolutions Committees. There was also a full Board of Governors meeting immediately following the close of the convention on the last day.

BEHIND THE SCENES

Facilities chair Julia Caruso did a spectacular job of pulling together all of the resource requirements for the technical program, along with the AV team hired for the event. A team of student volunteers worked exceptionally hard to make sure everything was in order for the participants. The headquarters

staff had gone beyond the call of duty to ensure that all the back-office work needed to facilitate a successful convention was done in time and to a high standard.



The AES Board of Governors, committee chairs, and officers, gather for a photograph prior to the board meeting at the end of the convention.

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