CONVENTION REPORT

CONVENTION REPORT

137. AES

Vielcome to the 137th AES Convention

888



Los Angeles Convention Center Los Angeles, USA October 9–12, 2014

J. Audio Eng. Soc., Vol. 62, No. 12, 2014 December

The 137th Audio Engineering Society Convention, held Thursday, October 9, 2014, through Sunday, October 12, 2014, at the Los Angeles Convention Center in Los Angeles, California, was the place to be if you have anything to do with the audio industry. The exhibit floor, panels, and technical sessions were packed all four days, and with 15,403 registered attendees and 307 exhibitors/sponsors AES137 far surpassed any West Coast AES Convention in the last 10 years or more. At show close, AES reported a 28% increase in registration since the last time the convention was on the West Coast (133rd AES Convention in San Francisco in 2012).

Valerie Tyler and Michael MacDonald, convention committee cochairs, and their team created one of the most ambitious and comprehensive schedules of workshops, panels, and technical programs in AES convention history.

"I cannot put into words how thrilled I am with the 137th AES Convention," stated Bob Moses, executive director of the AES. "Our organizing committee really outdid themselves, with over 350 presentations from an astounding 731 leading researchers and practitioners in the field, many of them standingroom-only. We have some



Moses with keynote speaker Alan Parsons

serious momentum built from recent conventions in New York and Berlin, and we are going to keep it going for the coming conventions in Warsaw in May and then back to New York next October. You could say that our conventions and the AES organization have a renewed energy, and we couldn't be happier." "The AES137 convention exceeded our hopes in many ways, and it was a thrill to see every one of our new ideas unfold successfully. The Live Sound Expo leveraged the success we've enjoyed with the Project Studio Expo and brought professional training to the Sound Reinforcement community. The new Raw Tracks events, with a rare glimpse behind the glass at some of the classic recording sessions, were standing-room-only. High Resolution Audio sessions in the HRA breakout room emphasized a convergence of the consumer electronics music business with the musical production community, and the conversations are still buzzing along toward New York next year. And this list goes on and on—wow, that was awesome.'

Speaking of her pleasure at the success of the event, Maureen Droney, managing director of the Recording Academy Producers and Engineers Wing, said, "The annual U.S. AES convention is always an important event on our calendar, but the 137th show hit a high in attendance, content, energy, and, from what I could tell, positive reviews. The only thing that could have been better would have been to have more time to take advantage of the wealth of offerings. Congratulations to Bob Moses, Michael MacDonald, Valerie Tyler, and everyone on the organizing committee for one of the best shows ever."

CONVENTION

Barbara Lange, executive director at SMPTE, made clear her delight at the evidence of partnership between the two organizations. "The AES convention once again proved to be a vital industry event, offering exhibitors, presenters, and attendees valuable opportunities to discuss technology and techniques at the forefront of audio engineering," she said. "The sessions presented by SMPTE members in partnership with the AES drew strong attendance and provided unique insight into the newest developments in cinema standards, as well as a lively discussion of audio in today's live television broadcasts."

OPENING CEREMONY AND AWARDS

Opening the 137th Convention, to a standing-room only hall, executive director Bob Moses spoke of an all-time record for preregistration at a West Coast convention. The result of "amazing work" by headquarters staff and the convention organizing committee, whom he thanked warmly for their efforts.

Sean Olive, outgoing AES president, spoke of his pleasure at hosting a convention in his home town of Los Angeles, after a 12 year hiatus. "There's a vibrant audio industry, perfect year-round weather, and free parking on the 405," he joked, encouraging the audience to take advantage of the exceptional opportunities here. Olive then handed the

floor to Andres Mayo, incoming president, and the first from Latin America. Mayo pointed to the growing world of audio experts, identifying AES as the only proaudio community in the world. There would be the first-ever workshop panel in Spanish here in LA, he was proud to say.

Michael MacDonald, convention cochair, was quick to say that his co-chair Valerie Tyler should take the credit for much of the work in getting the event ready. She'd been a pleasure to work with, he enthused, and he was excited to welcome everyone to the city. The "incredible" program, he said, would be the largest in the history of the AES, and he invited his talented committee up on to the stage to receive applause. Preregistration for the event, he said, had blown away expectations, having been one and a half times that of San Francisco two years ago. "AES is critical to the future of our industry," he said, as "there are fewer places for people to learn these days." He encouraged those on the floor to consider joining and working on a convention committee.

As is customary, a number of awards were presented, this time by Jan Abildgaard Pedersen, chair of the Awards Committee. Among the recipients was Floyd Toole, who received the highest award of the Society, the Gold Medal, in recognition for outstanding contributions to theory, practice, and international standards in the area of subjective and objective evaluation of loudspeakers in rooms. Speaking briefly upon receipt of this honor, Toole remembered that almost exactly 50 years ago he had undertaken his first listening test on loudspeakers, so this was an appropriate anniversary. He had had a wonderful and rewarding career, he said, but he was not done yet, as his father had lived to



Bob Moses



Sean Olive



Andres Mayo



Michael MacDonald

AES AWARDS AT THE 137[™]

GOLD MEDAL

FLOYD TOOLE in recognition for outstanding contributions to theory, practice, and international standards in the area of subjective and objective evaluation of loudspeakers in rooms.

BRONZE MEDAL

MARK GANDER in recognition of his significant contributions in the field of loudspeaker development and for mentoring a generation of audio engineering researchers.

PETER MAPP in recognition of his significant and dedicated contributions to the work of the Society, including technical committees, standards activity, tutorials, British Section Committee, and conventions.

FRANCIS RUMSEY in recognition of his outstanding long-term contributions to the AES, providing leadership to the Membership Committee, Regions and Sections, and the Technical Council, in addition to remarkable and sustained editorial contributions to the Journal of the AES.

BOARD OF GOVERNORS AWARD

JIM ANDERSON in recognition of his chairing the 135th AES Convention in New York in 2013.

JIM ANDERSON in recognition of his chairing the 131st AES Convention in New York in 2011.

FELLOWSHIP AWARD

ALEX CASE in recognition of his service to the Audio Engineering Society and excellence in audio education.

MARK F. DAVIS in recognition of his significant work in audio signal processing including the dbx/MTS stereo television noisereduction system, loudspeaker design, and dissemination of the understanding and application of audio technology developments and innovations.

JIM KAISER in recognition of his significant and important contributions to the development of the AES, serving at most levels of our organization including as a past p resident of the Society.

BOB LEE in recognition of his significant contributions to the development of the AES, serving at different positions in our organization including four years in the Executive Committee as secretary.

BRUCE SWEDIEN in recognition of his musical application of technology in recording and production, and his impact in creating a sonic reference in modern popular music.

EDMUND WELLY in recognition of his high level of commitment to the Society and in particular, for being instrumental in reforming the Atlanta Section in 2001.

JAMES YEARY in recognition of his outstanding leadership, service, and dedication to the AES Atlanta Section, and for achieving quality audio projects at Turner Studios over a long period. (Ed Welly accepted the award on his behalf.)

CITATION AWARD

CHRISTOPHER FREITAG in recognition of continuing and significant work for the society.

HONORARY MEMBER

STEVE LILYWHITE in deep appreciation for over four decades of exemplary contributions to the music and recording industry, working with many of the most revered and successful musicians of this period.

137TH CONVENTION AWARDS PRESENTATION





Left, Bozena Kostek presents Bob Stuart with Best Peer-Reviewed Paper Award; right, Samuel Nacach with Best Student Paper Award.



Sean Olive presents the Gold Medal Award to Floyd Toole.



Citation Award is presented to Chris Freitag.





Bronze Medal: from left, Mark Gander, Peter Mapp, and Francis Rumsey





Fellowship: Mark Davis (L) and Jim Kaiser





Fellowship: from left, Bob Lee, Bill Gibson for Bruce Swedien, Edmund Welly, and Alex Case







Board of Governors: Jim Anderson



An overflow crowd listened to the awards and keynote presentations during the opening ceremonies.

the ripe old age of 102 and he expected to have a few years left in which to continue his interest in audio. (A full listing of the 137th Awards is given in the side bar.)

KEYNOTE

Veteran producer and engineer, Alan Parsons, looked back with some longing to what he clearly saw as the heyday of recording technology. In something of a tirade against poor-quality audio delivery, he suggested that streaming is possibly a good choice because we can get many channels of high-quality audio in the bandwidth of one video stream. However, "with all the streaming and download services available," he said, "I'd like to see us go back to owning music, and back to loudspeakers. Back to hi-fi."



Alan Parsons convention keynote speaker

EXHIBITION

The AES is extremely grateful to those companies that sponsored the convention, including Audionamix, Audinate, Audio Precision, Auro Technologies, Avid, DiGiCo, EAW, Focusrite/Novation, L-Acoustics, Lectrosonics, Location Sound Corp, MOTU, Sennheiser/Neumann, Shure, TC Electronic, TC Applied Technologies, THAT Corp, Universal Audio, and Yamaha.

Piers Plaskitt, CEO of Solid State Logic, noted that "in anticipation of the excitement that would surround the return of AES to Los Angeles, Solid State Logic chose this show to launch two new products: the XL-Desk, our revolutionary twist on the classic analogue studio console, and a new addition to our Live Console portfolio, the powerful-yet-compact L300. We were thrilled with the response that both products received, and thanks to a stunning level of attendance, we anticipate an excellent return on the investment of us participating in the convention."

"We were really pleased to have the AES convention back in Los Angeles this year," stated Doug Swan, Audio-Technica national director of sales & marketing, professional markets. "Attendance exceeded expectations, and we got to see professionals from all corners of LA's busy audio industry—record-making, TV/film, gaming, live sound, the tech sector, system installation, and more. Signifying a reinvigorated industry, AES continues its upswing, and we are looking forward to the show next year."

Among the interesting products making their debut at the convention were a number of microphones, including the new Nuvo N8 mic from Audio Engineering Associates. The mic has its design history in the RCA tradition and uses a big ribbon, being intended for far-field recording of acoustic spaces. Audio-Technica also introduced a new member of its 50 series, the AT5045 cardioid condenser. Designed with a large diaphragm electret capsule, the model is able to handle high sound pressure levels up to 149 dB with very low self noise. There was also an interesting networked mic from A-T, the first to offer integration with Audinate's Dante network protocol and known as the ATND971. It's a boundary-layer cardioid mic that can be powered by network PoE (power over Ethernet). Among wireless microphone systems, AKG showed the recent DMSTetrad digital system, which offers 128-bit encryption for secure connections, as well as uncompressed 48-kHz, 24-bit encoding. Shure unveiled its QLX-D digital wireless system, too, which sports 256-bit encryption, has networked control options, and intelligent rechargeable batteries.

At the other end of the signal chain with loudspeakers, Neumann brought out its first midfield monitor, the KH 420. It's an active 3-way unit that is intended for listening distances of up to 11 meters, and it can be combined with a subwoofer for 5.1 and 7.1 configurations. Genelec revealed its new 8352 Smart Active Monitor, being a compact 3-way unit with a coaxial mid-range and tweeter driver, while at the larger end of the size spectrum L-Acoustics brought out its K2 line source array loudspeaker for PA applications. This latter unit uses a newly developed steering



Chuck Ainlay tells how it's done.

method that combines mechanical directivity variation with DSP control above 300 Hz. PMC, on the other hand, launched its QB1 Active monitor for studio applications, capable of a peak SPL of 132 dB and having



A birds-eye view of the exhibition floor



Launch of "The Pensados Papers" on the Hal Leonard Publishing stand

4000 watts of Class D amplification on four bass drivers. For those that like a stylish difference to their loudspeakers, Gibson was showing its new Les Paul studio reference speakers, sporting carbon-coated titanium tweeters and custom-made amplification.

There's still some development going on in mixer design too, with Studer's new Vista V digital console, designed with a compact footprint and 52 faders, allowing over 800 audio channels and more than 5000 inputs and outputs, if needed. Fairlight also brought out a table-top console in its Live line-up, known as the QUANTUM.Live Table-Top. It's possible to switch between live and post production configurations at the touch of a button, and despite the small size the console has 144 signal paths over 12 layers.

On the measurement front, Audio Precision brought out a new audio analyzer, the APx555, claimed to be the most powerful and capable test instrument ever developed for audio and having the lowest noise and distortion on its analog inputs of any analyzer in the business.

Plug-ins and the DSP on which they run also featured large in the exhibition line-up, with Universal Audio showing a new Thunderbolt DSP accelerator, the UAD-2, designed to supercharge Mac-based DAW system running lots of plug-ins. RTW also launched a Mastering Tools plug-in intended to bring softwarebased metering solutions to a wider range of users. A variety of level and loudness meters are available as well as vector scopes, real time analyzers, and a surround sound analyzer. iZotope had also updated its audio repair and enhancement toolkit with the RX4, which includes various de-noising options such as a dialog denoiser to reduce background sounds from dialog and vocals. Sonnox updated its Pro-Codec plug-in, introducing metadata editing and batch processing, as well as 64-bit compatibility and AAX support for Pro Tools 11.

PROJECT STUDIO EXPO

AES has a long history serving the recording community, from the early days of monophonic vinyl to today's modern multichannel digital audio formats. The Project Studio Expo (PSE), created in partnership with Sound On Sound, brought the latest techniques, tools, and experts together for professional training on topics ranging from acoustics in small spaces to microphone placement, mixing, and mastering.

Among the compelling training events included in this PSE was Mike Senior's "Production Tricks to Use with any DAW" during which he drew on his experience of thousands of project-studio mixes to highlight the most frequently overlooked studio tricks. In the process he demonstrated how these methods could powerfully upgrade results without breaking the bank, and no matter which DAW is involved. He also ran a session on the five most common project studio recording mistakes, giving insiders' tips on how to avoid trouble at the mixdown stage.

LIVE SOUND EXPO

With the Live Sound Expo (LSE), the 137th Convention offered expert advice for the broad spectrum of live sound engineers (some 25% of Convention attendees) with an emphasis on the practical, bringing profession-



A panel of experts lined up to offer their knowledge during the Live Sound Expo.

als with decades of experience to the stage to inspire and educate attendees. The AES conventions are incubators for live sound technology. From early loudspeaker design to line array theory, from performance measurement standards to networked audio interoperability, AES has brought together professionals on the leading edge of theory and application since the Society's inception. That tradition continued here with content available to all attendees.

Among the popular events in the LSE were an introduction to networks and IT for the live sound professional by Landon Gentry, a tutorial on practical aspects of RF systems (wireless microphone, etc.) by Ike Zimbel, and a review of the principles of "sound in space" by Bernie Broderick. J. Mark King and Dave Mendez took a look into miking fundamentals for the stage, including guidelines for effective use and applications of different types.

DTV AUDIO GROUP FORUM

On Friday October 10th, under the leadership of Roger Charlesworth, the DTV Audio Group Forum looked at "The Implications of Streamed Content Delivery on the Evolution of Television Audio Services." "Content delivery is converging on a streamed model whether for mobile, over the public Internet, within the walled garden of the MVPD, or over next-generation broadcast services. … The rapidity of this transition to streaming has significantly accelerated the time frame for adoption of advanced object-based audio services offering spatially immersive sound, enhanced personalization, greater bandwidth efficiency, and improved audio quality." So went the introduction to their session. This forum went on to explore some of the tools and workflow approaches required to manage and exploit the capabilities of next-generation audio standards. It took a look at the convergence around streamed content delivery and transition to IP distribution and contribution that makes this rapid deployment possible.

HIGH RES AUDIO

There was also an important series of presentations on the Friday from the Digital Entertainment Group, concentrating on high-resolution audio. With the recent agreement on a definition for delivery of high-res projects to consumers, there is renewed enthusiasm for raising the quality bar on all sorts of audio media. Topics included "Hi-res Audio for Every Lifestyle," during which panellists described the latest devices available to the consumer, enabling hi-res music to be enjoyed on





Roger Charlesworth (top) and Skip Pizzi look into the implications of streamed content for TV.

the go and elsewhere. There was also a workshop on the business of hi-res music, involving Mark Pilbe from Sony Music, Howie Singer from Warner Music, and Jim Belcher from Universal Music. Topics included licensing hi-res files, the latest distribution partners, ingesting and archiving digital assets, new subscription models, and the best ways to promote hi-res music.

SPECIALIZED STREAMS TARGET KEY AUDIENCES



A number of themed tracks were used to guide delegates with particular interests through the plethora of events taking place in the technical program, including Broadcast and Media Streaming(David Bialik), Live Sound (Paul Chavez), Networked Audio (Tim Shuttleworth), Product Design (Scott Leslie), and

Ken Scott,left, and Mark Rubel during Raw Tracks/David Bowie session.

Recording and Production (Jim Kaiser and Andres Mayo). During the Sound for Picture track, chaired by Brian McCarty, an work-

shop session related the results of a recent survey on cinema loudness, proposing new standards work to attempt some control over what has become an unruly area of our business. (This topic is covered in greater detail in this month's feature article on loudness, p. 906.)

The Game Audio track, led by Steve Martz and Michael



Brian McCarty (standing) with worldclass cinema sound mixers, from left, Mark Linden, Sherry Klein, and Gregory Watkins



From left, Michael Kelly, Bob Schulein, Jürgen Herre, Heyser Lecturer Marty O'Donnell, and Francis Rumsey

Kelly, brought its usual large crowd of followers. Possibly the most technologically advanced and fastest growing segment of the audio field, game audio brings together signal processing complexity, evolving requirements, and mass market appeal. AES has been on top of this exciting field since its infancy and the Game Audio Track at the 137th Convention delivered the latest technologies, developers, and ideas, including sessions on the business aspects of game audio and dynamic mixing.

HEYSER LECTURE

Legendary game audio director and composer Marty O'Donnell presented an engaging and enjoyable Richard C. Heyser Memorial Lecture. Marty is the famed audio director behind the award-winning Halo game series and is responsible for the biggest selling game soundtrack of all time. In his talk entitled "The Ear Doesn't Blink: Creating Culture With Adaptive Audio," O'Donnell drew on his unique perspective from games, film, and jingle-writing to share the creative challenges of working in nonlinear media such as games.

PORTNOW GIVES LUNCHTIME KEYNOTE

In his Friday lunchtime keynote, Neil Portnow, president/CEO of the Recording Academy since 2007, discussed the challenges and opportunities currently facing recording professionals. Introducing the event, Bob Moses said that he had been really looking forward to Portnow's talk. "Music brings us

together as people," he said, "and

the Recording Academy is looking

after that." He congratulated the

AES on a great success at the con-

vention, saying that it felt like

home to be in LA. Describing the

work of the Recording Academy, he

noted things like its standing up to the sell-off of the wireless spec-

trum used for microphones, and

its lobbying in Washington for the interests of recording pros and

artists. "Quality sound matters,"



Neil Portnow gives a special lunchtime keynote.

WORKSHOPS AND TUTORIALS FOR ALL

Mike Wells, in charge of workshops, and Bob Lee, in charge of tutorials and masterclasses, delivered a program of events with something for everyone at the 137th. One particular novelty was the session "Audio Legal" during which a panel of intellectual property

he concluded.

and recording business experts explored how to protect our intellectual property and other legal matters affecting audio professionals. Andrea Yankowsky led the group, with representatives of Townsend & Stockton LLP from New York, to debate this important subject.

In a tutorial on MPEG-H 3D audio, Schuyler Quackenbush explained how immersive audio can be delivered to the consumer, for a wide range of different devices such as TVs, smartphones, and tablets. Different loudspeaker and headphone rendering options can be accommodated, by adapting the reproduction to whatever is available at the delivery end of the chain.

There was also an interesting tutorial by Tony Hoover that went under the title "Acoustics—Sorting it Out and Getting it Right," during which Hoover looked into sound isolation, HVAC noise control, and surface treatments for architectural acoustics in recording studios. Jan Berg gave an introduction to listening tests on the last day of the convention, looking into the basic concepts used in experimental design.



Nadia Wallaszkovits speaks on the need to preserve historic recordings.



Schuyler Quackenbush presents his tutorial on MPEG-H coding.

TECHNICAL PAPERS IN FOCUS

An outstanding collection of paper presentations had been assembled by papers cochairs Brett Leonard and Rob Maher covering just about every area of current audio research and development. Sessions



Nuno Fonseca explains upmixing using particle systems.



Mark Blewett discusses dynamic audio imaging.

included topics on spatial audio, perception, transducers, education, room acoustics, signal processing, and applications. The winner of the convention's best peer-reviewed paper award was a paper on the audibility of typical digital audio filters in a high-fidelity playback system by Helen Jackson, Michael Kapp, and Bob Stuart of Meridian Audio. The paper described listening tests that suggested listeners are sensitive to the small signal alterations introduced by the various filters applied in high-res, wideband digital playback system. Their main conclusions were that there exist audible signals that cannot be encoded transparently by a standard CD, and that an audio chain used for experiments like this one must be capable of high-fidelity reproduction. An award for the best student paper went to Samuel Nacach of New York University, for his work on comparative testing of a duplex panner for headphone-reproduced commercial music.



Convention cochairs Michael MacDonald and Valerie Tyler



Papers co-chairs Brett Leonard, left, and Rob Maher







From left, Jessica Livingston (tours) with Mark Halvorsen (QSC), Andres Mayo and Jim Kaiser (recording and production), David Scheirman (facilities) with Steve Green (business development)







From left, Neil Shaw (facilities), Brian McCarty (sound for pictures), Garry Margolis (transportation adviser)

AES THANKS THE 137TH CONVENTION COMMITTEE



Mike Wells (workshops), Bob Lee (tutorials), David Bialik (broadcast and media streaming)







Scott Leslie (product design), Tim Shuttleworth (networked audio), Paul Chavez (live sound)



Mark Gander (historical), Jonathan Novick (training), Roger Furness (program coordinator)



Magdalena Plewa and John Krivit (students and careers), Steve Martz and Michael Kelly (game audio)



The entire committee on stage during the opening ceremonies, to receive the warm applause of the convention audience

OUTSTANDING SPECIAL EVENTS

One of the highlights of the convention for Andres Mayo, the incoming AES president, was the "Great Producers from Latin America" panel, conducted entirely in Spanish. The panel "Grandes Productores de América Latina" brought together several of the biggest names in the region, all of them multiple Grammy Award winners, to present their most recent work and discuss the state of the musical industry in Latin America. The panel included Daniel Anselmi, Rafa Arcaute, and Armando Avila, among others.

A highlight of the Platinum series of events involved Dave Pensado and Herb Trawick. hosts of wildly popular weekly show "Pensado's Place," who were interviewed at AES for the first time. Delegates saw what Dave and Herb have learned from their superstar guests-from studio technique and engineering, to the pressures of creating online television for 180 straight weeks (and counting). The Platinum Mastering panel concentrated on high-resolution audio for their session on Friday afternoon discussing the ramifications of the DEG initiative to bring greater clarity to the definition of the term. Bob Ludwig in the chair, led a discussion with Bruce Botnick, Mark Donahue, Andres Mayo, and Barak Moffitt, to address what is hoped to be the next big thing for the consumer.

Picking up on the theme of sound for pictures, Jerome Rossen and his panellists Steve Horowitz and Richard Warp from the Manhattan Producers Alliance took a look at music and audio for the smaller screen. They were particularly interested in what to take into account when composing, compiling, and refining audio for content that's to be delivered over media device screens.



Andres Mayo (left) with the members of the first-ever "Great Producers from Latin America" panel



From left, Lisa Loeb, Amy Burr, Emily Lazar, Marcella Araica, Brenda Russell, and Chris Lord-Alge



Michael MacDonald, left, hosts Herb Trawick, center, and Dave Pensado.



Panelists from the GRAMMY Sound Table, with Bob Moses (right) and Maureen Droney of the Recording Academy (fourth from left)

Historically the audio and recording industries has been a male dominated workplace, so the panel "Chicks in the Mix" sought to address this by looking at the challenges faced by women. A panel of well-known female industry professionals discussed what it takes to survive and thrive in what James Brown called "It's A Man's World." Moderating this panel was producer/engineer Chris Lord-Alge whose resumé includes recordings for Muse, Pink, Foo Fighters, Avril Lavigne, Green Day, Daughtry, Paramore, and Black Eved Peas. "Chicks In The Mix" brought together some of the most powerful and successful women to offer lively debate and discussion across all boundaries.

On Saturday lunchtime, Richard Warp joined Scott Loonev and Tim Mullen to investigate mind-controlled interactive music. "If one thing is clear from the music industry over the last 20 years," went the introduction, "it is that consumers are seeking ever-more immersive experiences, and in many ways bio feedback is the final frontier, where music can be made in reaction to emotions, mood, and more." The panel looked at how feedback can come from autonomic processes (stress or arousal, as in Galvanic Skin Response) or cognitive function (EEG signals from the brain), and showed how these technologies are already robust enough to be integrated into everything from single interfaces to complete systems.

The Grammy SoundTable, presented by the P&E Wing of the Recording Academy on Saturday afternoon, was moderated by Ed Cherney, and included contributions from Niko Bolas, Michael Brauer, Alex Da Kid, No I.D., and Don Was. Record production is a hybrid art encompassing vision, musicianship, wellhoned instincts, and the bottom-line ability to get a project over the finish line, it was said.

To cap off the early afternoon specials at the 137th, Jack Joseph Puig moderated a panel of mobile audio experts to discuss how the paradigm shift to mobile music consumption affects creative choices in production. Entitled "Sound Is the Conduit to the Artist Heart," Puig's session looked at how manufacturers in the consumer space view the intersection of mobile and pro audio, exploring ramifications for everyone in the industry, from audio manufacturer to end user.

STUDENTS GET BUSY

Thanks to sterling efforts by Magdalena Plewa and John Krivit, students and those looking to develop their careers had plenty to enjoy at the convention. In addition to meetings of the stu-



A bustling education and careers fair on Saturday morning

dent delegate assembly, at which candidates for election were announced, there was a SPARS speed counselling session with a large number of experts from the industry, including representatives of G.A.N.G., the Game Audio Network Guild. The student recording competition is always a popular series of sessions, and LA was no exception, with categories in traditional acoustic recording and sound for visual media, as well as traditional studio recording and modern studio recording. The student design exhibition enabled those who had done technical projects to show them off and have their work seen by the AES design community. Close to 70 submissions were received for the student competitions in LA and the SDA was immensely grateful to all the judges and sponsors that gave of their time and resources to make them possible. There was also a careers/job fair and education fair to match job seekers with companies and students with schools.

TECHNICAL TOURS GET VISITORS ON THE ROAD

Technical tours chair Jessica Livingston had been responsible for putting together a compelling program of technical tours for the convention delegates who wanted some time away from the LA Convention Center. Among them was a visit to the QSC factory, where a wide range of audio electronics products and loudspeakers are turned out, and a tour of Sony Computer Entertainment, America, a new facility located in Santa Monica Studios, and the game studio behind the hit God of War franchise. A tour of the Walt Disney concert hall was high on the priority list for many, with its Frank Gehry-designed auditorium and dramatic organ. Attached to the sound for picture agenda was a tour of The Dub Stage with Marti D. Humphrey CAS, a 33year veteran of Hollywood postproduction.



Prospective students browse the options available from schools.



Student winners with their Focal Press book prizes, together with Kyle Snyder (AES Education Committee) and Megan Ball (Focal Press)



All aboard the bus for Tech Tour to the Dub Stage.



Happy convention delegates on their way to one of the tours

HISTORICAL PROGRAM

No convention would be complete without a look back at the history of audio engineering, and here in LA Mark Gander had put together a series of events including one that he chaired himself, on the evolution of studio acoustic design. Distinguished studio designers, George Augspurger, Richard Schrag, John Storyk, and Chips Davis, each with careers lasting more than 40 years, gave perspectives on how methods have evolved over that period.

An interesting session on Sunday afternoon was led by Dennis Fink, on the authentic replication and modelling of vintage audio gear. Whether with hardware signal processing or software plug-ins, this is a burgeoning industry, and representatives of it looked at the extent of the sonic authenticity achievable using these approaches.

TECHNICAL COUNCIL AND STANDARDS MEETINGS

Coordinated by Mark Yonge, Standards Manager, and chaired by Bruce Olson, Standards Committee Chair, there was a full program of standards meetings, covering the many diverse areas of audio engineering. Among other activities, the AES67 group dealing with network audio interoperability was working toward what turned out to be a successful "plugfest" to test the implementation of the standard, to take place at the end of October. The results of this can be found in a report in last month's Standards News.

Francis Rumsey and his colleagues on the Technical Council led a comprehensive program of Technical Committee meetings covering the many fields of endeavor that make up audio engineering. These committees stimulate and promote the technical policies of the Society and plan convention and conference activities to educate and inform the membership. They can also propose standards work and publish technical documents.

NOT TO FORGET...

Good technical facilities and assistance are crucial to the success of a convention, and the sterling efforts of facilities chairs David Scheirman and Neil Shaw were appreciated by all those taking part. A team of volunteers organized by Linda Gedemer and Stephen O'Hara was also on hand to ensure the smooth running of this complex event, and their efforts are to be commended. Lia Enkelis and Garry Margolis kept everyone in the picture with their excellent transportation guides and Jonathan Novick acted as training coordinator. Roger Furness did a sterling job as program coordinator.

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 strategy of the organization are planned. The annual business meeting at the outset of the convention confirmed that AES membership is remaining high. 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 stimulating local events and membership initiatives. The Publications Policy Committee worked to revise the Open Access policy of the Society, and 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 discussed.



A plenary meeting of the Technical Council. From left to right: Brian McCarty, Jürgen Herre, Bob Schulein, Francis Rumsey, Michael Kelly.



Bozena Kostek and Ville Pullki prepare for the Publications Policy Committee meeting.



Bill Foster and Theresa Leonard at the Membership Committee meeting.



Karlheinz Brandenburg, left, and Jan Abildgaard Pedersen during the Conference Policy Committee meeting.



The army of student volunteers who assisted with the smooth running of the convention, with cochairs Linda Gedemer and Stephen O'Hara (center)



The AES Board of Governors and committee chairs meet after the convention.



137th Exhibitors & Sponsors Los Angeles • 2014 October 10–12

A Designs Audio Inc. West Hills, CA, USA www.adesignsaudio.com

Accessory King Los Angeles, CA, USA

*ACO Pacific, Inc. Belmont, CA, USA www.acopacific.com

ADAM Audio Hicksville, NY, USA www.adam-audio.com

ADK Microphones Lake Oswego, OR, USA www.adkmic.com

Adolph Thal Audio Engineering (ATAE) Grass Valley, CA, USA ataudioeng.com

Advanced Audio Microphones Summerland, Canada aamicrophones.com

AEA - Audio Engineering Associates Pasadena, CA, USA www.ribbonmics.com

AirNetix, LLC Smyrna, GA, USA www.airnetix.com

*AKG Northridge, CA, USA www.akg.com

AlterMedia, Inc. Burbank, CA, USA www.studiosuite.com

Alto Music Middletown, NY, USA www.altomusic.com

American Express OPEN New York, NY, USA www.open.com

^{*}Sustaining Member of the Audio Engineering Society

AMS Neve Burnley, UK www.ams-neve.com

Analoguetube Ltd. London, UK www.analoguetube.com

AnaMod LLC Gillette, NJ, USA www.anamodaudio.com

ANAVIEW Amplifiers Manasquan, NJ, USA www.anaview.com

Antelope Audio Southfield, MI, USA www.AntelopeAudio.com

API Jessup, MD, USA www.apiaudio.com

Apogee Electronics Santa Monica, CA, USA www.apogeedigital.com

APRS Totnes, UK www.aprs.co.uk

Argosy Console, Inc. Eldon, MO, USA www.ArgosyConsole.com

Astell & Kern Irvine, CA, USA www.astellnkern.com/

ATC Loudspeaker Technology Ltd. Stroud, Gloucestershire, UK www.atcloudspeakers.co.uk

Atlantico Blue Studios Paco De Arcos, Portugal atlanticobluestudios.com/

ATR Magnetics York, PA, USA www.atrtape.com Audeze LLC Costa Mesa, CA, USA www.audeze.com

Audient Herriard, Hampshire, UK www.audient.com

Audinate Portland, OR, USA www.audinate.com

Audio Accessories, Inc. Marllow, NH, USA www.proaudiola.com

Audio Alchemist New City, NY, USA

Audio Plus Services Champlain, NY, USA www.audioplusservices.com

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

Audio Technology Switzerland-USA Gallatin, TN, USA www.nagraaudio.com

*Audio-Technica U.S., Inc. Stow, OH, USA www.audio-technica.com

*Audiomatica SRL Florence, Italy www.audiomatica.com

Audionamix Los Angeles, CA, USA www.audionamix.com

Augspurger Monitors Pembroke, MA, USA www.augspurgermonitors.com

Auro Technologies Mol, Belgium www.auro-3d.com

Aurora Audio International Hollywood, CA, USA www.auroraaudio.net Avalon Design Tustin, CA, USA www.avalondesign.com

Avenson Audio Austin, TX, USA www.avensonaudio.com

Avermetrics Los Angeles, CA, USA www.avermetrics.com

***AVID** Burlington, MA, USA www.avid.com

Awtac New York, NY, USA www.awtac.com

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

Barefoot Sound Portland , OR, USA www.barefootsound.com

Belden Valencia, CA, USA www.belden.com

Benchmark Media Systems, Inc. Syracuse, NY, USA www.benchmarkmedia.com

Blue Microphones Westlake Village, CA, USA www.bluemic.com

Bob Moog Foundation Asheville, NC, USA moogfoundation.org

*Bose Corporation Framingham, MA, USA www.bose.com

Brainstorm Electronics West Hollywood, CA, USA www.plus24.net

Bricasti Design, Ltd. Medford, MA, USA www.bricasti.com **Bruel & Kjaer** Norcross, GA, USA www.bksv.com

***BSS Audio** Sandy, UT, USA www.bssaudious.com

Bubblebee Windscreens West Hollywood, CA, USA www.plus24.net

Burbank Audio Systems LLC Burbank, CA, USA Burbankaudiosystems.com

Burl Audio Santa Cruz, CA, USA www.burlaudio.com

Cakewalk Boston, MA, USA www.cakewalk.com

*Calrec Audio Ltd. Hebden Bridge, UK www.calrec.com

Cathedral Pipes Huntington Beach, CA, USA cathedralpipes.com/

CB Electronics Charvil, Berkshire, UK www.colinbroad.com

CEDAR Audio Ltd. Fulbourn, Cambridge, UK www.cedaraudio.com

Chandler Limited, Inc. Shell Rock, IA, USA www.chandlerlimited.com

CharterOak Enfield, CT, USA www.coproaudio.com

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

Cloud Microphones Tucson, AZ, USA www.cloudmicrophones.com

137th Exhibitors & Sponsors



Coleman Audio Westbury, NY, USA www.colemanaudio.com

Corning Optical Communications, LLC Santa Ana, CA, USA www.OpticalCablesByCorning .com

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

*Crown International Elkhart, IN, USA www.crownaudio.com

*CSR Belfast, UK www.csr.com

Cymatic Audio Blainville, Canada www.cymaticaudio.com

D.W. Fearn West Chester, PA, USA www.dwfearn.com

DAD - Digital Audio Denmark West Hollywood, CA, USA digitalaudio.dk

Daking Audio Saint Petersburg, FL, USA www.daking.com

*Dan Dugan Sound Design San Francisco, CA, USA www.dandugan.com

Dangerous Music, Inc. Edmeston, NY, USA www.dangerousmusic.com

*dbx Professional Products Sandy, UT, USA www.dbxpro.com

*dCS Cambridge Cambridge, UK www.dcsltd.co.uk **Dedicated Marketing** Westlake Village, CA, USA

Direct Sound Headphones LLC St. Louis, MO, USA www.extremeheadhpones.com

DirectOut GmbH Mittweida, Germany

DK Technologies Herlev, Denmark www.dk-technologies.com

www.directout.eu

DPA Microphones Longmont, CO, USA

www.dpamicrophones.com Dramastic Audio

www.dramasticaudio.com ***DTS, Inc.** Agoura Hills, CA, USA www.dts.com

Milford, NH, USA

E.A.R., Inc. Boulder, CO, USA www.earinc.com

Earthworks, Inc. Milford, NH, USA www.earthworksaudio.com

Eastern Acoustic Works, Inc.

Whitinsville, MA, USA www.eaw.com

ECLIPSE by Fujitsu Ten Kobe Hyogo, Japan www.eclipse-td.net

Eiosis Las Vegas, NV, USA www.eiosis.com/

Electronic Musician New York, NY, USA www.emusician.com

Electroswitch Raleigh, NC, USA www.electro-nc.com Eleven Dimensions Media, LLC Petaluma, CA, USA www.11dmedia.com

Elysia GmbH Nettetal, Germany www.elysia.com

Empirical Labs Lake Hiawatha, NJ, USA www.empiricallabs.com

Equator Audio Chula Vista, CA, USA www.equatoraudio.com

ESI Audiotechnik GmbH Leonberg, Germany www.esi-audio.com

Eve Audio Blainville, Canada www.eve-audio.com

Event Production Directory Las Vegas, NV, USA www.epdweb.com **Eventide** Little Ferry, NJ, USA www.eventide.com

Extreme Isolation Headphones St. Louis, MO, USA www.extremeheadphones.com

FairlightUS Newfoundland, NJ, USA www.fairlightus.com

Flex Acoustics Copenhagen, Denmark www.flexac.com

*Focal Press New York, NY, USA www.focalpress.com

*Focusrite Novation El Segundo, CA, USA www.focusrite.com

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

Fredenstein Taipei, Taiwan www.fredenstein.com

Front of House / Stage Directions Las Vegas, NV, USA www.fohonline.com

Genelec, Inc. Natick, MA, USA www.genelec.com

General Cable / Gepco Wood Dale, IL, USA www.gepco.com

Gepco/General Cable Wood Dale, IL, USA www.gepco.com

Ghielmetti AG Solothurn, Switzerland www.ghielmetti.ch

Gibson Guitar Corporation Nashville, TN, USA www.gibson.com **GKL Audio** Montreal, Canada www.gklaudio.com

Globe Plastics Chino, CA, USA www.globecomposites.com

Glyph Technologies Cortland, NY, USA www.glyphtech.com

Gordon Instruments Nashville, TN, USA www.gordonaudio.com

Grace Design Lyons, CO, USA www.gracedesign.com

Great River Electronics South St. Paul, MN, USA www.greweb.com

Group One Ltd. Farmingdale, NY, USA www.g1limited.com

Guzauski-Swist New City, NY, USA www.gsstudiomonitors.com

Hal Leonard Corporation Milwaukee, WI, USA www.halleonard.com

*Harman International Northridge, CA, USA www.harman.com

Harrison LaVergne, TN, USA www.harrisonconsoles .com

HEAR Now Festival Carle Place, NY, USA www.hearnowfestival.org

Hear Technologies Huntsville, AL, USA hearback.com

Hosa Technology, Inc. Buena Park, CA, USA www.hosatech.com



137th Exhibitors & Sponsors



IGS Audio Myslowice, Poland proaudiola.com

Independent Audio, Inc. Portland, ME, USA www.independentaudio .com

Infernal Love, LLC Los Angeles, CA, USA

International Music Software Trade Association (IMSTA) Toronto, ON, Canada www.imsta.org

IsoAcoustics Inc. Markham, ON, Canada www.isoacoustics.com

ITI Audio Ripplemead, VA, USA www.iti-audio.com

***iZotope, Inc.** Cambridge, MA, USA www.izotope.com

***JBL Professional** Northridge, CA, USA www.jblpro.com

JDK Audio by API Jessup, MD, USA www.idkaudio.com

JoeCo Limited Cambridge Cambridgeshire, UK www.joeco.co.uk

Josephson Engineering, Inc. Santa Cruz, CA, USA www.josephson.com

Keen Ocean Industrial Limited Hong Kong. Hong Kong www.keenocean.com.hk

Kimber Kable/ IsoMike Ogden, UT, USA www.kimber.com Klippel GmbH Dresden, Germany www.klippel.de

Klotz a.i.s. Cables Blainville, QC, Canada www.klotz-ais.com

KRK Systems Chatsworth, CA, USA www.krksys.com

Kush Audio Los Angeles, CA www.thehouseofkush.com

***L-Acoustics** Oxnard, CA, USA www.l-acoustics.com

Latch Lake Music Eagan, MN, USA www.latchlakemusic.com

Lavry Engineering Rolling Bay, WA, USA www.lavryengineering.com

Lawo North America Corp. Toronto, ON, Canada www.lawo.ca

Lectrosonics, Inc. Rio Rancho, NM, USA www.lectrosonics.com

Lewitt Audio Blainville, QC, Canada www.trunorthmusicand

***Lexicon Professional** Sandy, UT, USA www.lexiconpro.com

sound.com

Lipinski Sound Corporation Linden, VA, USA www.lipinskisound.com

Listen, Inc. Boston, MA, USA www.listeninc.com

Little Labs Los Angeles, CA, USA www.littlelabs.com LMC Sound West Hollywood, CA, USA www.plus24.net

Location Sound Corp. N. Hollywood, CA, USA www.locationsound.com

Locomotive Audio St. Louis, MO, USA www.locomotiveaudio.com

Louder Than Liftoff San Jose, CA, USA www.louderthanliftoff .com/

Lundahl Transformers AB Norrtälje, Sweden www.lundahl.se

Lynx Studio Technology Costa Mesa, CA, USA www.lynxstudio.com

MAGIX – Samplitude – Sequoia Reno, NV, USA www.samplitude.com

MAGMA San Diego, CA, USA www.magma.com

Manley Laboratories, Inc. Chino, CA, USA www.manley.com

Marian Digital Audio Electronics West Hollywood, CA, USA www.plus24.net

Marshall Day Acoustics Grafton, Auckland, New Zealand www.iris.co.nz

Marshall Electronics El Segundo, CA, USA www.Marshall-usa.com

McDSP Mountain View, CA, USA mcdsp.com Merging Technologies Puidoux, Switzerland www.merging.com

***Meridian Audio Ltd.** New York, NY, USA www.meridian.co.uk

Microtech Gefell GmbH Gefell, Germany www.microtechgefell.de

Miktek, LLC Nashville, TN, USA www.miktekaudio.com

Millennia Media FPC Placerville, CA, USA www.mil-media.com

Mix New York, NY, USA www.mixonline.com

Mix with the Masters Paris Ile de France, France www.mixwiththemasters .com

Mogami Cable El Segundo, CA, USA www.mogamicable.com

Mojave Audio, Inc. Burbank, CA, USA www.mojaveaudio.com

Moog Music Inc. Asheville, NC, USA www.moogmusic.com

MOTU Cambridge, MA, USA www.motu.com

Munro Acoustics London, UK www.munro.co.uk

Music Maker Publications Boulder, CO, USA www.recordingmag.com

Music Marketing Inc. | Celemony Toronto, ON, Canada www.musicmarketing.ca

Musistic Memphis, TN, USA www.musistic.com

MUTEC -Sonic Distribution Somerville, MA, USA www.sonicus.net

MV Pro Audio Grants Pass, OR, USA www.mvproaudio.com

MXL Microphones El Segundo, CA, USA www.mxlmics.com

Mytek Digital Brooklyn, NY, USA www.mytekdigital.com

Neumann/USA Old Lyme, CT, USA www.sennheiserusa.com *Neutrik USA, Inc. Charlotte, NC, USA www.neutrik.com

NKK Switches Scottsdale, AZ, USA www.nkkswitches.com

NonLinearAudio Brooklyn, NY, USA www.nonlinearaudio.com

nonzero \ architecture Santa Monica, CA, USA nonzeroarch.com

NTI Americas Inc. Portland, OR, USA www.nti-audio.com

NTP Technology AS Gentofte, Denmark www.ntp.dk/digitalaudio.dk

NUGEN Audio New York, NY, USA www.nugenaudio.com

OCA Alliance, Inc. Bothell, WA, USA www.oca-alliance.com

Pacific PAC Technologies, Inc. Rancho Santa Margarita, CA, USA www.ppactech.com

PACSYS Limited

Nottingham, UK www.vibroacoustics.com

PCB Piezotronics Depew, NY, USA www.pcb.com

Pearlman Microphones Burbank, CA, USA www.pearlmanmicrophones. com

Pelonis Sound and Acoustics, Inc. Santa Barbara, CA, USA www.pelonissound.com

Pendulum Audio Inc. Gillette, NJ, USA www.pendulumaudio.com

Phoenix Audio Costa Mesa, CA, USA www.phoenixaudio.net

Pivitec, LLC Bethlehem, PA, USA www.pivitec.com

plus24 West Hollywood, CA, US www.plus24.net

***PMC Monitors** Irvine, CA, USA www.pmc-speakers.com

PMI Audio Group Gardena, CA, USA www.pmiaudio.com

PreSonus Baton Rouge, LA, USA www.presonus.com

J. Audio Eng. Soc., Vol. 62, No. 12, 2014 December

137th Exhibitors & Sponsors

***Prism Media Products, Inc.** Rockaway, NJ, USA www.prismsound.com

Pro Audio Distribution Pembroke, MA, USA www.proaudiodesign.com

Pro Audio LA Los Angeles, CA, USA proaudiola.com

Pro Audio Review New York, NY, USA www.prosoundnetwork.com

Pro Sound News New York, NY, USA www.prosoundnews.com

Pro Sound News Europe New York, NY, USA www.psneurope.com

Professional Audio Design, Inc. Pembroke, MA, USA www.proaudiodesign.com

Pulse Techniques, LLC Fort Collins, CO, USA www.pultec.com

Purple Audio LLC Jim Thorpe, PA, USA www.purpleaudio.com

Quantec München, Germany www.quantec.com

R&D Team Salgen, Germany www.randteam.de

Radial Engineering Ltd. Port Coquitlam, BC, Canada www.radialeng.com

Radio Active Designs Lincoln, NE, USA radioactiverf.com

RCI Custom Products Frederick, MD, USA www.RCIcustom.com

RealAcoustix LLC Farr West, UT, USA www.realacoustix.com

Resolution Haywards Heath, West Sussex, UK www.resolutionmag.com

*Rohde & Schwarz Columbia, MD, USA www.rohde-schwarz.com

Roll Music Systems Inc. Minneapolis, MN, USA www.rollmusic.com

Royer Labs Burbank, CA, USA www.royerlabs.com

RSPE Audio & Video Solutions Universal City, CA, USA www.rspeaudio.com **RTW GmbH & Co KG** Cologne, Germany www.rtw.cin

Rupert Neve Designs Wimberley, TX, USA rupertneve.com

Sandhill Audio Oy Pusula, Finland www.sandhillaudio.com

Sanken Microphones/plus24 West Hollywood, CA, USA www.sanken-mic.com

SBE Indianapolis, IN, USA www.sbe.org

Schurter, Inc. Santa Rosa, CA, USA www.schurterinc.com

sE Electronics Hitchin, Herts., UK www.seelectronics.com

*Sennheiser Electronic Corp. Old Lyme, CT, USA www.sennheiserusa.com

Shadow Hills Industries Kyle, TX, USA www.shadowhillsindustries. com

ShinyBox Covington, WA, USA www.shinybox.com

***Shure Inc.** Niles, IL, USA www.shure.com/americas

SKnote La Punta, Italy www.sknote.it

SMPTE White Plains, NY, USA www.smpte.org

Society of Professional Audio Recording Services (SPARS.COM) Palacios, TX, USA www.spars.com

*Solid State Logic New York, NY, USA www.solidstatelogic.com

Sonic Farm Audio Burnaby, BC, Canada

sonicfarm.com Sonnox Ltd. Finstock, Oxfordshire, UK www.sonnoxplugins.com

Sonodyne Technologies New Alipore, Kolkata, India www.transaudiogroup.com/ sonodyne

Sonoma Wire Works Los Altos, CA, USA www.sonomawireworks.com

Sontec Ripplemead, VA, USA www.iti-audio.com Sontronics Microphones Poole, Dorset, UK www.sontronics.com

Sony Electronics, Inc. Park Ridge, NJ, USA www.sony.com/professional

Sound & Picture Los Angeles, CA, USA soundandpicture.com

Sound & Video Contractor New York, NY, USA www.svconline.com

Sound Ideas Richmond Hill, ON, Canada www.sound-ideas.com

*Sound on Sound Bar Hill, Cambridge, UK www.soundonsound.com

Sound Radix www.soundradix.com

*Soundcraft Northridge, CA, USA www.soundcraft.com

Soundproof Windows Reno, NV, USA www.soundproofwindows .com

SoundToys, Inc. Burlington, VT, USA www.soundtoys.com

Source Elements LLC Evanston, IL, USA www.source-elements.com

SPL Niederkruechten, Germany www.spl.info

Stage Directions Las Vegas, NV, USA www.stage-directions.com

Stagetec (Salzbrenner Stagtec Mediagroup, Inc. Atlanta, GA, USA www.stagetec.com

Stanford Research Systems Sunnyvale, CA, USA www.thinksrs.com

Stonebridge Mastering & Egglestonworks TN, USA www.stonebridgemastering. com

***Studer** Northridge, CA, USA www.studer.ch

Studio Bau : Ton Santa Monica, CA, USA www.bauton.com

Studio Six Digital LLC Boulder, CO, USA Studiosixdigital.com

Swissaudec Cinuos-chel GR, Switzerland www.swissaudec.com **Tac System, Inc.** Tokyo, Japan www.tacsystem.com

Tape Op Magazine Sacramento, CA, USA www.tapeop.com

*TASCAM Montebello, CA, USA www.tascam.com

TC Applied Technologies Toronto, ON, Canada www.tctechnologies.tc

TC Electronic Kitchener, ON, Canada www.tcelectronic.com

TELEFUNKEN Elektroakustik South Windsor, CT, USA www.t-funk.com

***THAT Corporation** Milford, MA, USA www.thatcorp.com

THD-LABS 1Montreal, Quebec, Canada www.thd-labs.com

The Blackbird Academy Nashville, TN, USA theblackbirdacademy.com

The Record Company Boston, MA, USA www.therecordco.org

The Recording Academy Santa Monica, CA, USA www.grammypro.com

The Recording Studio Insurance Program Albany, NY, USA www.ajg.com/albany

Thermionic Culture Ltd. Harlow, Essex, UK www.thermionicculture .com

Tonecraft Audio La Jolla, CA, USA www.tonecraftaudio.com

Torus Power Toronto, ON, Canada www.toruspower.com

Towersonic UK www.towersonic.com

Transamerica Audio Group Las Vegas, NV, USA www.transaudiogroup.com

Tree Audio www.treeaudio.com

Triad-Orbit Advanced Stand Systems Kingston, WA, USA www.triad-orbit.com

Trinnov Audio Neuilly-Plaisance, France www.trinnov.com TruNorth Music and Sound, Inc.

Blainville, QC, Canada www.trunorthmusicandsound. com

Unity Audio Studio Monitors West Milford, NJ, USA www.unityaudio.co.uk

*Universal Audio, Inc. Scotts Valley, CA, USA www.uaudio.com

USITT (United States Institute for Theatre Technology) Syracuse, NY, USA www.usitt.org

UVI-Sounds and Software Paris, France www.uvi.net

*Vintage King Audio Ferndale, MI, USA www.vintageking.com

Wave Distro West Milford, NJ, USA www.wavedistro.com

Waves Inc. and DiGiGrid Knoxville, TN, USA www.waves.com

Weiss Engineering Ltd. Uster, Switzerland www.weiss.ch

WhisperRoom, Inc. Knoxville, TN, USA www.whisperroom.com

Women's Audio Mission San Francisco, CA, USA www.womensaudiomission. org

XQP Audio Tulsa, OK, USA www.xqpaudio.com

Yamaha Commercial Audio Systems, Inc. Buena Park, CA, USA www.yamahaca.com

Yellow Matter Entertainment/Slate Digital Los Angeles, CA, USA www.slatedigital.com

Zaor Studio Furniture Blainville, QC, Canada www.zaorstudiofurniture .com

Zaxcom Pompton Plains, NJ, USA www.zaxcom.com

903

Zynaptiq, GmbH Hannover, Germany www.zynaptiq.com